Pinnacle
ENVIRONMENTAL SOLUTIONS

a division of EMCON

August 3, 1998
Project 20805-127.006

#744 BO

Mr. Paul Supple
ARCO Products Company
P.O. Box 6549
Moraga, California 94570

Re: Quarterly Groundwater Monitoring Report, First Quarter 1998, for ARCO Service Station No. 2111, located at 1156 Davis Street. San Leandro, California

Dear Mr. Supple:

Pinnacle Environmental Solutions, a division of EMCON (Pinnacle), is submitting the attached report which presents the results of the first quarter 1998 groundwater monitoring program at ARCO Products Company (ARCO) service station No. 2111, located at 1156 Davis Street, San Leandro, California (see Figure 1). Pertinent site features, including existing monitoring and groundwater extraction wells, are shown in Figure 2. The monitoring program complies with Alameda County Health Care Services Agency (ACHCSA) requirements regarding underground tank investigations.

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, results should not be construed as a guarantee of the absence of such conditions at the site, but rather as the product of the scope and limitations of work performed during the monitoring event.

Please call if you have questions.

Sincerely,

Pinnacle

Glen VanderVeen
Project Manager

Jay R. Johnson, R.G.
Senior Project Manager

Attachment: Quarterly Groundwater Monitoring Report, First Quarter 1998

cc: Kevin Tinsley, ACHCSA
Mike Bakaldin, San Leandro Hazardous Materials Program

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August 3, 1998

ARCO QUARTERLY REPORT

Station No.: 2111	Address: 1156 Davis Street, San Leandro, California
Pinnacle Project No.	20805-127.006
ARCO Environmental Engineer/Phone No.:	Paul Supple /(510) 299-8891
Pinnacle Project Manager/Phone No.:	Glen VanderVeen /(510) 977-9020
Primary Agency/Regulatory ID No.:	ACHCSA /Kevin Tinsley Case No. STID 744

WORK PERFORMED THIS QUARTER (First - 1998):

1. Prepared and submitted quarterly groundwater monitoring report for fourth quarter 1997.
2. Performed quarterly groundwater monitoring and sampling for first quarter 1998.

WORK PROPOSED FOR NEXT QUARTER (Second - 1998):

1. Prepare and submit quarterly groundwater monitoring report for first quarter 1998.
2. Perform quarterly groundwater monitoring and sampling for second quarter 1998.

QUARTERLY MONITORING:

Current Phase of Project:	Quarterly Groundwater Monitoring
Frequency of Sampling:	Quarterly: MW-1 through MW-7
Frequency of Monitoring:	Quarterly (groundwater)
Is Floating Product (FP) Present On-site:	☐ Yes ☒ No
Bulk Soil Removed to Date :	Unknown
Bulk Soil Removed This Quarter :	None
Water Wells or Surface Waters, within 2000 ft., impacted by site:	None
Current Remediation Techniques:	None
Average Depth to Groundwater:	11.65 feet
Groundwater Gradient (Average):	0.013 ft/ft toward South-Southwest

ATTACHMENTS:

- Figure 1 - Groundwater Analytical Summary Map
- Figure 2 - Groundwater Elevation Contour Map
- Table 1 - Groundwater Monitoring Data, First Quarter 1998
- Table 2 - Historical Groundwater Elevation and Analytical Data, Petroleum Hydrocarbons and Their Constituents
- Appendix A - Certified Analytical Reports, Chain-of-Custody Documentation, and Field Data Sheets

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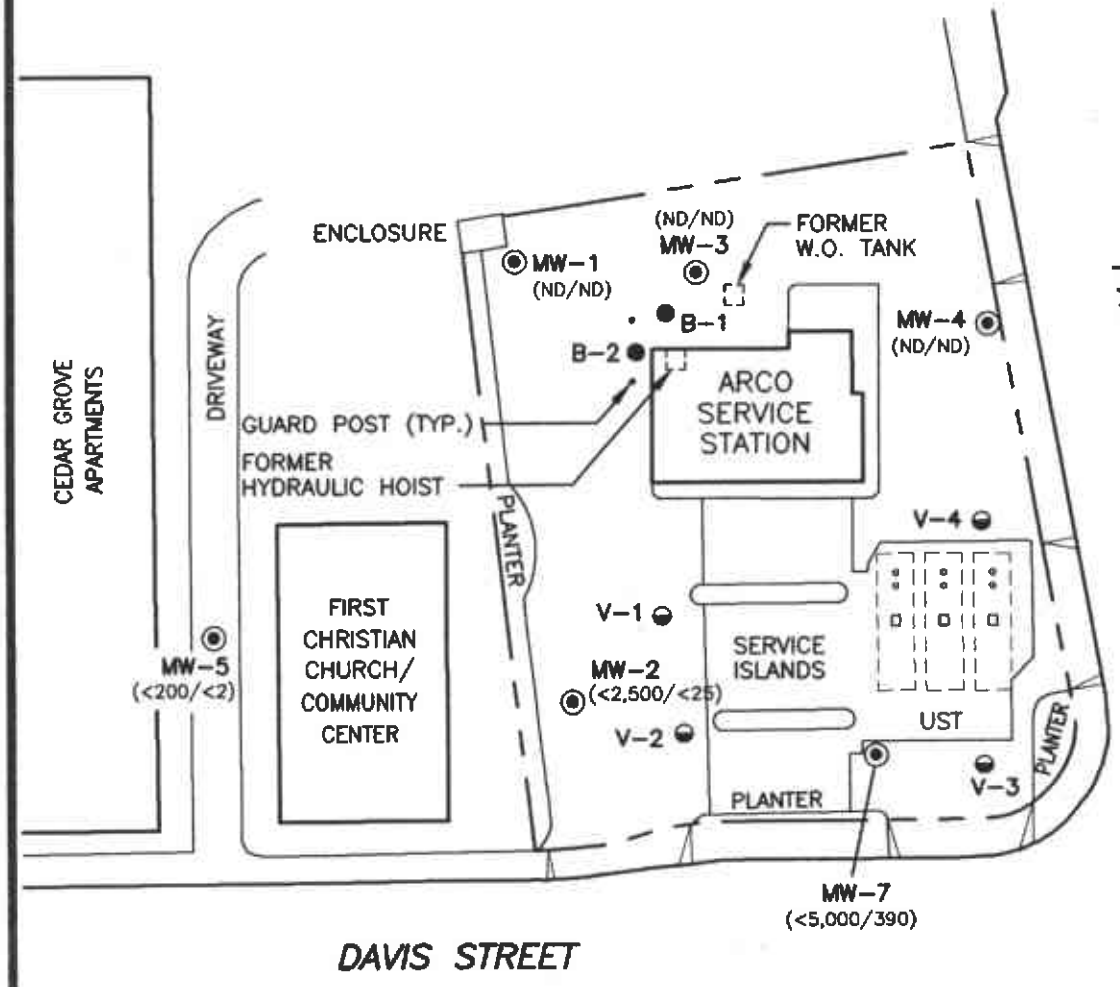

