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ENVIRONMENTAL PROTECTION
96 JUN 26 PM 2:45

Date June 24, 1996
Project 20805-132.003

To:

Increase in [petrol / BTEX]
2-3 orders of magnitude
Was there a recent release.

Ms. Eva Chu
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	First quarter 1996 groundwater monitoring results
	for ARCO service station 6041, Dublin, California

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

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

John C. Young
Project Manager

cc: Copy entire document:
Kevin Graves, RWQCB - SFBR
Michael Whelan, ARCO Products Company
File

Copy tranmsmittal and Table 2:
Scott T. Hooton, BP Oil Company

ARCO Products Company

Date:

June 24, 1996

Re: ARCO Station #

6041 • 7249 Village Parkway • Dublin, CA
First Quarter 1996 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
Environmental Engineer

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

June 24, 1996
Project 20805-132.003

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

Re: First quarter 1996 groundwater monitoring program results, ARCO service station 6041, Dublin, California

Dear Mr. Whelan:

This letter presents the results of the first quarter 1996 groundwater monitoring program at ARCO Products Company (ARCO) service station 6041, 7249 Village Parkway,, Dublin, California (Figure 1). The quarterly 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, 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.

Please call if you have questions.

Sincerely,

EMCON

REGISTERED GEOLOGIST
JOHN CHARLES YOUNG
NO. 6407
STATE OF CALIFORNIA

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

June 24, 1996

ARCO QUARTERLY REPORT

Station No.: 6041 Address: 7249 Village Parkway, Dublin, California
EMCON Project No. 20805-132.003
ARCO Environmental Engineer/Phone No.: ~~Michael Whelan /(408) 453-1640~~
EMCON Project Manager/Phone No.: John Young /(408) 453-7300
Primary Agency/Regulatory ID No.: ACHCSA /Eva Chu

Paul Supple
PO Box 9549
Moraga, CA 94570
510/ 299-8891

WORK PERFORMED THIS QUARTER (First- 1996):

1. Conducted quarterly groundwater monitoring and sampling.
2. Prepared and submitted quarterly report for fourth quarter 1995.

WORK PROPOSED FOR NEXT QUARTER (Second- 1996):

1. Perform quarterly groundwater monitoring and sampling.
2. Prepare and submit quarterly report for first quarter 1996.
3. Initiate permitting for line replacement.

QUARTERLY MONITORING:

Current Phase of Project:	Quarterly Groundwater Monitoring
Frequency of Sampling:	Quarterly (groundwater)
Frequency of Monitoring:	Quarterly (groundwater)
Is Floating Product (FP) Present On-site:	☐ Yes ☒ No
Bulk Soil Removed to Date :	15 cubic yards of TPH impacted soil
Bulk Soil Removed This Quarter :	None
Water Wells or Surface Waters, within 2000 ft., impacted by site:	None
Current Remediation Techniques:	None
Approximate Depth to Groundwater:	6.60 feet
Groundwater Gradient (Average):	0.012 ft/ft toward east

ATTACHED:

- Table 1 - Groundwater Monitoring Data, First Quarter 1996
- Table 2 - Historical Groundwater Elevation Data
- Table 3 - Historical Groundwater Analytical Data
- Table 4 - Historical Groundwater Elevation Data (BP, Shell, and UNOCAL Stations)
- Figure 1 - Site Location
- Figure 2 - Groundwater Data, First Quarter 1996
- Figure 3 - Vicinity Groundwater Contours (ARCO, BP, Shell, and UNOCAL Stations), First Quarter 1996
- Appendix A - Field Data Sheets, First Quarter 1996 Groundwater Monitoring Event
- Appendix B - Analytical Results and Chain of Custody Documentation, First Quarter 1996 Groundwater Monitoring Event

cc: Eva Chu, ACHCSA
Kevin Graves, RWQCB-SFBR

Table 1
Groundwater Monitoring Data
First Quarter 1996

ARCO Service Station 6041
7249 Village Parkway, Dublin, California

Date: 05-14-96

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	02-26-96	336.56	7.35	329.21	ND	E	0.012	03-13-96	1100	28	<7	13	7	3400	--
MW-2	02-26-96	334.80	6.65	328.15	ND	E	0.012	03-13-96	350	66	<0.5	11	1.7	<3	--
MW-3	02-26-96	335.53	8.42	327.11	ND	E	0.012	03-13-96	16000	1600	1200	300	2000	9500	--
MW-4	02-26-96	334.22	6.65	327.57	ND	E	0.012	03-13-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--
MW-5	02-26-96	335.87	6.73	329.14	ND	E	0.012	03-13-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--
MW-6	02-26-96	335.84	6.60	329.24	ND	E	0.012	03-13-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--

