EMCON
1921 Ringwood Avenue • San Jose, California 95131-1721 • (408) 453-7300 • Fax (408) 437-9526

Date March 31, 1996
Project 20805-131.003

To:

Ms. Juliet Shin
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harborbay Parkway, Suite 250
Alameda, California 94502-6577

We are enclosing:

Copies	Description
1	Fourth quarter 1995 groundwater monitoring results for ARCO service station 6002, Oakland, California

For your:			Sent by:	
	X	Use		Regular Mail
		Approval		Standard Air
		Review		Courier
		Information	X	Other: Cert. Mail

Comments:
The enclosed groundwater monitoring report is being sent to you per the request of ARCO Products Company. Please call if you have questions or comments.

John C. Young
Project Manager

cc: Kevin Graves, RWQCB - SFBR
Michael Whelan, ARCO Products Company
Ivy Inouye, EMCON
File

ENVIRONMENTAL PROTECTION
96 MAR 20 PM 1:44

ARCO Products Company

Date:

March 31, 1996

Re: ARCO Station #

6002 • 6235 Seminary Avenue • Oakland, CA
Fourth Quarter 1995 Groundwater Monitoring Results

" I declare, that to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached proposal or report are true and correct."

Submitted by:

Michael R. Whelan

Michael R. Whelan
Environmental Engineer

EMCON
1921 Ringwood Avenue • San Jose, California 95131-1721 • **(408) 453-7300** • Fax (408) 437-9526

February 23, 1996
Project 20805-131.003

Mr. Michael Whelan
ARCO Products Company
P.O. Box 612530
San Jose, California 95161

Re: Fourth quarter 1995 groundwater monitoring program results, ARCO service station 6002, Oakland, California

Dear Mr. Whelan:

This letter presents the results of the fourth quarter 1995 groundwater monitoring program at ARCO Products Company (ARCO) service station 6002, 6235 Seminary Avenue, Oakland, California (Figure 1). The quarterly monitoring program complies with Alameda County Health Care Services Agency (ACHCSA) requirements regarding underground tank investigations.

MONITORING PROGRAM FIELD PROCEDURES AND RESULTS

A program of quarterly groundwater monitoring was initiated during the first quarter of 1994 to provide information concerning water quality, flow direction, and gradient consistent with ACHCSA and Regional Water Quality Control Board (RWQCB) requirements for underground fuel tank investigations. Wells MW-1 through MW-6 are monitored quarterly.

Beginning in the first quarter of 1996, wells MW-3 and MW-6 will be sampled annually, during the first quarter of the year. Wells MW-4 and MW-5 will be sampled quarterly. Water levels will be measured in all wells quarterly.

EMCON performed the fourth quarter 1995 groundwater monitoring event on November 13, 1995. Field work this quarter included (1) measuring depths to groundwater and subjectively analyzing groundwater for the presence of floating product in wells MW-1 through MW-6, (2) purging and subsequently sampling groundwater monitoring wells MW-1 through MW-6 for laboratory analysis, and (3) directing a state-certified laboratory to analyze the groundwater samples. Copies of all field data sheets from the fourth quarter 1995 groundwater monitoring event are included in Appendix A.

MONITORING PROGRAM RESULTS

Results of the fourth quarter 1995 groundwater monitoring event are summarized in Table 1 and illustrated in Figure 2. Historical groundwater elevation data are summarized

in Table 2. Table 3 summarizes historical analytical data for analysis of petroleum hydrocarbons and their constituents. Copies of the fourth quarter 1995 analytical results and chain-of-custody documentation are included in Appendix B.

Groundwater elevation data collected on November 13, 1995, indicate that groundwater beneath the site flows west-southwest with an approximate hydraulic gradient of 0.08 foot per foot. Figure 2 illustrates groundwater contours and analytical data for the fourth quarter of 1995.

LIMITATIONS

No monitoring event is thorough enough to describe all geologic and hydrogeologic conditions of interest at a given site. If conditions have not been identified during the monitoring event, such a finding should not therefore be construed as a guarantee of the absence of such conditions at the site, but rather as the result of the scope, limitations, and cost of work performed during the monitoring event.

SITE STATUS UPDATE

This update reports the site activities performed during the fourth quarter of 1995 and those anticipated for the first quarter of 1996.

Fourth Quarter 1995 Activities

- Prepared and submitted quarterly groundwater monitoring report for third quarter 1995.
- Performed quarterly groundwater monitoring for fourth quarter 1995.
- *Continued pursuit* of access to install off-site temporary monitoring points at two properties downgradient from ARCO service station 6002.

Work Anticipated for First Quarter 1996

- Prepare and submit quarterly groundwater monitoring report for fourth quarter 1995.
- Perform quarterly groundwater monitoring for first quarter 1996.
- Continue pursuit of access to install off-site temporary monitoring points at two properties downgradient from ARCO service station 6002.
- Excavate existing UST complex.

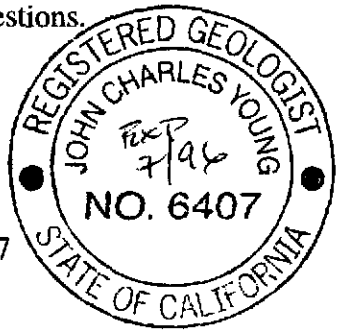
- Decommission groundwater monitoring wells MW-1 and MW-2 to allow for the installation of two new tanks.

- Perform a Tier 2 risk-based corrective action (RBCA) for the site.

Please call if you have questions.

Sincerely,

EMCON



John C. Young, R.G. 6407
Project Manager

Attachments:
- Table 1 - Groundwater Monitoring Data, Fourth Quarter 1995
- Table 2 - Historical Groundwater Elevation Data
- Table 3 - Historical Groundwater Analytical Data, Petroleum Hydrocarbons and Their Constituents
- Figure 1 - Site Location
- Figure 2 - Groundwater Data, Fourth Quarter 1995
- Appendix A - Field Data Sheets, Fourth Quarter 1995 Groundwater Monitoring Event
- Appendix B - Analytical Results and Chain-of-Custody Documentation, Fourth Quarter 1995