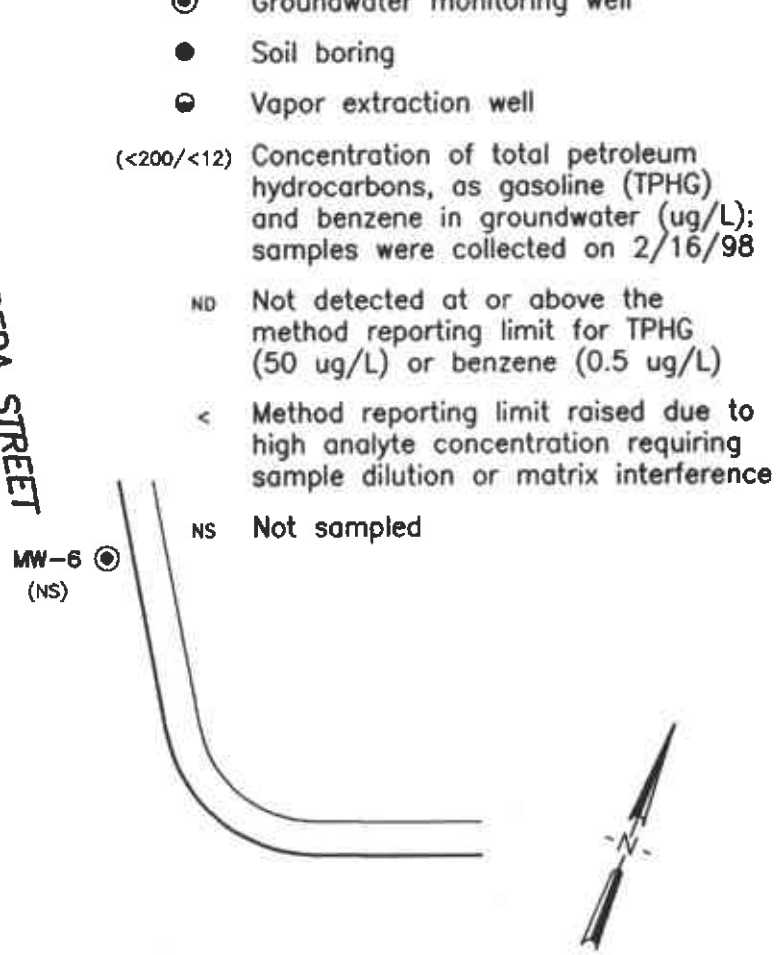

EXPLANATION

- Groundwater monitoring well
- Soil boring
- Vapor extraction well

(<200/<12) Concentration of total petroleum hydrocarbons, as gasoline (TPHG) and benzene in groundwater (ug/L); samples were collected on 2/16/98

ND Not detected at or above the method reporting limit for TPHG (50 ug/L) or benzene (0.5 ug/L)

< Method reporting limit raised due to high analyte concentration requiring sample dilution or matrix interference

NS Not sampled

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0 40 80
SCALE IN FEET

DATE JUNE 1998
DWN KAJ
APP
REV
PROJECT NO.
805-127.005

FIGURE 1
ARCO PRODUCTS COMPANY
SERVICE STATION 2111, 1156 DAVIS ST.
SAN LEANDRO, CALIFORNIA
GROUNDWATER ANALYTICAL SUMMARY
1ST QUARTER 1998

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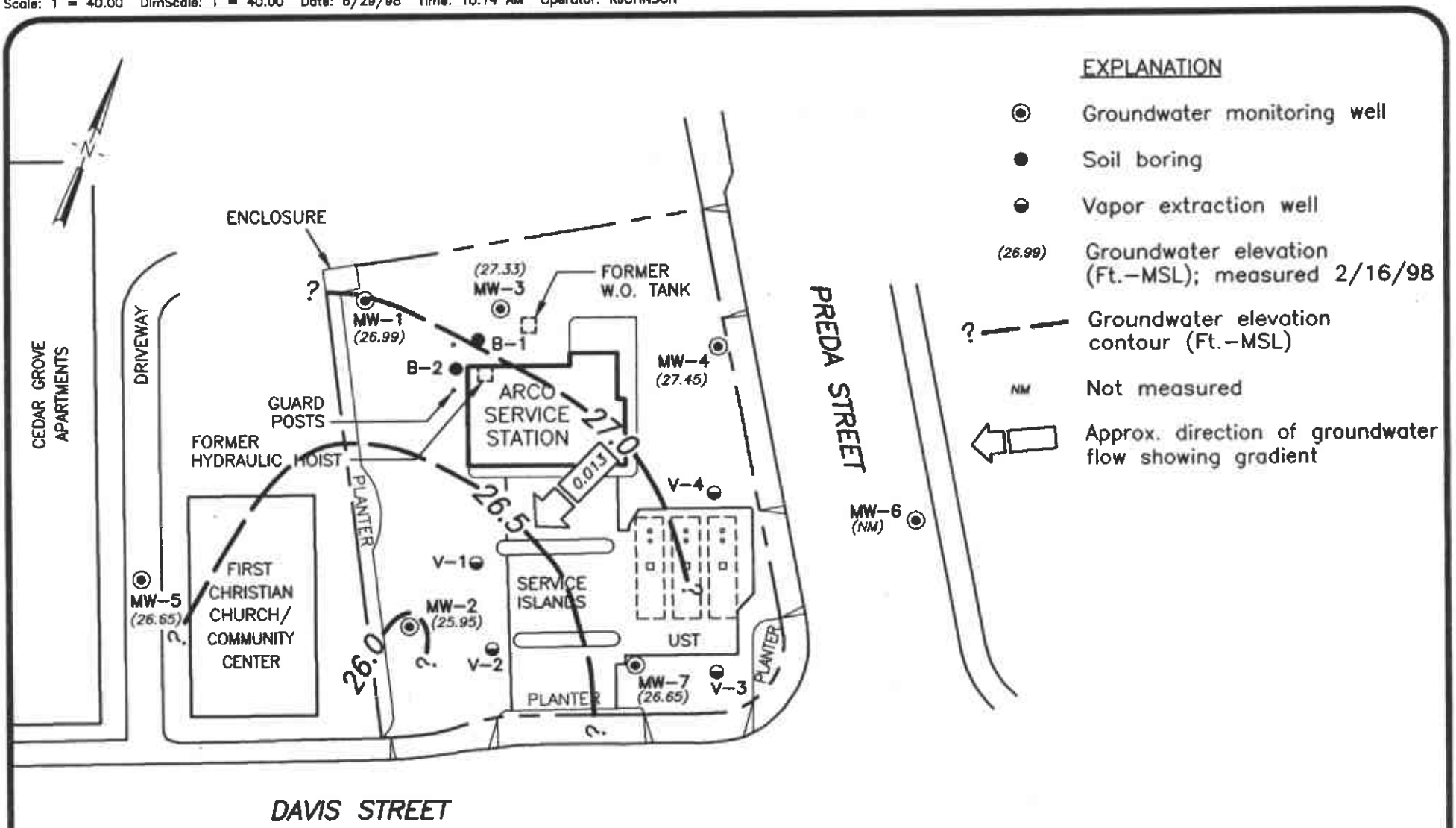

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0 40 80
SCALE IN FEET

DATE JUNE 1998
DWN KAJ
APP
REV
PROJECT NO.
805-127.005

FIGURE 2
ARCO PRODUCTS COMPANY
SERVICE STATION 2111, 1156 DAVIS ST.
SAN LEANDRO, CALIFORNIA
GROUNDWATER ELEVATION CONTOURS
1ST QUARTER 1998