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 Statest Environmental Protection Agency
MTBE: methyl-tert-butyl ether
ND: none detected
E: east
--: not analyzed

esj/h:\6041\6041mdb.xls\Table 1:imi
20805-132.003

Table 2
Historical Groundwater Elevation Data
1994 - Present*

ARCO Service Station 6041
7249 Village Parkway, Dublin, California

Date: 05-14-96

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	02-11-94	336.56	10.35	326.21	ND	NR	NR
MW-1	03-13-94	336.56	9.99	326.57	ND	NR	NR
MW-1	05-17-94	336.56	9.82	326.74	ND	NR	NR
MW-1	08-25-94	336.56	10.11	326.45	ND	NR	NR
MW-1	09-22-94	336.56	11.20	325.36	ND	NR	NR
MW-1	11-18-94	336.56	10.25	326.31	ND	NR	NR
MW-1	02-15-95	336.56	8.53	328.03	ND	NR	NR
MW-1	05-24-95	336.56	9.00	327.56	ND	ESE	0.002
MW-1	08-25-95	336.56	10.30	326.26	ND	NW	0.006
MW-1	11-28-95	336.56	11.01	325.55	ND	N	0.006
MW-1	02-26-96	336.56	7.35	329.21	ND	E	0.012
MW-2	02-11-94	334.80	8.59	326.21	ND	NR	NR
MW-2	03-13-94	334.80	8.09	326.71	ND	NR	NR
MW-2	05-17-94	334.80	7.99	326.81	ND	NR	NR
MW-2	08-25-94	334.80	9.23	325.57	ND	NR	NR
MW-2	09-22-94	334.80	9.47	325.33	ND	NR	NR
MW-2	11-18-94	334.80	8.70	326.10	ND	NR	NR
MW-2	02-15-95	334.80	6.75	328.05	ND	NR	NR
MW-2	05-24-95	334.80	6.88	327.92	ND	ESE	0.002
MW-2	08-25-95	334.80	7.91	326.89	ND	NW	0.006
MW-2	11-28-95	334.80	9.06	325.74	ND	N	0.006
MW-2	02-26-96	334.80	6.65	328.15	ND	E	0.012
MW-3	02-11-94	335.53	9.60	325.93	ND	NR	NR
MW-3	03-13-94	335.53	9.03	326.50	ND	NR	NR
MW-3	05-17-94	335.53	9.11	326.42	ND	NR	NR
MW-3	08-25-94	335.53	11.09	324.44	ND	NR	NR
MW-3	09-22-94	335.53	10.21	325.32	ND	NR	NR
MW-3	11-18-94	335.53	9.79	325.74	ND	NR	NR
MW-3	02-15-95	335.53	8.55	326.98	ND	NR	NR
MW-3	05-24-95	335.53	8.17	327.36	ND	ESE	0.002
MW-3	08-25-95	335.53	9.27	326.26	ND	NW	0.006
MW-3	11-28-95	335.53	9.91	325.62	ND	N	0.006
MW-3	02-26-96	335.53	8.42	327.11	ND	E	0.012