cc: Juliet Shin, ACHCSA
Kevin Graves, RWQCB - SFBR

Table 1
Groundwater Monitoring Data
Fourth Quarter 1995

ARCO Service Station 6002
6235 Seminary Avenue, Oakland, California

Date: 02-12-96

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Groundwater Flow Direction	Hydraulic Gradient	Water Sample Field Date	TPHG LUFT Method	Benzene EPA 8020	Toluene EPA 8020	Ethylbenzene EPA 8020	Total Xylenes EPA 8020	MTBE EPA 8020	MTBE EPA 8240
		ft-MSL	feet	ft-MSL	feet	MWN	ft/ft		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-1	11-13-95	247.06	8.78	** 238.29	0.01	WSW	0.08	11-13-95	11000	570	17	260	410	- -	25000
MW-2	11-13-95	249.30	10.32	238.98	ND	WSW	0.08	11-13-95	<50	<0.5	<0.5	<0.5	<0.5	- -	- -
MW-3	11-13-95	248.35	8.25	240.10	ND	WSW	0.08	11-13-95	120	45	0.7	<0.5	6.2	- -	- -
MW-4	11-13-95	242.91	11.75	231.16	ND	WSW	0.08	11-13-95	<50	<0.5	<0.5	<0.5	<0.5	- -	- -
MW-5	11-13-95	244.82	13.65	231.17	ND	WSW	0.08	11-13-95	21000	1300	22	1400	630	- -	- -
MW-6	11-13-95	NR	7.70	NR	ND	WSW	0.08	11-13-95	<50	<0.5	<0.5	<0.5	<0.5	<3	- -

TOC: top of casing
ft-MSL: elevation in feet, relative to mean sea level
MWN: groundwater flow direction and gradient apply to the entire monitoring well network
TPHG: total petroleum hydrocarbons as gasoline
µg/L: micrograms per liter
** [corrected elevation (Z')] = Z + (h * 0.73) where: Z: measured elevation, h: floating product thickness, 0.73: density ratio of oil to water
WSW: west-southwest
- - : not analyzed
ND: none detected
NR; not reported; data not available or not measurable

Table 2
Historical Groundwater Elevation Data

ARCO Service Station 6002
6235 Seminary Avenue, Oakland, California

Date: 02-12-96

Well Designation	Water Level Field Date	Top of Casing Elevation ft-MSL	Depth to Water feet	Groundwater Elevation ft-MSL	Floating Product Thickness feet	Groundwater Flow Direction MWN	Hydraulic Gradient foot/foot
MW-1	01-21-94	247.06	7.82	239.24	ND	NR	NR
MW-1	07-08-94	247.06	8.32	238.74	ND	W	0.08
MW-1	09-24-94	247.06	8.84	238.22	ND	WSW	0.08
MW-1	11-21-94	247.06	7.27	239.79	ND	SW	0.07
MW-1	03-15-95	247.06	7.37	239.69	ND	WSW	0.08
MW-1	05-30-95	247.06	8.48	238.58	ND	WSW	0.08
MW-1	09-01-95	247.06	9.47	237.59	ND	WSW	0.09
MW-1	11-13-95	247.06	8.78	** 238.29	0.01	WSW	0.08
MW-2	07-08-94	249.30	9.51	239.79	ND	W	0.08
MW-2	09-24-94	249.30	10.02	239.28	ND	WSW	0.08
MW-2	11-21-94	249.30	7.83	241.47	ND	SW	0.07
MW-2	03-15-95	249.30	8.25	241.05	ND	WSW	0.08
MW-2	05-30-95	249.30	9.93	239.37	ND	WSW	0.08
MW-2	09-01-95	249.30	10.69	238.61	ND	WSW	0.09
MW-2	11-13-95	249.30	10.32	238.98	ND	WSW	0.08
MW-3	07-08-94	248.35	7.75	240.60	ND	W	0.08
MW-3	09-24-94	248.35	8.14	240.21	ND	WSW	0.08
MW-3	11-21-94	248.35	6.80	241.55	ND	SW	0.07
MW-3	03-15-95	248.35	6.76	241.59	ND	WSW	0.08
MW-3	05-30-95	248.35	7.81	240.54	ND	WSW	0.08
MW-3	09-01-95	248.35	8.65	239.70	ND	WSW	0.09
MW-3	11-13-95	248.35	8.25	240.10	ND	WSW	0.08
MW-4	07-08-94	242.91	10.97	231.94	ND	W	0.08
MW-4	09-24-94	242.91	11.81	231.10	ND	WSW	0.08
MW-4	11-21-94	242.91	9.14	233.77	ND	SW	0.07
MW-4	03-15-95	242.91	9.37	233.54	ND	WSW	0.08
MW-4	05-30-95	242.91	11.47	231.44	ND	WSW	0.08
MW-4	09-01-95	242.91	12.28	230.63	ND	WSW	0.09
MW-4	11-13-95	242.91	11.75	231.16	ND	WSW	0.08

Table 2
Historical Groundwater Elevation Data

ARCO Service Station 6002
6235 Seminary Avenue, Oakland, California

Date: 02-12-96

Well Designation	Water Level Field Date	Top of Casing Elevation ft-MSL	Depth to Water feet	Groundwater Elevation ft-MSL	Floating Product Thickness feet	Groundwater Flow Direction MWN	Hydraulic Gradient foot/foot
MW-5	07-08-94	244.82	12.94	231.88	ND	W	0.08
MW-5	09-24-94	244.82	13.60	231.22	ND	WSW	0.08
MW-5	11-21-94	244.82	12.45	232.37	ND	SW	0.07
MW-5	03-15-95	244.82	11.99	232.83	ND	WSW	0.08
MW-5	05-30-95	244.82	12.97	231.85	ND	WSW	0.08
MW-5	09-01-95	244.82	14.03	230.79	ND	WSW	0.09
MW-5	11-13-95	244.82	13.65	231.17	ND	WSW	0.08
MW-6	06-29-95	NR	6.63	NR	ND	NR	NR
MW-6	09-01-95	NR	Not surveyed:				
MW-6	11-13-95	NR	7.70	NR	ND	WSW	0.08
AS-1	06-29-95	NR	9.20	NR	ND	NR	NR

ft-MSL: elevation in feet, relative to mean sea level
MWN: ground-water flow direction and gradient apply to the entire monitoring well network
ND: none detected
NR: not reported; data not available or not measurable
W: west
WSW: west-southwest
SW: southwest
** [corrected elevation (Z')] = Z + (h * 0.73) where: Z: measured elevation, h: floating product thickness, 0.73: density ratio of oil to water

Table 3
Historical Groundwater Analytical Data
Petroleum Hydrocarbons and Their Constituents