Table 1
Groundwater Monitoring Data
First Quarter 1998

ARCO Service Station 2111
1156 Davis Street, San Leandro, California

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	TRPH EPA 418.1	TPHD LUFT Method
		ft-MSL	feet	ft-MSL	feet	MWN	ft/ft		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-1	02-16-98	39.60	12.61	26.99	ND	SSW	0.013	02-16-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-2	02-16-98	37.99	12.04	25.95	ND	SSW	0.013	02-16-98	<2500^	<25^	<25^	<25^	<25^	4200	--	--
MW-3	02-16-98	39.32	11.99	27.33	ND	SSW	0.013	02-16-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-4	02-16-98	38.10	10.65	27.45	ND	SSW	0.013	02-16-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-5	02-16-98	37.21	10.56	26.65	ND	SSW	0.013	02-16-98	<200^	<2^	<2^	<2^	<2^	230	--	--
MW-6	02-16-98	37.11	NR	NR	NR	SSW	0.013	02-16-98	not sampled: car parked on well							
MW-7	02-16-98	38.68	12.03	26.65	ND	SSW	0.013	02-16-98	<5000^	390	<50^	<50^	61	4300	--	--

ft-MSL: elevation in feet, relative to mean sea level
MWN: ground-water flow direction and gradient apply to the entire monitoring well network
ft/ft: foot per foot
TPHG: total petroleum hydrocarbons as gasoline, California DHS LUFT Method
µg/L: micrograms per liter
EPA: United States Environmental Protection Agency
MTBE: Methyl tert-butyl ether
TRPH: total recoverable petroleum hydrocarbons
TPHD: total petroleum hydrocarbons as diesel, California DHS LUFT Method
NR: not reported, data not available or not measurable
ND: none detected
SSW: South-Southwest
-- : not available or not analyzed
^: method reporting limit was raised due to: (1) high analyte concentration requiring sample dilution, or (2) matrix interference

Table 2
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents

ARCO Service Station 2111
1156 Davis Street, San Leandro, California

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	TRPH EPA 418.1	TPHD LUFT Method
		ft-MSL	feet	ft-MSL	feet	MWN	ft/ft		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-1	08-01-95	39.60	17.45	22.15	ND	NR	NR	08-01-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
MW-1	12-14-95	39.60	17.09	22.51	ND	W	0.002	12-14-95	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-1	03-21-96	39.60	14.72	24.88	ND	WSW	0.005	03-21-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-1	05-24-96	39.60	15.94	23.66	ND	W	0.003	05-24-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-1	08-09-96	39.60	17.89	21.71	ND	WNW	0.01	08-09-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-1	11-06-96	39.60	18.66	20.94	ND	WNW	0.007	11-06-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-1	03-24-97	39.60	16.13	23.47	ND	W	0.005	03-24-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-1	05-27-97	39.60	17.23	22.37	ND	NNW	0.006	05-28-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-1	08-07-97	39.60	18.68	20.92	ND	W	0.009	08-07-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-1	11-10-97	39.60	19.19	20.41	ND	W	0.002	11-10-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-1	02-16-98	39.60	12.61	26.99	ND	SSW	0.013	02-16-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-2	08-01-95	37.99	15.67	22.32	ND	NR	NR	08-01-95	23000	1300	310	500	3500	--	--	--
MW-2	12-14-95	37.99	15.36	22.63	ND	W	0.002	12-14-95	7300	900	25	180	1000	<200^	--	--
MW-2	03-21-96	37.99	12.84	25.15	ND	WSW	0.005	03-21-96	9600	850	30	280	1400	250	--	--
MW-2	05-24-96	37.99	14.03	23.96	ND	W	0.003	05-24-96	2300	300	<5^	73	310	<25^	--	--
MW-2	08-09-96	37.99	16.10	21.89	ND	WNW	0.01	08-09-96	2800	290	6	75	320	50	--	--
MW-2	11-06-96	37.99	16.98	21.01	ND	WNW	0.007	11-06-96	750	76	<1^	15	51	110	--	--
MW-2	03-24-97	37.99	14.22	23.77	ND	W	0.005	03-24-97	790	18	<1^	2	6	280	--	--
MW-2	05-27-97	37.99	15.42	22.57	ND	NNW	0.006	05-28-97	750	14	<1^	<1^	10	150	--	--
MW-2	08-07-97	37.99	16.92	21.07	ND	W	0.009	08-07-97	360	31	<2.5^	<2.5^	15	260	--	--
MW-2	11-10-97	37.99	17.52	20.47	ND	W	0.002	11-10-97	1300	82	<5^	14	49	550	--	--
MW-2	02-16-98	37.99	12.04	25.95	ND	SSW	0.013	02-16-98	<2500^	<25^	<25^	<25^	<25^	4200	--	--

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Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents

ARCO Service Station 2111
1156 Davis Street, San Leandro, California

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	TRPH EPA 418.1	TPHD LUFT Method
		ft-MSL	feet	ft-MSL	feet	MWN	ft/ft		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-3	08-01-95	39.32	17.00	22.32	ND	NR	NR	08-01-95	<50	<0.5	<0.5	<0.5	<0.5	--	600	76*
MW-3	12-14-95	39.32	16.70	22.62	ND	W	0.002	12-14-95	<50	<0.5	<0.5	<0.5	<0.5	<3	<500	<50
MW-3	03-21-96	39.32	14.17	25.15	ND	WSW	0.005	03-21-96	<50	<0.5	<0.5	<0.5	<0.5	<3	<500	<50
MW-3	05-24-96	39.32	15.30	24.02	ND	W	0.003	05-24-96	<50	<0.5	<0.5	<0.5	<0.5	<3	<500	<50
MW-3	08-09-96	39.32	17.58	21.74	ND	WNW	0.01	08-09-96	<50	<0.5	<0.5	<0.5	<0.5	<3	<500	--
MW-3	11-06-96	39.32	18.33	20.99	ND	WNW	0.007	11-06-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-3	03-24-97	39.32	15.44	23.88	ND	W	0.005	03-24-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-3	05-27-97	39.32	16.75	22.57	ND	NNW	0.006	05-28-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-3	08-07-97	39.32	18.35	20.97	ND	W	0.009	08-07-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-3	11-10-97	39.32	18.83	20.49	ND	W	0.002	11-10-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-3	02-16-98	39.32	11.99	27.33	ND	SSW	0.013	02-16-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-4	08-01-95	38.10	15.65	22.45	ND	NR	NR	08-01-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
MW-4	12-14-95	38.10	15.35	22.75	ND	W	0.002	12-14-95	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-4	03-21-96	38.10	12.74	25.36	ND	WSW	0.005	03-21-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-4	05-24-96	38.10	14.03	24.07	ND	W	0.003	05-24-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-4	08-09-96	38.10	16.10	22.00	ND	WNW	0.01	08-09-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-4	11-06-96	38.10	17.00	21.10	ND	WNW	0.007	11-06-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-4	03-24-97	38.10	14.21	23.89	ND	W	0.005	03-24-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-4	05-27-97	38.10	15.38	22.72	ND	NNW	0.006	05-28-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-4	08-07-97	38.10	16.95	21.15	ND	W	0.009	08-07-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-4	11-10-97	38.10	17.53	20.57	ND	W	0.002	11-10-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-4	02-16-98	38.10	10.65	27.45	ND	SSW	0.013	02-16-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--