Table 2
Historical Groundwater Elevation Data
1994 - Present*

ARCO Service Station 6041
7249 Village Parkway, Dublin, California

Date: 05-14-96

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-4	02-11-94	334.22	8.15	326.07	ND	NR	NR
MW-4	03-13-94	334.22	7.57	326.65	ND	NR	NR
MW-4	05-17-94	334.22	7.49	326.73	ND	NR	NR
MW-4	08-25-94	334.22	8.79	325.43	ND	NR	NR
MW-4	09-22-94	334.22	8.99	325.23	ND	NR	NR
MW-4	11-18-94	334.22	8.31	325.91	ND	NR	NR
MW-4	02-15-95	334.22	7.85	326.37	ND	NR	NR
MW-4	05-24-95	334.22	6.68	327.54	ND	ESE	0.002
MW-4	08-25-95	334.22	6.93	327.29	ND	NW	0.006
MW-4	11-28-95	334.22	8.21	326.01	ND	N	0.006
MW-4	02-26-96	334.22	6.65	327.57	ND	E	0.012
MW-5	02-11-94	335.87	9.63	326.24	ND	NR	NR
MW-5	03-13-94	335.87	9.26	326.61	ND	NR	NR
MW-5	05-17-94	335.87	8.99	326.88	ND	NR	NR
MW-5	08-25-94	335.87	10.23	325.64	ND	NR	NR
MW-5	09-22-94	335.87	10.39	325.48	ND	NR	NR
MW-5	11-18-94	335.87	9.65	326.22	ND	NR	NR
MW-5	02-15-95	335.87	7.80	328.07	ND	NR	NR
MW-5	05-24-95	335.87	8.10	327.77	ND	ESE	0.002
MW-5	08-25-95	335.87	9.43	326.44	ND	NW	0.006
MW-5	11-28-95	335.87	10.12	325.75	ND	N	0.006
MW-5	02-26-96	335.87	6.73	329.14	ND	E	0.012
MW-6	02-11-94	335.84	9.66	326.18	ND	NR	NR
MW-6	03-13-94	335.84	9.28	326.56	ND	NR	NR
MW-6	05-17-94	335.84	9.10	326.74	ND	NR	NR
MW-6	08-25-94	335.84	10.39	325.45	ND	NR	NR
MW-6	09-22-94	335.84	10.50	325.34	ND	NR	NR
MW-6	11-18-94	335.84	9.54	326.30	ND	NR	NR
MW-6	02-15-95	335.84	7.81	328.03	ND	NR	NR
MW-6	05-24-95	335.84	8.35	327.49	ND	ESE	0.002
MW-6	08-25-95	335.84	9.71	326.13	ND	NW	0.006
MW-6	11-28-95	335.84	10.28	325.56	ND	N	0.006
MW-6	02-26-96	335.84	6.60	329.24	ND	E	0.012

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
ESE: east-southeast
NW: northwest
N: north
e: east
*: For previous historical groundwater elevation data please refer to *Fourth Quarter 1995 Groundwater Monitoring Program Results, ARCO Service Station 6041, Dublin, California*, (EMCON, February 26, 1996).

Table 3
Historical Groundwater Analytical Data
Petroleum Hydrocarbons and Their Constituents
1994 - Present*

ARCO Service Station 6041
7249 Village Parkway, Dublin, California

Date: 06-04-96

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-1	02-11-94	2000	<2.5	<2.5	25	5.7	--	--
MW-1	05-17-94	1400	79	1.4	11	2.4	--	--
MW-1	08-25-94	880	2.4	<1	4.6	<1	--	--
MW-1	11-18-94	2500	1.5	<0.5	1.4	<1	--	--
MW-1	02-15-95	820	15	<1	5.2	1.4	--	--
MW-1	05-24-95	640	12	<1	7.3	<1	--	--
MW-1	08-25-95	780	2	<1	2	2	2500	--
MW-1	11-28-95	570	2.2	<0.5	1.4	0.9	--	--
MW-1	03-13-96	1100	28	<7	13	7	3400	--
MW-2	02-11-94	<50	2.4	0.7	<0.5	<0.5	--	--
MW-2	05-17-94	150	19	<0.5	2.5	1.2	--	--
MW-2	08-25-94	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-2	11-18-94	237	1.9	0.6	<0.5	<1	--	--
MW-2	02-15-95	730	110	1.7	25	66	--	--
MW-2	05-24-95	370	110	<1	17	1.9	--	--
MW-2	08-25-95	150	6	<1	<1	<1	2700	--
MW-2	11-28-95	<50	<0.5	<0.5	<0.5	0.8	--	--
MW-2	03-13-96	350	66	<0.5	11	1.7	<3	--
MW-3	02-11-94	220	42	<1.0	84	<1.0	--	--
MW-3	05-17-94	200	44	<0.5	9.3	<0.5	--	--
MW-3	08-25-94	100	4.3	<0.5	1.1	<0.5	--	--
MW-3	11-18-94	1850	3.5	<0.5	0.9	<1	--	--
MW-3	02-15-95	100	14	<0.5	6.3	<0.5	--	--
MW-3	05-24-95	110	8	<0.5	2.7	<0.5	--	--
MW-3	08-25-95	210	3.6	<0.5	2.9	0.6	20000	--
MW-3	11-28-95	81	1.5	<0.5	1.4	<0.5	--	15000
MW-3	03-13-96	16000	1600	1200	300	2000	9500	--
MW-4	02-11-94	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-4	05-17-94	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-4	08-25-94	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-4	11-18-94	<50	<0.5	<0.5	<0.5	<1	--	--
MW-4	02-15-95	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-4	05-24-95	Not sampled: not scheduled for chemical analysis						
MW-4	08-25-95	<50	<0.5	<0.5	<0.5	<0.5	<3	--
MW-4	11-28-95	Not sampled: not scheduled for chemical analysis						
MW-4	03-13-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--