ARCO Service Station 6002
6235 Seminary Avenue, Oakland, California

Date: 02-12-96

Well Designation	Water Sample Field Date	**TPHG** LUFT Method µg/L	**Benzene** EPA 8020 µg/L	**Toluene** EPA 8020 µg/L	**Ethylbenzene** EPA 8020 µg/L	**Total Xylenes** EPA 8020 µg/L	**MTBE** EPA 8020 µg/L	**MTBE** EPA 8240 µg/L
MW-1	01-21-94	18000	1300	1600	250	1900	--	--
MW-1	07-08-94	21000	5200	<50	1000	1500	--	--
MW-1	09-24-94	13000	2900	37	830	640	--	--
MW-1	11-21-94	12000	2800	160	640	1300	--	--
MW-1	03-15-95	13000	1200	44	770	1100	--	--
MW-1	05-30-95	19000	1600	30	890	1400	--	--
MW-1	09-01-95	14000	1300	28	480	780	24000	--
MW-1	11-13-95	11000	570	17	260	410	--	25000
MW-2	07-08-94	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-2	09-24-94	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-2	11-21-94	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-2	03-15-95	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-2	05-30-95	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-2	09-01-95	<50	<0.5	<0.5	<0.5	<0.5	<3	--
MW-2	11-13-95	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-3	07-08-94	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-3	09-24-94	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-3	11-21-94	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-3	03-15-95	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-3	05-30-95	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-3	09-01-95	<50	<0.5	<0.5	<0.5	<0.5	<3	--
MW-3	11-13-95	120	45	0.7	<0.5	6.2	--	--
MW-4	07-08-94	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-4	09-24-94	140	<0.5	<0.5	<0.9	<0.5	--	--
MW-4	11-21-94	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-4	03-15-95	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-4	05-30-95	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-4	09-01-95	78	<0.5	0.7	<0.5	<0.5	<3	--
MW-4	11-13-95	<50	<0.5	<0.5	<0.5	<0.5	--	--

Strong odor noted in this well during sampling.

Suddenly getting fairly high hit of benzene (maybe due to well carrying during bailing?)

Table 3
Historical Groundwater Analytical Data
Petroleum Hydrocarbons and Their Constituents

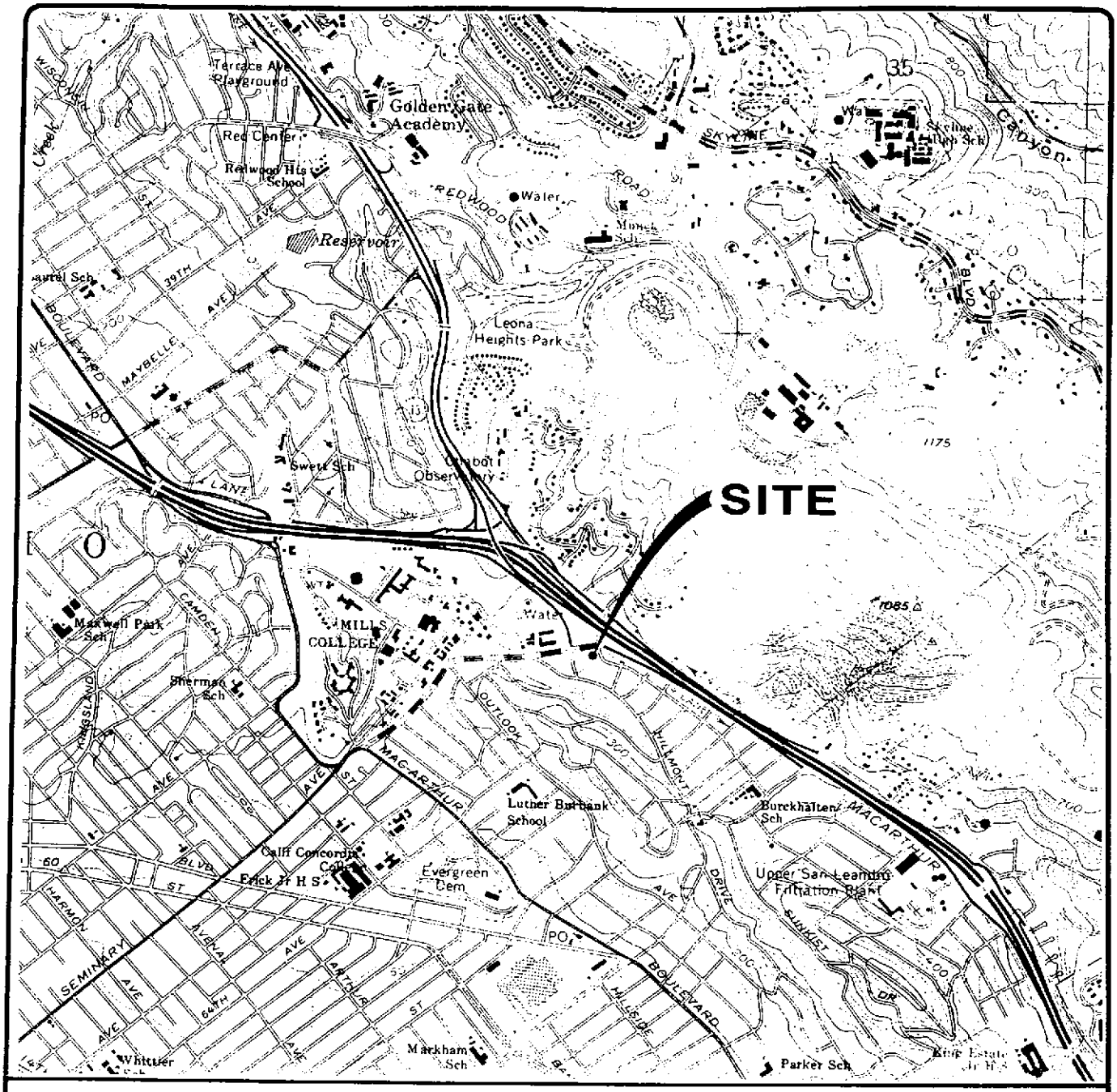
ARCO Service Station 6002
6235 Seminary Avenue, Oakland, California

Date: 02-12-96

Well Designation	Water Sample Field Date	TPHG LUFT Method	Benzene EPA 8020	Toluene EPA 8020	Ethylbenzene EPA 8020	Total Xylenes EPA 8020	MTBE EPA 8020	MTBE EPA 8240
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-5	07-08-94	41000	3300	<50	2200	2900	--	--
MW-5	09-24-94	28000	4000	<50	2400	2100	--	--
MW-5	11-21-94	38000	3100	<50	3100	4100	--	--
MW-5	03-15-95	21000	870	22	1600	1900	--	--
MW-5	05-30-95	17000	2100	250	1000	520	--	--
MW-5	09-01-95	19000	1500	25	1600	880	8300	--
MW-5	11-13-95	21000	1300	22	1400	630	--	--
MW-6	06-30-95	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-6	09-01-95	Not sampled:						
MW-6	11-13-95	<50	<0.5	<0.5	<0.5	<0.5	<3	--
AS-1	06-30-95	<50	1.6	<0.5	0.9	0.9	--	--