Table 2
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents

ARCO Service Station 2111
1156 Davis Street, San Leandro, California

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	TRPH EPA 418.1	TPHD LUFT Method
		ft-MSL	feet	ft-MSL	feet	MWN	ft/ft		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-5	03-21-96	37.21	12.60	24.61	ND	WSW	0.005	03-22-96	<50	<0.5	<0.5	<0.5	<0.5	82	--	--
MW-5	05-24-96	37.21	13.71	23.50	ND	W	0.003	05-24-96	<50	<0.5	<0.5	<0.5	<0.5	7	--	--
MW-5	08-09-96	37.21	15.60	21.61	ND	WNW	0.01	08-09-96	<50	<0.5	<0.5	<0.5	<0.5	8	--	--
MW-5	11-06-96	37.21	16.36	20.85	ND	WNW	0.007	11-06-96	<50	<0.5	<0.5	<0.5	<0.5	100	--	--
MW-5	03-24-97	37.21	13.87	23.34	ND	W	0.005	03-24-97	<50	<0.5	<0.5	<0.5	<0.5	460	--	--
MW-5	05-27-97	37.21	14.71	22.50	ND	NNW	0.006	05-28-97	<100^	<1^	<1^	<1^	<1^	120	--	--
MW-5	08-07-97	37.21	16.90	20.31	ND	W	0.009	08-07-97	<250^	<2.5^	<2.5^	<2.5^	<2.5^	250	--	--
MW-5	11-10-97	37.21	16.88	20.33	ND	W	0.002	11-10-97	<1000^	<10^	<10^	<10^	<10^	770	--	--
MW-5	02-16-98	37.21	10.56	26.65	ND	SSW	0.013	02-16-98	<200^	<2^	<2^	<2^	<2^	230	--	--
MW-6	03-21-96	37.11	11.55	25.56	ND	WSW	0.005	03-22-96	<50	<0.5	1.9	<0.5	<0.5	<3	--	--
MW-6	05-24-96	37.11	12.80	24.31	ND	W	0.003	05-24-96	<50	<0.5	<0.5	<0.5	<0.5	6	--	--
MW-6	08-09-96	37.11	Not surveyed: Car parked on well			NR	NR	08-09-96	Not sampled: Car parked on well							
MW-6	11-06-96	37.11	Not surveyed: Car parked on well			NR	NR	11-06-96	Not surveyed: Car parked on well							
MW-6	03-24-97	37.11	13.06	24.05	ND	W	0.005	03-24-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-6	05-27-97	37.11	14.30	22.81	ND	NNW	0.006	05-28-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-6	08-07-97	37.11	16.40	20.71	ND	W	0.009	08-07-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-6	11-10-97	37.11	16.53	20.58	ND	W	0.002	11-10-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
MW-6	02-16-98	37.11	NR	NR	NR	SSW	0.013	02-16-98	not sampled: car parked on well							
MW-7	03-21-96	38.68	13.32	25.36	ND	WSW	0.005	03-22-96	32000	870	450	970	4900	280	--	--
MW-7	05-24-96	38.68	14.58	24.10	ND	W	0.003	05-24-96	22000	570	40	42	1900	<200*	--	--
MW-7	08-09-96	38.68	15.33	23.35	ND	WNW	0.01	08-09-96	14000	390	<10^	180	470	<200*	--	--
MW-7	11-06-96	38.68	16.95	21.73	ND	WNW	0.007	11-06-96	9500	440	<10^	210	150	<100*	--	--
MW-7	03-24-97	38.68	14.65	24.03	ND	W	0.005	03-24-97	6400	420	<10^	260	13	480	--	--
MW-7	05-27-97	38.68	15.58	23.10	ND	NNW	0.006	05-28-97	5000	420	<5^	230	10	460	--	--
MW-7	08-07-97	38.68	17.10	21.58	ND	W	0.009	08-07-97	3900	350	<5^	200	10	330	--	--
MW-7	11-10-97	38.68	18.05	20.63	ND	W	0.002	11-10-97	5600	590	10	370	43	540	--	--
MW-7	02-16-98	38.68	12.03	26.65	ND	SSW	0.013	02-16-98	<5000^	390	<50^	<50^	61	4300	--	--

Table 2
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents

ARCO Service Station 2111
1156 Davis Street, San Leandro, California

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	TRPH EPA 418.1	TPHD LUFT Method
		ft-MSL	feet	ft-MSL	feet	MWN	ft/ft		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L

ft-MSL: elevation in feet, relative to mean sea level
MWN: ground-water flow direction and gradient apply to the entire monitoring well network
ft/ft: foot per foot
TPHG: total petroleum hydrocarbons as gasoline, California DHS LUFT Method
µg/L: micrograms per liter
EPA: United States Environmental Protection Agency
MTBE: Methyl tert-butyl ether
TRPH: total recoverable petroleum hydrocarbons
TPHD: total petroleum hydrocarbons as diesel, California DHS LUFT Method
NR: not reported; data not available or not measurable
ND: none detected
NNE: North-Northeast
*: chromatogram fingerprint is not characteristic of diesel
^: method reporting limit was raised due to: (1) high analyte concentration requiring sample dilution, or (2) matrix interference
- -: not available or not analyzed

APPENDIX A

CERTIFIED ANALYTICAL REPORTS, CHAIN-OF-CUSTODY DOCUMENTATION, AND FIELD DATA SHEETS

Columbia Analytical Services inc.

March 5, 1998 Service Request No.: S9800341

Gary Messerotes
EMCON
1921 Ringwood Avenue
San Jose, CA 95131

RE: 20805-127.003/TO#21133.00/2111 SAN LEANDRO

Dear Mr. Messerotes:

The following pages contain analytical results for sample(s) received by the laboratory on February 19, 1998. 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 8, 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

Cristina V. Rayline for

Greg Anderson
Regional QA Coordinator

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)

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	ARCO Products Company	**Service Request:**	9800341
Project:	20805-127.003/TO#21133.00/2111 SAN LEANDRO	**Date Collected:**	2/16/98
Sample Matrix:	Water	**Date Received:**	2/19/98

BTEX, MTBE and TPH as Gasoline

Sample Name:	MW-5(12)	Units:	ug/L (ppb)
Lab Code:	S9800341-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	4	NA	2/20/98	<200	C1
Benzene	EPA 5030	8020	0.5	4	NA	2/20/98	<2	C1
Toluene	EPA 5030	8020	0.5	4	NA	2/20/98	<2	C1
Ethylbenzene	EPA 5030	8020	0.5	4	NA	2/20/98	<2	C1
Xylenes, Total	EPA 5030	8020	0.5	4	NA	2/20/98	<2	C1
Methyl *tert*-Butyl Ether	EPA 5030	8020	3	4	NA	2/20/98	230	

C1 The MRL was elevated due to high analyte concentration requiring sample dilution.

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	ARCO Products Company	**Service Request:**	S9800341
Project:	20805-127.003/TO#21133.00/2111 SAN LEANDRO	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

BTEX, MTBE and TPH as Gasoline

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	S980220-WB1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	1	NA	2/20/98	ND	
Benzene	EPA 5030	8020	0.5	1	NA	2/20/98	ND	
Toluene	EPA 5030	8020	0.5	1	NA	2/20/98	ND	
Ethylbenzene	EPA 5030	8020	0.5	1	NA	2/20/98	ND	
Xylenes, Total	EPA 5030	8020	0.5	1	NA	2/20/98	ND	
Methyl *tert*-Butyl Ether	EPA 5030	8020	3	1	NA	2/20/98	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	ARCO Products Company	**Service Request:**	S9800341
Project:	20805-127.003/TO#21133.00/2111 SAN LEANDRO	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Extracted:	NA
		Date Analyzed:	NA

Surrogate Recovery Summary
BTEX, MTBE and TPH as Gasoline

Prep Method:	EPA 5030	Units:	PERCENT
Analysis Method:	8020 CA/LUFT	Basis:	NA

Sample Name	Lab Code	Test Notes	Percent Recovery 4-Bromofluorobenzene	Percent Recovery a,a,a-Trifluorotoluene
MW-5(12)	S9800341-001		102	78
BATCH QC	S9800339-001MS		98	86
BATCH QC	S9800339-001DMS		98	87
Method Blank	S980220-WB1		96	84
CAS Acceptance Limits:			69-116	69-116

SUR2/020397p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	ARCO Products Company	**Service Request:**	S9800341
Project:	20805-127.003/TO#21133.00/2111 SAN LEANDRO	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Extracted:	NA
		Date Analyzed:	2/21/98