Table 3
Historical Groundwater Analytical Data
Petroleum Hydrocarbons and Their Constituents
1994 - Present*

ARCO Service Station 6041
7249 Village Parkway, Dublin, California

Date: 06-04-96

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	02-11-94	<50	<0.5	<0.5	<0.5	<0.5	- -	- -
MW-5	05-17-94	<50	<0.5	<0.5	<0.5	<0.5	- -	- -
MW-5	08-25-94	<50	<0.5	<0.5	<0.5	<0.5	- -	- -
MW-5	11-18-94	<50	<0.5	<0.5	<0.5	<1	- -	- -
MW-5	02-15-95	<50	<0.5	<0.5	<0.5	<0.5	- -	- -
MW-5	05-24-95	Not sampled: not scheduled for chemical analysis						
MW-5	08-25-95	Not sampled: not scheduled for chemical analysis						
MW-5	11-28-95	Not sampled: not scheduled for chemical analysis						
MW-5	03-13-96	<50	<0.5	<0.5	<0.5	<0.5	<3	- -
MW-6	02-11-94	<50	<0.5	<0.5	<0.5	<0.5	- -	- -
MW-6	05-17-94	<50	<0.5	<0.5	<0.5	<0.5	- -	- -
MW-6	08-25-94	<50	<0.5	<0.5	<0.5	<0.5	- -	- -
MW-6	11-18-94	<50	<0.5	<0.5	<0.5	<1	- -	- -
MW-6	02-15-95	<50	<0.5	<0.5	<0.5	<0.5	- -	- -
MW-6	05-24-95	Not sampled: not scheduled for chemical analysis						
MW-6	08-25-95	Not sampled: not scheduled for chemical analysis						
MW-6	11-28-95	Not sampled: not scheduled for chemical analysis						
MW-6	03-13-96	<50	<0.5	<0.5	<0.5	<0.5	<3	- -

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
*: For previous historical analytical data please refer to *Fourth Quarter 1995 Groundwater Monitoring Program Results, ARCO Service Station 6041, Dublin, California*, (EMCON, February 26, 1996).

Table 4
Historical Groundwater Elevation Data

BP Station 1116, 7197 Village Parkway
Former Shell Station, 7194 Amador Valley Boulevard
UNOCAL Station, 7375 Amador Valley Boulevard

Date: 05-14-96

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground-Water Elevation ft-MSL	Comments
BP Station 1116					
MW-1	02-11-94	335.17	8.72	326.45	
MW-1	10-04-94	335.17	9.66	325.51	
MW-1	11-18-94	335.17	Not surveyed:		
MW-1	02-15-95	335.17	6.56	328.61	
MW-1	05-24-95	335.17	6.80	328.37	
MW-1	08-25-95	335.17	8.61	326.56	
MW-1	11-28-95	335.17	9.54	325.63	
MW-1	02-26-96	335.17	Not surveyed:		
MW-2	02-11-94	334.58	8.10	326.48	
MW-2	10-04-94	334.58	9.27	325.31	
MW-2	11-18-94	334.58	Not surveyed:		
MW-2	02-15-95	334.58	5.97	328.61	
MW-2	05-24-95	334.58	6.50	328.08	
MW-2	08-25-95	334.58	8.30	326.28	
MW-2	11-28-95	334.58	9.05	325.53	
MW-2	02-26-96	334.58	Not surveyed:		
MW-3	02-11-94	335.13	8.60	326.53	
MW-3	10-04-94	335.13	9.81	325.32	
MW-3	11-18-94	335.13	Not surveyed:		
MW-3	02-15-95	335.13	6.61	328.52	
MW-3	05-24-95	335.13	6.83	328.30	
MW-3	08-25-95	335.13	8.84	326.29	
MW-3	11-28-95	335.13	8.57	326.56	
MW-3	02-26-96	335.13	Not surveyed:		
AW-4	02-11-94	333.41	6.84	326.57	
AW-4	10-04-94	333.41	8.04	325.37	
AW-4	11-18-94	333.41	6.80	326.61	
AW-4	02-15-95	333.41	4.91	328.50	
AW-4	05-24-95	333.41	5.32	328.09	
AW-4	08-25-95	333.41	7.22	326.19	
AW-4	11-28-95	333.41	7.81	325.60	
AW-4	02-26-96	333.41	Not surveyed:		