TPHG: total petroleum hydrocarbons as gasoline, California DHS LUFT Method
µg/L: micrograms per liter
EPA: United Statest Environmental Protection Agency
MTBE: Methyl-tert-butyl ether
- - : not analyzed

152753

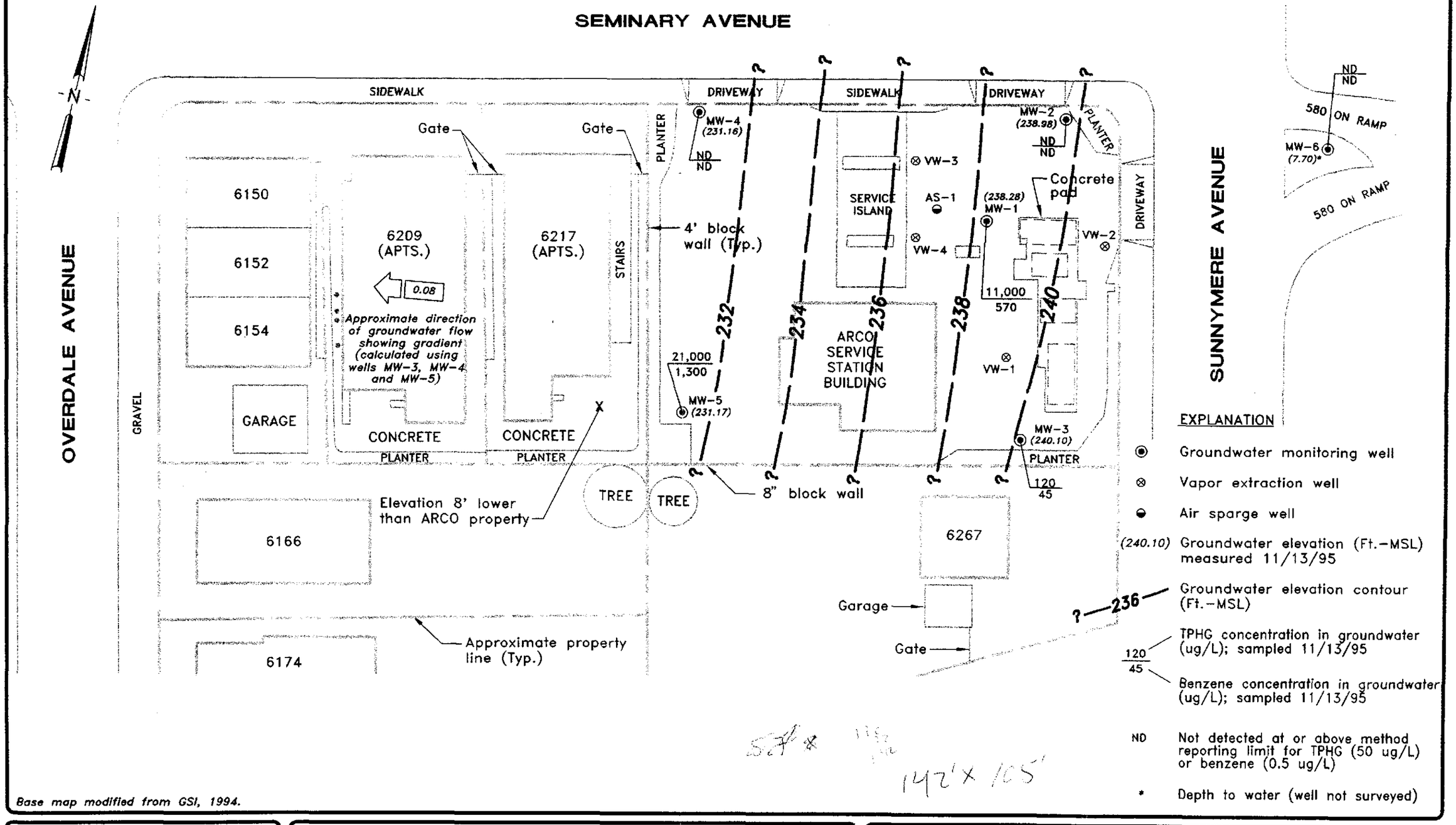


EMCON

ARCO PRODUCTS COMPANY
SERVICE STATION 6002, 6235 SEMINARY AVE.
QUARTERLY GROUNDWATER MONITORING
OAKLAND, CALIFORNIA

SITE LOCATION

FIGURE
1
PROJECT NO.
805-131.03



EXPLANATION

- ◉ Groundwater monitoring well
- ⊗ Vapor extraction well
- ◒ Air sparge well
- (240.10) Groundwater elevation (Ft.–MSL) measured 11/13/95
- Groundwater elevation contour (Ft.–MSL)
- 120 / 45 TPHG concentration in groundwater (ug/L); sampled 11/13/95 / Benzene concentration in groundwater (ug/L); sampled 11/13/95
- ND Not detected at or above method reporting limit for TPHG (50 ug/L) or benzene (0.5 ug/L)
- * Depth to water (well not surveyed)

Base map modified from GSI, 1994.

57' × 115'
142' × 105'

EMCON

SCALE: 0 15 30 45 60 FEET

ARCO PRODUCTS COMPANY
SERVICE STATION 6002, 6235 SEMINARY AVE.
QUARTERLY GROUNDWATER MONITORING
OAKLAND, CALIFORNIA

GROUNDWATER DATA
FOURTH QUARTER 1995

FIGURE NO. 2

PROJECT NO. 805-131.03

G:\805-131\GWCHEM REV 0 02/14/96 16:07:08 KAJ DJ

FIELD REPORT
DEPTH TO WATER / FLOATING PRODUCT SURVEY

PROJECT # : 1775-241.01 STATION ADDRESS : 6235 Seminary Avenue DATE : 11-13-95

ARCO STATION # : 6002 FIELD TECHNICIAN : M. Gallegos DAY : Monday

DTW Order	WELL ID	Well Box Seal	Well Lid Secure	Gasket	Lock	Locking Well Cap	FIRST DEPTH TO WATER (feet)	SECOND DEPTH TO WATER (feet)	DEPTH TO FLOATING PRODUCT (feet)	FLOATING PRODUCT THICKNESS (feet)	WELL TOTAL DEPTH (feet)	COMMENTS
1	MW-6	good	good	good	Dolphin	good	7.70	7.70	NA	NA	31.9	
2	MW-2	Good	Good	Good	Arco	good	10.32	10.32			17.6	
3	MW-3						8.25	8.25			24.5	
4	MW-4						11.75	11.75			24.1	
5	MW-1						8.78	8.78			24.2	.01 product in well
6	MW-5						13.65	13.65			24.4	