Matrix Spike/Duplicate Matrix Spike Summary
BTE

Sample Name:	BATCH QC	Units:	ug/L (ppb)
Lab Code:	S9800339-001MS, S9800339-001DMS	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	CAS Acceptance Limits	Relative Percent Difference
Benzene	EPA 5030	8020	0.5	25	25	ND	25	26	100	104	75-135	4
Toluene	EPA 5030	8020	0.5	25	25	ND	27	27	108	108	73-136	<1
Ethylbenzene	EPA 5030	8020	0.5	25	25	ND	26	27	104	108	69-142	4

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	ARCO Products Company	**Service Request:**	9980034I
Project:	20805-127.003/TO#21133.00/2111 SAN LEANDRO	**Date Analyzed:**	2/20/98

Initial Calibration Verification (ICV) Summary
BTEX, MTBE and TPH as Gasoline

Sample Name:	ICV	Units:	ug/L (ppb)
Lab Code:	ICV1	Basis:	NA
Test Notes:			

ICV Source:

Analyte	Prep Method	Analysis Method	True Value	Result	CAS Percent Recovery Acceptance Limits	Percent Recovery	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	250	240	90-110	96	
Benzene	EPA 5030	8020	25	26	85-115	104	
Toluene	EPA 5030	8020	25	27	85-115	108	
Ethylbenzene	EPA 5030	8020	25	26	85-115	104	
Xylenes, Total	EPA 5030	8020	75	78	85-115	104	
Methyl *tert*-Butyl Ether	EPA 5030	8020	25	23	85-115	92	

ICV/032196

IPHVCM FC F

ARCO Products Company

Division of Atlantic/Richfield Company

Task Order No. 71133.00

Chain of Custody

ARCO Facility no. 2111	City (Facility) San Leandro	Project manager (Consultant) Gary Messerotes	Laboratory Name CAS
ARCO engineer Paul Supple	Telephone no. (ARCO)	Telephone no (Consultant) (408) 453-7300	Fax no. (Consultant) (408) 453-0457
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 602/EPA 8020	BTEX/TPH incl. MTBE EPA M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM 503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Semi Metals ☐ VOA ☐ VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org/DHS ☐ Lead EPA 7420/7421 ☐			
MW-5(12)	1	1		X		X	HCl	2-16-98	1325		X												

Method of shipment: Sampler will deliver

Special Detection Limit/reporting: Lowest Possible

Special QA/QC: As Normal

Remarks: 2-40ml HCl VOAs

#70805-127.005

Lab Number: S9800341

Turnaround Time:

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

DUE 3/4/98

Condition of sample:		Temperature received:	
Relinquished by sampler	Date 2-19-98 Time 10:10	Received by	
Relinquished by	Date Time	Received by	
Relinquished by	Date Time	Received by laboratory	Date 2/19/98 Time 1015

Distribution: White Copy – Laboratory: Canary Copy – ARCO Environmental Engineering: Pink Copy – Consultant

R11/03

Columbia Analytical Services, Inc.

March 5, 1998 Service Request No.: S9800342

Gary Messerotes
EMCON
1921 Ringwood Avenue
San Jose, CA 95131

RE: 20805-127.003/TO#21133.00/2111 SAN LEANDRO

Dear Mr. Messerotes:

The following pages contain analytical results for sample(s) received by the laboratory on February 19, 1998. 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 14, 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

Greg Anderson
Regional QA Coordinator

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)

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	ARCO Products Company	**Service Request:**	S9800342
Project:	20805-127.003/TO#21133.00/2111 SAN LEANDRO	**Date Collected:**	2/16/98
Sample Matrix:	Water	**Date Received:**	2/19/98

BTEX, MTBE and TPH as Gasoline

Sample Name:	MW-1(13)	Units:	ug/L (ppb)
Lab Code:	S9800342-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	1	NA	2/19/98	ND	
Benzene	EPA 5030	8020	0.5	1	NA	2/19/98	ND	
Toluene	EPA 5030	8020	0.5	1	NA	2/19/98	ND	
Ethylbenzene	EPA 5030	8020	0.5	1	NA	2/19/98	ND	
Xylenes, Total	EPA 5030	8020	0.5	1	NA	2/19/98	ND	
Methyl *tert*-Butyl Ether	EPA 5030	8020	3	1	NA	2/19/98	ND	

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	ARCO Products Company	**Service Request:**	S9800342
Project:	20805-127.003/TO#21133.00/2111 SAN LEANDRO	**Date Collected:**	2/16/98
Sample Matrix:	Water	**Date Received:**	2/19/98

BTEX, MTBE and TPH as Gasoline

Sample Name:	MW-4(12)	**Units:**	ug/L (ppb)
Lab Code:	S9800342-002	**Basis:**	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	1	NA	2/19/98	ND	
Benzene	EPA 5030	8020	0.5	1	NA	2/19/98	ND	
Toluene	EPA 5030	8020	0.5	1	NA	2/19/98	ND	
Ethylbenzene	EPA 5030	8020	0.5	1	NA	2/19/98	ND	
Xylenes, Total	EPA 5030	8020	0.5	1	NA	2/19/98	ND	
Methyl *tert*-Butyl Ether	EPA 5030	8020	3	1	NA	2/19/98	ND	

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	ARCO Products Company	**Service Request:**	S9800342
Project:	20805-127.003/TO#21133.00/2111 SAN LEANDRO	**Date Collected:**	2/16/98
Sample Matrix:	Water	**Date Received:**	2/19/98

BTEX, MTBE and TPH as Gasoline

Sample Name:	MW-3(13)	**Units:**	ug/L (ppb)
Lab Code:	S9800342-003	**Basis:**	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	1	NA	2/19/98	ND	
Benzene	EPA 5030	8020	0.5	1	NA	2/19/98	ND	
Toluene	EPA 5030	8020	0.5	1	NA	2/19/98	ND	
Ethylbenzene	EPA 5030	8020	0.5	1	NA	2/19/98	ND	
Xylenes, Total	EPA 5030	8020	0.5	1	NA	2/19/98	ND	
Methyl *tert*-Butyl Ether	EPA 5030	8020	3	1	NA	2/19/98	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	ARCO Products Company	**Service Request:**	S9800342
Project:	20805-127.003/TO#21133.00/2111 SAN LEANDRO	**Date Collected:**	2/16/98
Sample Matrix:	Water	**Date Received:**	2/19/98

BTEX, MTBE and TPH as Gasoline

Sample Name:	MW-2(13)	**Units:**	ug/L (ppb)
Lab Code:	S9800342-004	**Basis:**	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	50	NA	2/21/98	<2500	C1
Benzene	EPA 5030	8020	0.5	50	NA	2/21/98	<25	C1
Toluene	EPA 5030	8020	0.5	50	NA	2/21/98	<25	C1
Ethylbenzene	EPA 5030	8020	0.5	50	NA	2/21/98	<25	C1
Xylenes, Total	EPA 5030	8020	0.5	50	NA	2/21/98	<25	C1
Methyl *tert*-Butyl Ether	EPA 5030	8020	3	50	NA	2/21/98	4200	

C1 The MRL was elevated due to high analyte concentration requiring sample dilution.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	ARCO Products Company	**Service Request:**	S9800342
Project:	20805-127.003/TO#21133.00/2111 SAN LEANDRO	**Date Collected:**	2/16/98
Sample Matrix:	Water	**Date Received:**	2/19/98