Table 4
Historical Groundwater Elevation Data

BP Station 1116, 7197 Village Parkway
Former Shell Station, 7194 Amador Valley Boulevard
UNOCAL Station, 7375 Amador Valley Boulevard

Date: 05-14-96

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground-Water Elevation ft-MSL	Comments
AW-5	02-11-94	334.81	8.20	326.61	
AW-5	10-04-94	334.81	8.70	326.11	
AW-5	11-18-94	334.81	8.20	326.61	
AW-5	02-15-95	334.81	6.65	328.16	
AW-5	05-24-95	334.81	7.27	327.54	
AW-5	08-25-95	334.81	8.52	326.29	
AW-5	11-28-95	334.81	9.32	325.49	
AW-5	02-26-96	334.81	7.13	327.68	
AW-6	02-11-94	334.90	8.04	326.86	
AW-6	10-04-94	334.90	9.33	325.57	
AW-6	11-18-94	334.90	7.17	327.73	
AW-6	02-15-95	334.90	6.19	328.71	
AW-6	05-24-95	334.90	6.87	328.03	
AW-6	08-25-95	334.90	8.29	326.61	
AW-6	11-28-95	334.90	9.20	325.70	
AW-6	02-26-96	334.90	5.78	329.12	
Former Shell Station					
MW-1	02-11-94	334.83	8.62	326.21	
MW-1	08-25-94	334.83	9.24	325.59	
MW-1	11-23-94	334.83	8.74	326.09	
MW-1	02-15-95	334.83	6.84	327.99	
MW-1	05-24-95	334.83	7.91	326.92	
MW-1	08-25-95	334.83	8.11	326.72	
MW-1	11-28-95	334.83	Not surveyed: not scheduled for monitoring		
MW-1	02-26-96	334.83	5.60	329.23	
MW-2	02-11-94	336.96	11.04	325.92	
MW-2	08-25-94	336.96	11.29	325.67	
MW-2	11-23-94	336.96	10.92	326.04	
MW-2	02-15-95	336.96	8.90	328.06	
MW-2	05-24-95	336.96	10.02	326.94	
MW-2	08-25-95	336.96	10.24	326.72	
MW-2	11-28-95	336.96	Not surveyed: not scheduled for monitoring		
MW-2	02-26-96	336.96	7.54	329.42	

Table 4
Historical Groundwater Elevation Data

BP Station 1116, 7197 Village Parkway
Former Shell Station, 7194 Amador Valley Boulevard
UNOCAL Station, 7375 Amador Valley Boulevard