SURVEY POINTS ARE TOP OF WELL CASINGS

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 7775-24.01 SAMPLE ID: MW-1 (24")

PURGED BY: M. Gallegos CLIENT NAME: ARCO #6002

SAMPLED BY: " LOCATION: Oakland, CA

TYPE: Ground Water X Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 ___ 3 ___ 4 X 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL): NR VOLUME IN CASING (gal.): 10.07

DEPTH TO WATER (feet): 8.78 CALCULATED PURGE (gal.): 30.22

DEPTH OF WELL (feet): 24.2 ACTUAL PURGE VOL. (gal.): 26.0

DATE PURGED: 11-13-95 Start (2400 Hr) 1458 End (2400 Hr) 1510

DATE SAMPLED: " Start (2400 Hr) 1520 End (2400 Hr) ___

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1502	10.0	6.32	742	71.0	Cloudy	Mod
1506	20.0	6.71	743	70.0	Brn	Mod
1510	Well dried at 26.0 Gallons					
1522	Recharge	6.85	734	69.0	"	"

D. O. (ppm): NR ODOR: Strong

COLOR (COBALT 0 - 500): NR

TURBIDITY (NTU 0 - 200 or 0 - 1000): NR

Field QC samples collected at this well: NR

Parameters field filtered at this well: NR

PURGING EQUIPMENT

___ 2" Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Well Wizard™
___ Bailer (Teflon®)
X Bailer (PVC)
___ Bailer (Stainless Steel)
___ Dedicated
Other: ___

SAMPLING EQUIPMENT

___ 2" Bladder Pump
___ DDL Sampler
___ Dipper
___ Well Wizard™
X Bailer (Teflon®)
___ Bailer (Stainless Steel)
___ Submersible Pump
___ Dedicated
Other: ___

WELL INTEGRITY: Good LOCK #: ARCO KEY

REMARKS: Oil sample taken

Meter Calibration: Date: 11-13-95 Time: ___ Meter Serial #: 9011 Temperature °F: ___

(EC 1000 ___ / ___) (DI ___) (pH 7 ___ / ___) (pH 10 ___ / ___) (pH 4 ___ / ___)

Location of previous calibration: ___

Signature: [signature] Reviewed By: [signature] Page 1 of 6

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 1775-24.01 SAMPLE ID: MW-2 (17')

PURGED BY: M. Gallegos CLIENT NAME: ARCO # 6002

SAMPLED BY: ↓ LOCATION: OAKland, CA.

TYPE: Ground Water ✓ Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 ___ 3 ___ 4 X 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL): NR VOLUME IN CASING (gal.): 3.56

DEPTH TO WATER (feet): 10.32 CALCULATED PURGE (gal.): 14.24

DEPTH OF WELL (feet): 17.6 ACTUAL PURGE VOL. (gal.): 14.5

DATE PURGED: 11-13-95 Start (2400 Hr) 1255 End (2400 Hr) 1306

DATE SAMPLED: ↓ Start (2400 Hr) 1312 End (2400 Hr) —

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1258	3.5	6.01	406	59.3	BRN	HEAVY
1301	7.0	6.19	366	67.0	"	"
1303	10.5	6.53	316	71.5	"	"
1306	14.5	6.46	321	71.8	"	"

D. O. (ppm): NR ODOR: Strong

COLOR (COBALT 0 - 500): NR

TURBIDITY (NTU 0 - 200 or 0 - 1000): NR

Field QC samples collected at this well: NR

Parameters field filtered at this well: NR

PURGING EQUIPMENT

___ 2" Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Well Wizard™
___ Bailer (Teflon®)
✓ Bailer (PVC)
___ Bailer (Stainless Steel)
___ Dedicated
Other: ___

SAMPLING EQUIPMENT

___ 2" Bladder Pump
___ DDL Sampler
___ Dipper
___ Well Wizard™
✓ Bailer (Teflon®)
___ Bailer (Stainless Steel)
___ Submersible Pump
___ Dedicated
Other: ___

WELL INTEGRITY: Good LOCK #: ARCO

REMARKS: Oil Sample taken

Meter Calibration: Date: 11-13-95 Time: 1240 Meter Serial #: 9011 Temperature °F: 69.0

(EC 1000 953 / 1000) (DI ___) (pH 7 6.97 / 7.00) (pH 10 1000 / 1000) (pH 4 4.00 / 4.00)

Location of previous calibration: ___

Signature: [signature] Reviewed By: SF Page 2 of 6

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 1775-2401 SAMPLE ID: MW-3 (24')

PURGED BY: M. Gallegos CLIENT NAME: ARCO (Conoz)

SAMPLED BY: " LOCATION: Oakland, CA

TYPE: Ground Water X Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 ___ 3 ___ 4 X 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL): NR VOLUME IN CASING (gal.): 10.61

DEPTH TO WATER (feet): 8.25 CALCULATED PURGE (gal.): 31.85

DEPTH OF WELL (feet): 24.5 ACTUAL PURGE VOL. (gal.): 27.0

DATE PURGED: 11-13-95 Start (2400 Hr) 1342 End (2400 Hr) 1354

DATE SAMPLED: " Start (2400 Hr) 1400 End (2400 Hr) ___

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1346	10.5	6.42	356	72.6	BRN	HEAVY
1351	21.0	6.29	359	69.3	"	"
___	well dried at	27.0	Gallons	___	"	"
1402	Discharge	6.56	36.5	69.4	"	V
___	___	___	___	___	___	___

D. O. (ppm): NR ODOR: Moderate

NR (COBALT 0 - 500) NR (NTU 0 - 200 or 0 - 1000)

Field QC samples collected at this well: NR

Parameters field filtered at this well: NR

PURGING EQUIPMENT

___ 2" Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Well Wizard™
X Bailer (PVC)
___ Bailer (Teflon®)
___ Bailer (Stainless Steel)
___ Dedicated
Other: ___

SAMPLING EQUIPMENT

___ 2" Bladder Pump
___ DDL Sampler
___ Dipper
___ Well Wizard™
X Bailer (Teflon®)
___ Bailer (Stainless Steel)
___ Submersible Pump
___ Dedicated
Other: ___

WELL INTEGRITY: Good LOCK #: ARCO Key

REMARKS: well Sampled by Kelson

Meter Calibration: Date: 11-13-95 Time: ___ Meter Serial #: 9011 Temperature °F: ___