BTEX, MTBE and TPH as Gasoline

Sample Name:	MW-7(13)	Units:	ug/L (ppb)
Lab Code:	S9800342-005	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	100	NA	2/21/98	<5000	C1
Benzene	EPA 5030	8020	0.5	100	NA	2/21/98	390	
Toluene	EPA 5030	8020	0.5	100	NA	2/21/98	<50	C1
Ethylbenzene	EPA 5030	8020	0.5	100	NA	2/21/98	<50	C1
Xylenes, Total	EPA 5030	8020	0.5	100	NA	2/21/98	61	
Methyl *tert*-Butyl Ether	EPA 5030	8020	3	100	NA	2/21/98	4300	

C1 The MRL was elevated due to high analyte concentration requiring sample dilution.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	ARCO Products Company	**Service Request:**	S9800342
Project:	20805-127.003/TO#21133.00/2111 SAN LEANDRO	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

BTEX, MTBE and TPH as Gasoline

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	S980219-WB1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	1	NA	2/19/98	ND	
Benzene	EPA 5030	8020	0.5	1	NA	2/19/98	ND	
Toluene	EPA 5030	8020	0.5	1	NA	2/19/98	ND	
Ethylbenzene	EPA 5030	8020	0.5	1	NA	2/19/98	ND	
Xylenes, Total	EPA 5030	8020	0.5	1	NA	2/19/98	ND	
Methyl *tert*-Butyl Ether	EPA 5030	8020	3	1	NA	2/19/98	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	ARCO Products Company	**Service Request:**	S9800342
Project:	20805-127.003/TO#21133.00/2111 SAN LEANDRO	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

BTEX, MTBE and TPH as Gasoline

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	S980220-WB1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	1	NA	2/20/98	ND	
Benzene	EPA 5030	8020	0.5	1	NA	2/20/98	ND	
Toluene	EPA 5030	8020	0.5	1	NA	2/20/98	ND	
Ethylbenzene	EPA 5030	8020	0.5	1	NA	2/20/98	ND	
Xylenes, Total	EPA 5030	8020	0.5	1	NA	2/20/98	ND	
Methyl *tert*-Butyl Ether	EPA 5030	8020	3	1	NA	2/20/98	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	ARCO Products Company	**Service Request:**	S9800342
Project:	20805-127.003/TO#21133.00/2111 SAN LEANDRO	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

BTEX, MTBE and TPH as Gasoline

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	S980221-WB1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	1	NA	2/21/98	ND	
Benzene	EPA 5030	8020	0.5	1	NA	2/21/98	ND	
Toluene	EPA 5030	8020	0.5	1	NA	2/21/98	ND	
Ethylbenzene	EPA 5030	8020	0.5	1	NA	2/21/98	ND	
Xylenes, Total	EPA 5030	8020	0.5	1	NA	2/21/98	ND	
Methyl *tert*-Butyl Ether	EPA 5030	8020	3	1	NA	2/21/98	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 20805-127.003/TO#21133.00/2111 SAN LEANDRO
Sample Matrix: Water

Service Request: S9800342
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: NA

Surrogate Recovery Summary
BTEX, MTBE and TPH as Gasoline

Prep Method: EPA 5030
Analysis Method: 8020 CA/LUFT

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery 4-Bromofluorobenzene	Percent Recovery a,a,a-Trifluorotoluene
MW-1(13)	S9800342-001		90	86
MW-4(12)	S9800342-002		93	87
MW-3(13)	S9800342-003		97	91
MW-2(13)	S9800342-004		96	82
MW-7(13)	S9800342-005		96	84
BATCH QC	S9800344-004MS		98	86
BATCH QC	S9800344-004DMS		100	90
Method Blank	S980219-WB1		97	87
Method Blank	S980220-WB1		96	84
Method Blank	S980221-WB1		96	85
CAS Acceptance Limits:			69-116	69-116

SUR2/020397p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	ARCO Products Company	**Service Request:**	S9800342
Project:	20805-127.003/TO#21133.00/2111 SAN LEANDRO	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Extracted:	NA
		Date Analyzed:	2/20/98

Matrix Spike/Duplicate Matrix Spike Summary
BTE

Sample Name:	BATCH QC	**Units:**	ug/L (ppb)
Lab Code:	S9800344-004MS, S9800344-004DMS	**Basis:**	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	CAS Acceptance Limits	Relative Percent Difference
Benzene	EPA 5030	8020	0.5	25	25	ND	26	25	104	100	75-135	4
Toluene	EPA 5030	8020	0.5	25	25	ND	26	25	104	100	73-136	4
Ethylbenzene	EPA 5030	8020	0.5	25	25	ND	26	26	104	104	69-142	<1

DMS/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 20805-127.003/TO#21133.00/2111 SAN LEANDRO

Service Request: S9800342
Date Analyzed: 2/19/98

Initial Calibration Verification (ICV) Summary
BTEX, MTBE and TPH as Gasoline

Sample Name: ICV
Lab Code: ICV1
Test Notes:

Units: ug/L (ppb)
Basis: NA

ICV Source:

Analyte	Prep Method	Analysis Method	True Value	Result	CAS Percent Recovery Acceptance Limits	Percent Recovery	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	250	250	90-110	100	
Benzene	EPA 5030	8020	25	26	85-115	104	
Toluene	EPA 5030	8020	25	26	85-115	104	
Ethylbenzene	EPA 5030	8020	25	27	85-115	108	
Xylenes, Total	EPA 5030	8020	75	81	85-115	108	
Methyl *tert*-Butyl Ether	EPA 5030	8020	25	24	85-115	96	

ICV/032196

ARCO Products Company
Division of Atlantic/Richfield Company

Task Order No. 71133.00

Chain of Custody

ARCO Facility no. 2111 | City (Facility) San Leandro | Project manager (Consultant) Gary Messerotes | Laboratory Name CAS

ARCO engineer Paul Supple | Telephone no. (ARCO) | Telephone no. (Consultant) (408) 453-7300 | Fax no. (Consultant) (408) 453-0452 | Contract Number

Consultant name EMCON | Address (Consultant) 1921 Ringwood Ave, San Jose, CA 95131

Method of shipment: Sampler will deliver

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH gas/MTBE EPA M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM 503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Semi Metals ☐ VOA ☐ VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org/DHS ☐ Lead EPA 7420/7421 ☐			
MW-1(3)	1	2		X		X	HCl	2-16-98	12:40		X												
MW-4(2)	2	2		X		X	HCl		12:55		X												
MW-3(3)	3	2		X		X	HCl		13:10		X												
MW-6( )	4	2		X		X	HCL				X		NO	SAMPLE	Collected								
MW-5( )		2		X		X	HCL				X												
MW-7(3)	584	2		X		X	HCL		13:40		X												
MW-7(3)	657	2		X		X	HCl	↓	14:00		X												
		2/19/98																					

Special Detection Limit/reporting: Lowest Possible

Special QA/QC: As Normal

Remarks: 2-40ml HCL VOAs

#20805-127.005

Lab Number: 59800342

Turnaround Time:
- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐
- Expedited 5 Business Days ☐
- Standard 10 Business Days ☒

DUE 3/4/98

Condition of sample:		Temperature received:	
Relinquished by sampler	Date 2-19-98 Time 10:10	Received by	
Relinquished by	Date Time	Received by	
Relinquished by	Date Time	Received by laboratory Ray Lowder CAS	Date 2/19/98 Time 1015

Distribution: White Copy – Laboratory: Canary Copy – ARCO Environmental Engineering: Pink Copy – Consultant