Date: 05-14-96

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground-Water Elevation ft-MSL	Comments
MW-3	02-11-94	336.93	10.68	326.25	
MW-3	08-25-94	336.93	11.30	325.63	
MW-3	11-23-94	336.93	10.48	326.45	
MW-3	02-15-95	336.93	8.35	328.58	
MW-3	05-24-95	336.93	9.67	327.26	
MW-3	08-25-95	336.93	9.36	327.57	
MW-3	11-28-95	336.93	Not surveyed: not scheduled for monitoring		
MW-3	02-26-96	336.93	7.04	329.89	
MW-4	02-11-94	337.14	10.71	326.43	
MW-4	08-25-94	337.14	10.84	326.30	
MW-4	11-23-94	337.14	10.78	326.36	
MW-4	02-15-95	337.14	9.49	327.65	
MW-4	05-24-95	337.14	10.73	326.41	
MW-4	08-25-95	337.14	10.22	326.92	
MW-4	11-28-95	337.14	Not surveyed: not scheduled for monitoring		
MW-4	02-26-96	337.14	7.52	329.62	
MW-5	02-11-94	334.96	8.97	325.99	
MW-5	08-25-94	334.96	9.19	325.77	
MW-5	11-23-94	334.96	8.78	326.18	
MW-5	02-15-95	334.96	6.88	328.08	
MW-5	05-24-95	334.96	8.04	326.92	
MW-5	08-25-95	334.96	8.34	326.62	
MW-5	11-28-95	334.96	Not surveyed: not scheduled for monitoring		
MW-5	02-26-96	334.96	Not surveyed: not scheduled for monitoring		
MW-6	02-11-94	335.42	9.02	326.40	
MW-6	08-25-94	335.42	9.79	325.63	
MW-6	11-23-94	335.42	9.20	326.22	
MW-6	02-15-95	335.42	7.36	328.06	
MW-6	05-24-95	335.42	8.80	326.62	
MW-6	08-25-95	335.42	8.50	326.92	
MW-6	11-28-95	335.42	Not surveyed: not scheduled for monitoring		
MW-6	02-26-96	335.42	5.94	329.48	

Table 4
Historical Groundwater Elevation Data

BP Station 1116, 7197 Village Parkway
Former Shell Station, 7194 Amador Valley Boulevard
UNOCAL Station, 7375 Amador Valley Boulevard

Date: 05-14-96

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground-Water Elevation ft-MSL	Comments
MW-7	02-11-94	333.23	6.12	327.11	
MW-7	08-25-94	333.23	6.76	326.47	
MW-7	11-23-94	333.23	6.75	326.48	
MW-7	02-15-95	333.23	5.40	327.83	
MW-7	05-24-95	333.23	6.82	326.41	
MW-7	08-25-95	333.23	6.46	326.77	
MW-7	11-28-95	333.23			Not surveyed: not scheduled for monitoring
MW-7	02-26-96	333.23			Not surveyed: not scheduled for monitoring
MW-8	02-11-94	335.80	8.80	327.00	
MW-8	08-25-94	335.80	9.52	326.28	
MW-8	11-23-94	335.80	9.08	326.72	
MW-8	02-15-95	335.80	6.67	329.13	
MW-8	05-24-95	335.80	7.56	328.24	
MW-8	08-25-95	335.80	8.60	327.20	
MW-8	11-28-95	335.80			Not surveyed: not scheduled for monitoring
MW-8	02-26-96	335.80			Not surveyed: not scheduled for monitoring
MW-9	02-11-94	334.57	8.88	325.69	
MW-9	08-25-94	334.57	8.79	325.78	
MW-9	11-23-94	334.57	8.65	325.92	
MW-9	02-15-95	334.57	7.36	327.21	
MW-9	05-24-95	334.57	7.75	326.82	
MW-9	08-25-95	334.57	7.90	326.67	
MW-9	11-28-95	334.57			Not surveyed: not scheduled for monitoring
MW-9	02-26-96	334.57			Not surveyed: not scheduled for monitoring
MW-11	02-11-94	334.20	8.21	325.99	
MW-11	08-25-94	334.20	8.68	325.52	
MW-11	11-23-94	334.20	8.27	325.93	
MW-11	02-15-95	334.20	6.46	327.74	
MW-11	05-24-95	334.20	7.69	326.51	
MW-11	08-25-95	334.20	7.70	326.50	
MW-11	11-28-95	334.20			Not surveyed: not scheduled for monitoring
MW-11	02-26-96	334.20			Not surveyed: not scheduled for monitoring

Table 4
Historical Groundwater Elevation Data

BP Station 1116, 7197 Village Parkway
Former Shell Station, 7194 Amador Valley Boulevard
UNOCAL Station, 7375 Amador Valley Boulevard