(EC 1000 ___ ~~7.00~~) (DI ___) (pH 7 ___ / ___) (pH 10 ___ / ___) (pH 4 ___ / ___)

Location of previous calibration: MW-2

Signature: [signature] Reviewed By: [signature] Page 3 of 6

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 1775-241.01 SAMPLE ID: MW-4 (24')

PURGED BY: M. Gallegos CLIENT NAME: ARCO 6002

SAMPLED BY: V LOCATION: Oakland, CA

TYPE: Ground Water X Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 ___ 3 ___ 4 X 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL): NR VOLUME IN CASING (gal.): 8.06

DEPTH TO WATER (feet): 11.75 CALCULATED PURGE (gal.): 24.20

DEPTH OF WELL (feet): 24.1 ACTUAL PURGE VOL. (gal.): 17.5

DATE PURGED: 11-13-95 Start (2400 Hr) 1416 End (2400 Hr) [illegible]1426

DATE SAMPLED: V Start (2400 Hr) 1432 End (2400 Hr) ___

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1420	8.0	6.20	329	72.1	BRN	Heavy
1424	16.0	6.09	333	70.2	"	"
___	well	dried	@ 17.5	gallons		
1433	recharge	6.15	338	70.1	"	V
___	___	___	___	___	___	___

D. O. (ppm): NR ODOR: none. COLOR: NR (COBALT 0 - 500) TURBIDITY: NR (NTU 0 - 200 or 0 - 1000)

Field QC samples collected at this well: NR

Parameters field filtered at this well: NR

PURGING EQUIPMENT

___ 2" Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Well Wizard™
___ Bailer (Teflon®)
X Bailer (PVC)
___ Bailer (Stainless Steel)
___ Dedicated
Other: ___

SAMPLING EQUIPMENT

___ 2" Bladder Pump
___ DDL Sampler
___ Dipper
___ Well Wizard™
X Bailer (Teflon®)
___ Bailer (Stainless Steel)
___ Submersible Pump
___ Dedicated
Other: ___

WELL INTEGRITY: Good LOCK #: ARCO Key

REMARKS: Coll Sample for Kan

Meter Calibration: Date: 11-13-95 Time: ___ Meter Serial #: 5011 Temperature °F: ___

(EC 1000 ___ / ___) (DI ___) (pH 7 ___ / ___) (pH 10 ___ / ___) (pH 4 ___ / ___)

Location of previous calibration: MW-2

Signature: [signature] Reviewed By: SA Page 4 of 6

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 1775-241-01 SAMPLE ID: MW-5 (24')

PURGED BY: M. Gallegos CLIENT NAME: ARCO # 6002

SAMPLED BY: ↓ LOCATION: OAKland, CA

TYPE: Ground Water X Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 ___ 3 ___ 4 X 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL): N/A VOLUME IN CASING (gal.): 7.00

DEPTH TO WATER (feet): 13.68 CALCULATED PURGE (gal.): 21.01

DEPTH OF WELL (feet): 24.4 ACTUAL PURGE VOL. (gal.): 10.0

DATE PURGED: 11-15-95 Start (2400 Hr) 1008 End (2400 Hr) 1014

DATE SAMPLED: ↓ Start (2400 Hr) 1020 End (2400 Hr) —

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1012	7.0	6.26	765	66.6	BRN	HEAVY
	well dried @	± 10.0	Gallons			
1024	recharge	6.26	766	67.1	↓	↓

D. O. (ppm): NR ODOR: Strong

Field QC samples collected at this well: NR

Parameters field filtered at this well: NR

NR (COBALT 0 - 500)

NR (NTU 0 - 200 or 0 - 1000)

PURGING EQUIPMENT

___ 2" Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Well Wizard™
___ Bailer (Teflon®)
X Bailer (PVC)
___ Bailer (Stainless Steel)
___ Dedicated
Other: ___

SAMPLING EQUIPMENT

___ 2" Bladder Pump
___ DDL Sampler
___ Dipper
___ Well Wizard™
X Bailer (Teflon®)
___ Bailer (Stainless Steel)
___ Submersible Pump
___ Dedicated
Other: ___

WELL INTEGRITY: Good LOCK #: ARCO KEY

REMARKS: heavy product sheen on top of purge water.

all samples taken

Meter Calibration: Date: 11-15-95 Time: 1005 Meter Serial #: 9011 Temperature °F: 61.9

(EC 1000 1007/1000) (DI ___) (pH 7 7.10/7.00) (pH 10 9.94/10.00) (pH 4 3.97/ ___)

Location of previous calibration: ___

Signature: [signature] Reviewed By: [signature] Page 5 of 6

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 1775-241-01 SAMPLE ID: MW-6 (31')

PURGED BY: M. GOLLEGOS CLIENT NAME: ARCO # 6002

SAMPLED BY: V/ LOCATION: OAKLAND, CA

TYPE: Ground Water X Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 X 3 ___ 4 ___ 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL): N/R VOLUME IN CASING (gal.): 3.94

DEPTH TO WATER (feet): 7.73 CALCULATED PURGE (gal.): 11.84

DEPTH OF WELL (feet): 31.9 ACTUAL PURGE VOL (gal.): 12.0

DATE PURGED: 11-15-95 Start (2400 Hr) 1040 End (2400 Hr) 1048

DATE SAMPLED: V Start (2400 Hr) 1055 End (2400 Hr) —

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1043	4.0	7.26	460	65.0	Cloudy	mod
1045	8.0	7.34	464	65.8	"	"
1048	12.0	7.41	461	66.6	BRN	"

D. O. (ppm): N/R ODOR: none

N/R (COBALT 0 - 500) N/R (NTU 0 - 200 or 0 - 1000)

Field QC samples collected at this well: N/R

Parameters field filtered at this well: N/R

PURGING EQUIPMENT

___ 2" Bladder Pump ___ Bailer (Teflon®)

___ Centrifugal Pump X Bailer (PVC)

___ Submersible Pump ___ Bailer (Stainless Steel)

___ Well Wizard™ ___ Dedicated

Other: ___

SAMPLING EQUIPMENT

___ 2" Bladder Pump X Bailer (Teflon®)

___ DDL Sampler ___ Bailer (Stainless Steel)

___ Dipper ___ Submersible Pump

___ Well Wizard™ ___ Dedicated

Other: ___

WELL INTEGRITY: Good LOCK #: ARCO Key

REMARKS: 4 Samples Taken

Meter Calibration: Date: 11-15-95 Time: ___ Meter Serial #: 9011 Temperature °F: ___

(EC 1000 ___ / ___) (DI ___) (pH 7 ___ / ___) (pH 10 ___ / ___) (pH 4 ___ / ___)

Location of previous calibration: MW-5

Signature: [signature] Reviewed By: [signature] Page 6 of 6

Columbia Analytical Services inc.