K11/D3

EMCON - Groundwater Sampling and Analysis Request Form

PROJECT NAME : **ARCO 2111**
1156 Davis Street, San Leandro

Sampling Project #: **21775-226.003**
Reporting Project #: **20805-127.005**

DATE REQUESTED : **15-Feb-98**

Project Manager: **Gary Messerotes**

Groundwater Monitoring Instructions	Treatment System Instructions
Quarterly Monitoring- 2nd Month Of The Quarter Bring a trailer for purge water transport. Perform a water level survey prior to sampling.(See ARCO SOP) The survey points are the tops of the well casings. Purge three (3) casing volumes. Please sample MW-5 between 11:00 and 2:00. MW-3 is located directly in front of the auto shop and should be sampled during slow business hours.(Check with onsite manager) Please use the reporting project number **(#20805-127.005)** on the chain-of-custody form, sample containers, and analytical results. Sample ID's on the chain-of-custody and the sample containers must include the depth at which the sample was collected [i.e. MW-1(30)]	No treatment system at this site. **Lisle Rath Pager# (888) 888-0933**

Site Contact: _____ Site Phone: _____ Well Locks: **3490**

Well ID or Source	Casing Diameter (inches)	Casing Length (feet)	Top Of Screen (feet)	Analyses Requested
MW-1	4.0	27.0	12.5	
MW-4	4.0	24.8	10.0	
MW-3	4.0	26.8	11.9	**Water Levels** **Dissolved Oxygen** **TPH-Gasoline** **BTEX** **MTBE by EPA 8020** (Fill 2- 40ml HCL VOAs)
MW-6	2.0	25.0	10.0	
Above wells in any order				
MW-5	2.0	24.0	9.4	<separate CAR & COC
MW-2	4.0	26.8	12.0	
MW-7	4.0	27.0	12.0	
Above wells in indicated order				

Laboratory Instructions:
Separate COC and CAR for MW-5
Provide lowest detection limits possible.
Please use the Reporting Project Number **(#20805-127.005)** on the chain of custody form, sample containers, and analytical results.

ND = None Detected IP = Intermitent Product

FIELD REPORT
DEPTH TO WATER / FLOATING PRODUCT SURVEY

PROJECT # : **21775-226.003** STATION ADDRESS : **1156 Davis Street, San Leandro** DATE : **2/15/98**

ARCO STATION # : **2111** FIELD TECHNICIAN : **Chris Chaco** DAY : **Monday**

DTW Order	WELL ID	Well Box Seal	Well Lid Secure	Gasket Present	Lock Number	Type Of 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-1**	OK	Y	Y	**3490**	LWC	12.61	12.61	ND	ND	26.3	
2	**MW-4**	OK	Y	Y	**3490**	LWC	10.65	10.65	ND	ND	21.7	
3	**MW-3**	OK	Y	Y	**3490**	LWC	11.99	11.99	ND	ND	26.7	
4	**MW-6**				**3490**	~~LWC~~	NA		~~ND~~		NA	Car parked on well
5	**MW-5**	OK	Y	Y	**3616**	LWC	10.56	1056	ND	ND	23.9	
6	**MW-2**	OK	Y	Y	**3490**	LWC	12.04	12:04	ND	NA	26.7	
7	**MW-7**	OK	Y	Y	**Dolphin**	LWC	12.03	12.03	ND	ND		**Please replace lock w/ 3490**

SURVEY POINTS ARE TOP OF WELL CASINGS

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 21775-226.003 SAMPLE ID: MW-1 (13')

PURGED BY: C. Chaco CLIENT NAME: ARCO

SAMPLED BY: C. Chaco LOCATION: San Leandro

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

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

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

DEPTH TO WATER (feet): 12.61 CALCULATED PURGE (gal.): NA

DEPTH OF WELL (feet): 26.3 ACTUAL PURGE VOL. (gal.): NA

DATE PURGED: — Start (2400 Hr) — End (2400 Hr) —

DATE SAMPLED: 2-16-98 Start (2400 Hr) 12:40 End (2400 Hr) —

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
12:40	Grab	6.90	745.9	61.0	clr	✓

D. O. (ppm): 0-1 ODOR: None — —

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

Field QC samples collected at this well: ___

Parameters field filtered at this well: ___

PURGING EQUIPMENT

___ 2" Bladder Pump ___ Bailer (Teflon®)

___ Centrifugal Pump NA ___ Bailer (PVC)

___ Submersible Pump ___ Bailer (Stainless Steel)

___ Well Wizard™ ___ Dedicated

Other: ___

SAMPLING EQUIPMENT

___ 2" Bladder Pump ✓ Bailer (Teflon®)

___ DDL Sampler ___ Bailer (Stainless Steel)

___ Dipper ___ Submersible Pump

___ Well Wizard™ ___ Dedicated

Other: ___

WELL INTEGRITY: Good LOCK #: 3450

REMARKS: ___

Meter Calibration: Date: 2-16-98 Time: ___ Meter Serial #: 86C Temperature °F: ___

(EC 1000 1008 / ___) (DI ___) (pH 7 7.0 / ___) (pH 10 1004 / ___) (pH 4 4.13 / ___)

Location of previous calibration: ___

Signature: [signature] Reviewed By: [signature] Page 1 of 7

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 21775-226.003 SAMPLE ID: MW-2 (13)

PURGED BY: C. CHACO CLIENT NAME: ARCO 2111

SAMPLED BY: C. CHACO LOCATION: SAN LEANDRO

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

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

CASING ELEVATION (feet/MSL): — VOLUME IN CASING (gal.): ___

DEPTH TO WATER (feet): 12.04 CALCULATED PURGE (gal.): NP

DEPTH OF WELL (feet): 26.7 ACTUAL PURGE VOL. (gal.): ___

DATE PURGED: — Start (2400 Hr) — End (2400 Hr) —

DATE SAMPLED: 2-16-98 Start (2400 Hr) 13:40 End (2400 Hr) —

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
13:40	Grab	6.71	793.7	61.5	clr	0

D. O. (ppm): 0-1 ODOR: slight — —

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

Field QC samples collected at this well: —

Parameters field filtered at this well: —

PURGING EQUIPMENT

___ 2" Bladder Pump ___ Bailer (Teflon®)

___ Centrifugal Pump N/A ___ Bailer (PVC)

___ Submersible Pump ___ Bailer (Stainless Steel)

___ Well Wizard™ ___ Dedicated

Other: ___

SAMPLING EQUIPMENT

___ 2" Bladder Pump ✓ Bailer (Teflon®)

___ DDL Sampler ___ Bailer (Stainless Steel)

___ Dipper ___ Submersible Pump

___ Well Wizard™ ___ Dedicated

Other: ___

WELL INTEGRITY: Good LOCK #: 3490

REMARKS: ___

Meter Calibration: Date: ___ Time: ___ Meter Serial #: ___ Temperature °F: ___

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

Location of previous calibration: ___

Signature: [signature] Reviewed By: NA Page 2 of 7

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 21775-226.003 SAMPLE ID: MW-3 (13)

PURGED BY: C. Chace CLIENT NAME: ARCO 2111

SAMPLED BY: C. Chace LOCATION: SAN LEANDRO

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

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

CASING ELEVATION (feet/MSL): ND VOLUME IN CASING (gal.): ___

DEPTH TO WATER (feet): 11.96 CALCULATED PURGE (gal.): NA

DEPTH OF WELL (feet): 26.7 ACTUAL PURGE VOL. (gal.): ___

DATE PURGED: - Start (2400 Hr) - End (2400 Hr) -

DATE SAMPLED: 2-16-98 Start (2400 Hr) 13:10 End (2400 Hr) -

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
13:10	Grab	6.83	705.5	61.2	clr	0

D. O. (ppm): 0-1 ODOR: None - -

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

Field QC samples collected at this well: —

Parameters field filtered at this well: —

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

WELL INTEGRITY: Good LOCK #: 3480

REMARKS: ___

Meter Calibration: Date: ___ Time: ___ Meter Serial #: ___ Temperature °F: ___

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

Location of previous calibration: ___

Signature: [signature] Reviewed By: SA Page 3 of 7

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 21775-226.003 SAMPLE ID: MW-4 (12' ?)