Date: 05-14-96

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground-Water Elevation ft-MSL	Comments
MW-12	02-11-94	332.53	7.18	325.35	
MW-12	08-25-94	332.53	7.24	325.29	
MW-12	11-23-94	332.53	7.16	325.37	
MW-12	02-15-95	332.53	5.16	327.37	
MW-12	05-24-95	332.53	6.95	325.58	
MW-12	08-25-95	332.53	5.63	326.90	
MW-12	11-28-95	332.53			Not surveyed: not scheduled for monitoring
MW-12	02-26-96	332.53			Not surveyed: not scheduled for monitoring
MW-13	02-11-94	335.64	9.12	326.52	
MW-13	08-25-94	335.64	9.32	326.32	
MW-13	11-23-94	335.64	9.37	326.27	
MW-13	02-15-95	335.64	8.42	327.22	
MW-13	05-24-95	335.64	9.90	325.74	
MW-13	08-25-95	335.64	8.32	327.32	
MW-13	11-28-95	335.64			Not surveyed: not scheduled for monitoring
MW-13	02-26-96	335.64	5.76	329.88	
RW-1	08-25-94	336.19	10.56	325.63	
RW-1	11-23-94	336.19	10.07	326.12	
RW-1	02-15-95	336.19	8.20	327.99	
RW-1	05-24-95	336.19	9.66	326.53	
RW-1	08-25-95	336.19	9.37	326.82	
RW-1	11-28-95	336.19			Not surveyed: not scheduled for monitoring
RW-1	02-26-96	336.19			Not surveyed: not scheduled for monitoring
UNOCAL Station					
MW-1	02-11-94	336.07	9.72	326.35	
MW-1	05-17-94	336.07	9.26	326.81	
MW-1	08-25-94	336.07	10.58	325.49	
MW-1	11-18-94	336.07	9.69	326.38	
MW-1	02-17-95	336.07	7.80	328.27	
MW-1	05-24-95	336.07	8.98	327.09	
MW-1	08-25-95	336.07	9.68	326.39	
MW-1	11-28-95	336.07	10.45	325.62	
MW-1	02-26-96	336.07	6.45	329.62	

Table 4
Historical Groundwater Elevation Data

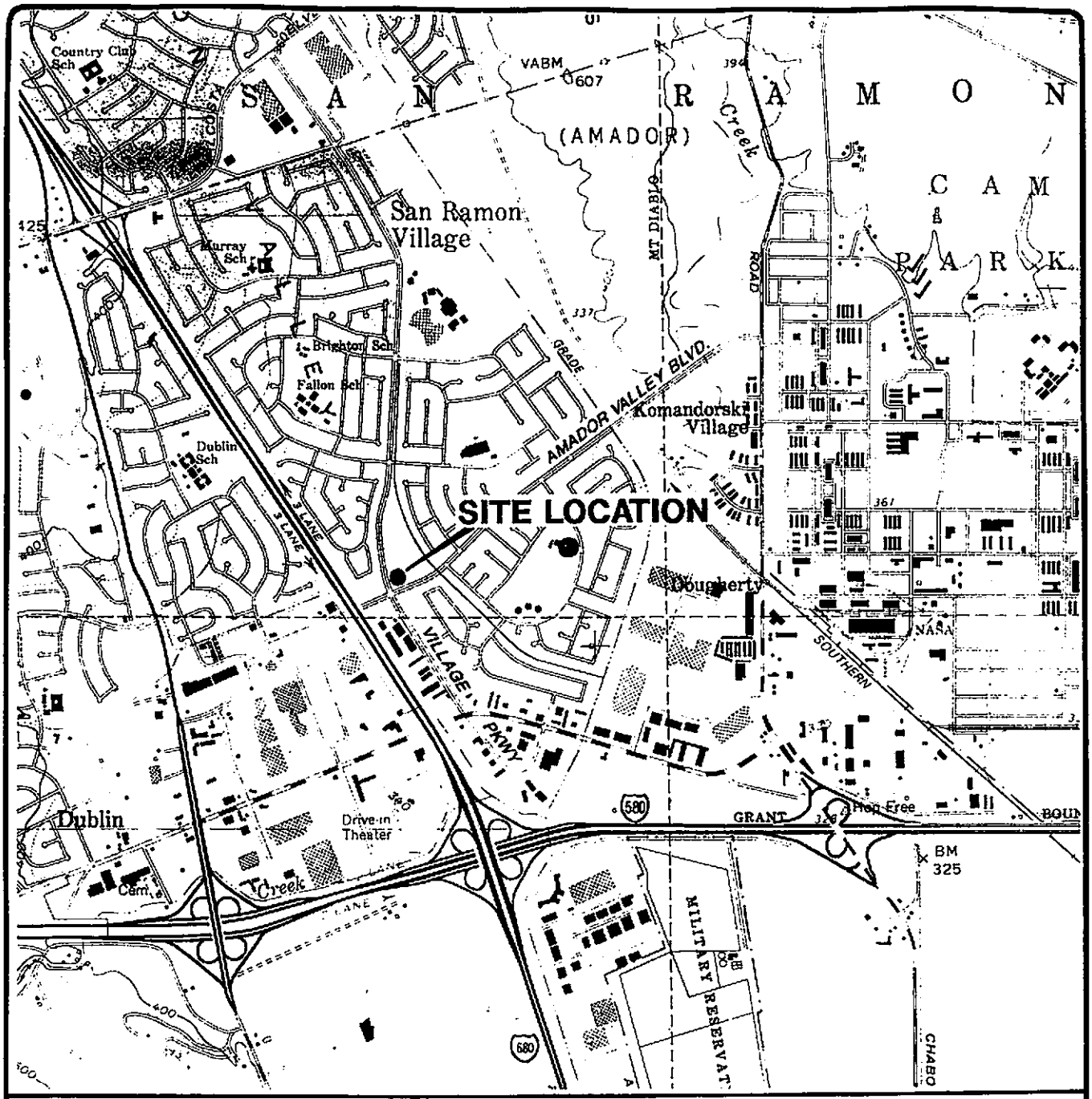
BP Station 1116, 7197 Village Parkway
Former Shell Station, 7194 Amador Valley Boulevard
UNOCAL Station, 7375 Amador Valley Boulevard