December 7, 1995

Service Request No: S9501441

John Young
EMCON
1921 Ringwood Avenue
San Jose, CA 95131

Re: **0805-131.03 / TO# 17075.00 / 6002 Oakland**

Dear Mr. Young:

The following pages contain analytical results for sample(s) received by the laboratory on November 15, 1995. Results of sample analyses are followed by Appendix A which contains sample custody documentation and quality assurance deliverables requested for this project. The work requested has been assigned the Service Request No. listed above - to help expedite our service please refer to this number when contacting the laboratory.

Analytical results were produced by procedures consistent with Columbia Analytical Services' (CAS) Quality Assurance Manual (with any deviations noted). Signature of this CAS Analytical Report below confirms that pages 2 through 13, following, have been thoroughly reviewed and approved for release in accord with CAS Standard Operating Procedure ADM-DatRev3.

Please feel welcome to contact me should you have questions or further needs.

Sincerely:

Steven L. Green
Project Chemist

Annelise J. Bazar
Regional QA Coordinator

SLG/ajb

1921 Ringwood Avenue • San Jose, California 95131 • Telephone 408/437-2400 • Fax 408/437-9356

COLUMBIA ANALYTICAL SERVICES, Inc.
Acronyms

A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U. S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl tert-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	Not Detected at or above the method reporting/detection limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	Standard Methods for the Examination of Water and Wastewater, 18th Ed., 1992
STLC	Solubility Threshold Limit Concentration
SW	Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Ed., 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level. The concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

ACRONLST.DOC 7/14/95

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Arco Product Company	**Service Request:**	S9501441
Project:	0805-131.03/TO#317075/6002 Oakland	**Date Collected:**	11/13,15/95
Sample Matrix:	Water	**Date Received:**	11/15/95
		Date Extracted:	N/A

BTEX, MTBE and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
Units: ug/L (ppb)

Sample Name:	**MW-6 (31)**	**MW-2 (17)**	**MW-3 (24)**
Lab Code:	S9501441-001	S9501441-002	S9501441-003
Date Analyzed:	11/28/95	11/28/95	11/28/95

Analyte	**MRL**			
TPH as Gasoline	50	ND	ND	120
Benzene	0.5	ND	ND	45
Toluene	0.5	ND	ND	0.7
Ethylbenzene	0.5	ND	ND	ND
Total Xylenes	0.5	ND	ND	6.2
Methyl-tert-butyl ether	3	ND	*	*

* Not Requested

3S22/060194

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Arco Product Company	**Service Request:**	S9501441
Project:	0805-131.03/TO#317075/6002 Oakland	**Date Collected:**	11/13,15/95
Sample Matrix:	Water	**Date Received:**	11/15/95
		Date Extracted:	N/A

BTEX, MTBE and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
Units: ug/L (ppb)

		Sample Name:	**MW-4 (24)**	**MW-1 (24)**	**MW-5 (24)**
		Lab Code:	S95001441-004	S9501441-005	S9501441-006
		Date Analyzed:	11/28/95	11/28/95	11/28/95
Analyte	**MRL**				
TPH as Gasoline	50		ND	11000	21000
Benzene	0.5		ND	570	1300
Toluene	0.5		ND	17	22
Ethylbenzene	0.5		ND	260	1400
Total Xylenes	0.5		ND	410	630
Methyl-tert-butyl ether	3		*	*	*

* Not Requested

3S22/060194

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Arco Product Company	**Service Request:**	S9501441
Project:	0805-131.03/TO#317075/6002 Oakland	**Date Collected:**	11/13,15/95
Sample Matrix:	Water	**Date Received:**	11/15/95
		Date Extracted:	N/A

BTEX, MTBE and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
Units: ug/L (ppb)

Sample Name:	**Method Blank**
Lab Code:	S951128-WMB
Date Analyzed:	11/28/95

Analyte	**MRL**	
TPH as Gasoline	50	ND
Benzene	0.5	ND
Toluene	0.5	ND
Ethylbenzene	0.5	ND
Total Xylenes	0.5	ND
Methyl-tert-butyl ether	3	ND

3S22/060194

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Arco Product Company	**Service Request:**	S9501441
Project:	0805-131.03/TO#317075/6002 Oakland	**Date Collected:**	11/13/95
Sample Matrix:	Water	**Date Received:**	11/15/95
		Date Extracted:	NA

Volatile Organic Compounds
EPA Method 8240
Units: ug/L (ppb)

		Sample Name:	**MW-1 (24)**	**Method Blank**
		Lab Code:	S9501441-005	951121-WMB
		Date Analyzed:	11/21/95	11/21/95
Analyte	**MRL**			
MTBE	1		25000	ND

3S44/060194

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Arco Product Company
Project: 0805-131.03/TO#317075/6002 Oakland
Sample Matrix: Water

Service Request: S9501441
Date Collected: 11/13,14/95
Date Received: 11/15/95
Date Extracted: NA
Date Analyzed: 11/28/95

Surrogate Recovery Summary
BTEX, MTBE and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method

Sample Name	Lab Code	PID Detector Percent Recovery 4-Bromofluorobenzene	FID Detector Percent Recovery α,α,α–Trifluorotoluene
MW-6 (31)	S9501441-001	89	106
MW-2 (17)	S9501441-002	93	99
MW-3 (24)	S9501441-003	92	99
MW-4 (24)	S9501441-004	94	100
MW-1 (24)	S9501441-005	94	101
MW-5 (24)	S9501441-006	94	104
Method Blank	S951128-WMB	96	95
CAS Acceptance Limits:		69-116	69-116

SUR2/060194

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Arco Product Company	**Service Request:**	S9501441
Project:	0805-131.03/TO#317075/6002 Oakland	**Date Analyzed:**	11/13,15/95

Initial Calibration Verification (ICV) Summary
BTEX, MTBE and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
Units: ppb

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
Benzene	25	27.1	108	85-115
Toluene	25	24.2	97	85-115
Ethylbenzene	25	27.0	108	85-115
Xylenes, Total	75	83.2	111	85-115
Gasoline	250	226	90	90-110
Methyl-tert-butyl Ether	50	55	110	85-115

ICV25AL/060194

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Arco Product Services	**Service Request:**	S9501441
Project:	0805-131.03/TO#317075/6002 Oakland	**Date Collected:**	11/13,15/95
Sample Matrix:	Water	**Date Received:**	11/15/95
		Date Extracted:	NA
		Date Analyzed:	11/28/95