PURGED BY: C. CHACO CLIENT NAME: ARCO 2111

SAMPLED BY: C. CHACO LOCATION: SAN LEANDRO

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

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

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

DEPTH TO WATER (feet): 10.65 CALCULATED PURGE (gal.): N/A

DEPTH OF WELL (feet): 21.7 ACTUAL PURGE VOL. (gal.): ___

DATE PURGED: — Start (2400 Hr) — End (2400 Hr) —

DATE SAMPLED: 2-16-98 Start (2400 Hr) 12:55 End (2400 Hr) —

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
12:55	Grab	6.88	870.0	60.5	clr	0

D. O. (ppm): 0-1 ODOR: none — —

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

Field QC samples collected at this well: —

Parameters field filtered at this well: ✓

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 #: 3460

REMARKS: ___

Meter Calibration: Date: ___ Time: ___ Meter Serial #: ___ Temperature °F: ___

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

Location of previous calibration: ___

Signature: [signature] Reviewed By: [signature] Page 4 of 7

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 21775-226.003 SAMPLE ID: MW-5 (12')

PURGED BY: C. CHACO CLIENT NAME: ARCO 2111

SAMPLED BY: C. CHACO LOCATION: SAN LEANDRO

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

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

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

DEPTH TO WATER (feet): 10.56 CALCULATED PURGE (gal.): N/A

DEPTH OF WELL (feet): 23.9 ACTUAL PURGE VOL. (gal.): ___

DATE PURGED: - Start (2400 Hr) - End (2400 Hr) -

DATE SAMPLED: 2-16-98 Start (2400 Hr) 13:25 End (2400 Hr) -

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
13:25	Grab	6.91	393.3	60.2	cloudy	light

D. O. (ppm): 0-1 ODOR: None - -

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

Field QC samples collected at this well: ___

Parameters field filtered at this well: ___

PURGING EQUIPMENT

___ 2" Bladder Pump ___ Bailer (Teflon®)

___ Centrifugal Pump ___ Bailer (PVC)

___ Submersible Pump ___ Bailer (Stainless Steel)

___ Well Wizard™ ___ Dedicated

Other: ___

SAMPLING EQUIPMENT

___ 2" Bladder Pump ✓ Bailer (Teflon®)

___ DDL Sampler ___ Bailer (Stainless Steel)

___ Dipper ___ Submersible Pump

___ Well Wizard™ ___ Dedicated

Other: ___

WELL INTEGRITY: Good LOCK #: 3490

REMARKS: ___

Meter Calibration: Date: ___ Time: ___ Meter Serial #: ___ Temperature °F: ___

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

Location of previous calibration: ___

Signature: [signature] Reviewed By: NA Page 5 of 7

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 21775-226.003 SAMPLE ID: MW-7 (13')

PURGED BY: C. CHACO CLIENT NAME: ARCO 2111

SAMPLED BY: C. CHACO LOCATION: SAN LEANDRO

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

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

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

DEPTH TO WATER (feet): 12.03 CALCULATED PURGE (gal.): N/A

DEPTH OF WELL (feet): 22.0 ACTUAL PURGE VOL. (gal.): N/A

DATE PURGED: ___ Start (2400 Hr) ___ End (2400 Hr) ___

DATE SAMPLED: 2-16-98 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)
1400	Grab	6.65	995.6	62.5	clr	light

D. O. (ppm): 2-3 ODOR: strong — (COBALT 0 - 500) ✓ (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 ___ Bailer (PVC)

___ Submersible Pump ___ Bailer (Stainless Steel)

___ Well Wizard™ ___ Dedicated

Other: ___

SAMPLING EQUIPMENT

___ 2" Bladder Pump ___ Bailer (Teflon®)

___ DDL Sampler ___ Bailer (Stainless Steel)

___ Dipper ___ Submersible Pump

___ Well Wizard™ ___ Dedicated

Other: ___

WELL INTEGRITY: Good LOCK #: Alpha

REMARKS: ___

Meter Calibration: Date: ___ Time: ___ Meter Serial #: ___ Temperature °F: ___

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

Location of previous calibration: ___

Signature: ___ Reviewed By: ___ Page 6 of 7

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 21775-226.003 SAMPLE ID: MW-6 (C)

PURGED BY: C. Chaco CLIENT NAME: ARCO 2111

SAMPLED BY: C Chaco LOCATION: San Leandro

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

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

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

DEPTH TO WATER (feet): N/A CALCULATED PURGE (gal.): N/A

DEPTH OF WELL (feet): N/A ACTUAL PURGE VOL. (gal.): ___

DATE PURGED: ___ Start (2400 Hr) ___ End (2400 Hr) ___

DATE SAMPLED: 2-16-98 Start (2400 Hr) ___ End (2400 Hr) ___

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
			No Sample			
			Car on Well			

D. O. (ppm): ___ ODOR: ___ (COBALT 0 - 500) (NTU 0 - 200 or 0 - 1000)

Field QC samples collected at this well: ___

Parameters field filtered at this well: ___

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
___ 2" Bladder Pump	___ Bailer (Teflon®)	___ 2" Bladder Pump	___ Bailer (Teflon®)
___ Centrifugal Pump	___ Bailer (PVC)	___ DDL Sampler	___ Bailer (Stainless Steel)
___ Submersible Pump	___ Bailer (Stainless Steel)	___ Dipper	___ Submersible Pump
___ Well Wizard™	___ Dedicated	___ Well Wizard™	___ Dedicated
Other: ___		Other: ___	

WELL INTEGRITY: ___ LOCK #: ___

REMARKS: No sample collected due to car parked on monitoring well.

Meter Calibration: Date: ___ Time: ___ Meter Serial #: ___ Temperature °F: ___

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

Location of previous calibration: ___

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

EMCON Associates - Field Services | Historical Monitoring Well Data

1921 Ringwood Avenue | **1998** | ARCO 2111

San Jose, California | 21775-226.003

Well ID	Quarter	Date	Purge Volume (gallons)	Did well dry	Well Contained Product	Gallons
		2-16-98				**First** 0.00
						Second 0.00
						Third 0.00
						Fourth 0.00
MW-1	First		Grab	NA	NO	
	Second	06/27/97	GRAB	NO	NO	
	Third	08/04/97	GRAB	NO	NO	
	Fourth					
MW-2	First		Grab	NA	NO	
	Second	06/27/97	GRAB	NO	NO	
	Third	08/04/97	GRAB	NO	NO	
	Fourth					
MW-3	First		Grab	NA	NO	
	Second	06/27/97	GRAB	NO	NO	
	Third	08/04/97	GRAB	NO	NO	
	Fourth					
MW-4	First		Grab	NA	NO	
	Second	06/27/97	GRAB	NO	NO	
	Third	08/04/97	GRAB	NO	NO	
	Fourth					
MW-5	First		Grab	NA	NO	
	Second	06/27/97	GRAB	NO	NO	
	Third	08/04/97	GRAB	NO	NO	
	Fourth					
MW-6	First		Grab	NA	NO	
	Second	06/27/97	GRAB	NO	NO	
	Third	08/04/97	GRAB	NO	NO	
	Fourth					
MW-7	First		Grab	NA	NO	
	Second	06/27/97	GRAB	NO	NO	
	Third	08/04/97	GRAB	NO	NO	
	Fourth					
						Steam water (gal) _____