Matrix Spike/Duplicate Matrix Spike Summary
TPH as Gasoline
EPA Methods 5030/California DHS LUFT Method
Units: ug/L (ppb)

Sample Name: Batch QC Sample
Lab Code: S9501440-001

	Spike Level		Sample	Spike Result		Percent Recovery		CAS Acceptance	Relative Percent
Analyte	MS	DMS	**Result**	MS	DMS	MS	DMS	Limits	**Difference**
Gasoline	250	250	ND	235	244	94	98	67-121	4

DMS1S/060194

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Arco Product Services	**Service Request:**	S9501441
Project:	0805-131.03/TO#31075/6002 Oakland	**Date Collected:**	11/13/95
Sample Matrix:	Water	**Date Received:**	11/15/95
		Date Extracted:	NA
		Date Analyzed:	11/21/95

Surrogate Recovery Summary
Volatile Organic Compounds
EPA Method 8240

		Percent Recovery		
Sample Name	**Lab Code**	1,2-Dichloroethane-D_4	Toluene-D_8	4-Bromofluorobenzene
MW-1 (24)	S9501441-005	100	104	98
Method Blank	951121-WMB	97	101	97
CAS Acceptance Limits:		76-114	88-110	86-115

SUR3/060194

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 0805-131.03/TO#317075/6002 Oakland

Service Request: S9501441
Date Analyzed: 8/24/95

Initial Calibration Verification (ICV) Summary
Volatile Organic Compounds
EPA Method 624
Units: ppb

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
Chloromethane	50	50.1	100	70-130
Vinyl Chloride	50	53.0	106	70-130
Bromomethane	50	53.2	106	70-130
Chloroethane	50	53.4	107	70-130
Acetone	50	59.7	119	70-130
1,1-Dichloroethene	50	56.5	113	70-130
Carbon Disulfide	50	52.8	106	70-130
Methylene Chloride	50	54.6	109	70-130
trans-1,2-Dichloroethene	50	56.0	112	70-130
cis-1,2-Dichloroethene	50	55.6	111	70-130
1,1-Dichloroethane	50	56.2	112	70-130
Vinyl Acetate	50	45.8	92	70-130
2-Butanone (MEK)	50	53.8	108	70-130
Chloroform	50	56.6	113	70-130
1,1,1-Trichloroethane (TCA)	50	56.8	114	70-130
Carbon Tetrachloride	50	54.3	109	70-130
Benzene	50	48.0	96	70-130
1,2-Dichloroethane	50	56.7	113	70-130
Trichloroethene (TCE)	50	47.6	95	70-130
1,2-Dichloropropane	50	47.3	95	70-130
Bromodichloromethane	50	46.8	94	70-130
2-Chloroethyl Vinyl Ether	50	62.6	125	70-130
2-Hexanone	50	60.8	122	70-130
trans-1,3-Dichloropropene	50	48.6	97	70-130
Toluene	50	47.9	96	70-130
cis-1,3-Dichloropropene	50	46.6	93	70-130
1,1,2-Trichloroethane	50	57.6	115	70-130
Tetrachloroethene (PCE)	50	53.6	107	70-130
Dibromochloromethane	50	51.5	103	70-130
Chlorobenzene	50	51.0	102	70-130
Ethylbenzene	50	48.4	97	70-130
o- Xylene	50	50.1	100	70-130
Styrene	50	48.3	97	70-130
Bromoform	50	49.1	98	70-130
1,1,2,2-Tetrachloroethane	50	49.6	99	70-130

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Arco Product Services	**Service Request:**	S9501441
Project:	0805-131.03/TO#317075/6002 Oakland	**Date Collected:**	11/13/95
Sample Matrix:	Water	**Date Received:**	11/15/95
		Date Extracted:	NA
		Date Analyzed:	11/21/95

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds
EPA Method 8240
Units: ug/L (ppb)

Sample Name: Batch QC Sample
Lab Code: S9501452-001

	Spike Level		Sample	Spike Result		Percent Recovery		CAS Acceptance	Relative Percent
Analyte	MS	DMS	**Result**	MS	DMS	MS	DMS	Limits	**Difference**
1,1-Dichloroethene	50	50	ND	53	52	106	104	61-145	2
Trichloroethene	50	50	ND	52	49	104	98	71-120	6
Chlorobenzene	50	50	ND	50	53	100	106	75-130	6
Toluene	50	50	ND	51	49	102	98	76-125	4
Benzene	50	50	ND	53	50	106	100	76-127	6

DMS1S/060194

ARCO Products Company
Division of AtlanticRichfieldCompany

Task Order No. 17075.00

Chain of Custody

ARCO Facility no. 6002	City (Facility) Oakland	Project manager (Consultant) John Young	Laboratory name CAS
ARCO engineer Mike Whelan	Telephone no. (ARCO)	Telephone no (Consultant) (408)453-7300	Fax no. (Consultant) (408)453-0452
Consultant name EMCON	Address (Consultant) 1921 Ringwood Ave, San Jose, CA 95131		Contract number

	Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX 8020/EPA 8020	BTEX/TPH EPA M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240 MTBE Only	EPA 625/8270	TCLP Metals ☐ Semi VOA ☐ VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐		
1	MW-6(31')		4		X		X	HCL	11/15/95	1055		X (1)											
2	MW-2(17')		2		X		X	HCL	11/13/95	1312		X											
3	MW-3(24')		2		X		X	HCL	11/13/95	1400		X											
4	MW-4(24')		2		X		X	HCL	11/13/95	1432		X											
5	MW-1(24')		4		X		X	HCL	11/13/95	1520		X					X						
6	MW-5(24')		2		X		X	HCL	11/15/95	1020		X											

Special detection Limit/reporting: Lowest Possible

Special QA/QC: As Normal

(1) ~~Analyze~~ MTBE ~~by 8020~~ for MW-6

2-40ml HCl VOAs All Wells except MW-1.

4-40ml HCl VOAs well MW-1

Analyze MW-1 for MTBE only by EPA 8240. Do not report any other compounds by EPA 8240.

Method of shipment: Sampler will deliver

Lab number: 5950144

Turnaround time

Priority Rush 1 Business Day	☐
Rush 2 Business Days	☐
Expedited 5 Business Days	☐
Standard 10 Business Days	☒

Condition of sample: Cool ok

Temperature received: Cool

Relinquished by sampler: Manuel S. Gallegos	Date: 11/15/95	Time: 1530	Received by:
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by laboratory: Joanne Brown

Date: 11-15-95 Time: 1530

Distribution: White copy — Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant

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