Date: 05-14-96

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground-Water Elevation ft-MSL	Comments
MW-2	02-11-94	336.78	9.85	326.93	
MW-2	05-17-94	336.78	9.31	327.47	
MW-2	08-25-94	336.78	10.75	326.03	
MW-2	11-18-94	336.78	9.95	326.83	
MW-2	02-17-95	336.78	7.58	329.20	
MW-2	05-24-95	336.78	8.33	328.45	
MW-2	08-25-95	336.78	9.76	327.02	
MW-2	11-28-95	336.78	10.65	326.13	
MW-2	02-26-96	336.78	6.39	330.39	
MW-3	02-11-94	336.98	10.01	326.97	
MW-3	05-17-94	336.98	9.49	327.49	
MW-3	08-25-94	336.98	10.93	326.05	
MW-3	11-18-94	336.98	10.15	326.83	
MW-3	02-17-95	336.98	7.62	329.36	
MW-3	05-24-95	336.98	8.26	328.72	
MW-3	08-25-95	336.98	10.03	326.95	
MW-3	11-28-95	336.98	10.85	326.13	
MW-3	02-26-96	336.98	6.39	330.59	
MW-4	02-11-94	336.43	10.10	326.33	
MW-4	05-17-94	336.43	9.63	326.80	
MW-4	08-25-94	336.43	10.94	325.49	
MW-4	11-18-94	336.43	10.10	326.33	
MW-4	02-17-95	336.43	8.12	328.31	
MW-4	05-24-95	336.43	8.68	327.75	
MW-4	08-25-95	336.43	10.08	326.35	
MW-4	11-28-95	336.43	10.81	325.62	
MW-4	02-26-96	336.43	6.75	329.68	
MW-5	02-11-94	335.96	10.08	325.88	
MW-5	05-17-94	335.96	9.24	326.72	
MW-5	08-25-94	335.96	10.43	325.53	
MW-5	11-18-94	335.96	10.09	325.87	
MW-5	02-17-95	335.96	7.76	328.20	
MW-5	05-24-95	335.96	7.98	327.98	
MW-5	08-25-95	335.96	9.57	326.39	
MW-5	11-28-95	335.96	10.33	325.63	
MW-5	02-26-96	335.96	7.15	328.81	

TOC: top of casing
ft-MSL: elevation in feet, relative to mean sea level

152753



Base map from USGS 7.5' Quad. Map:
Dublin, California. (Photorevised 1980).

N

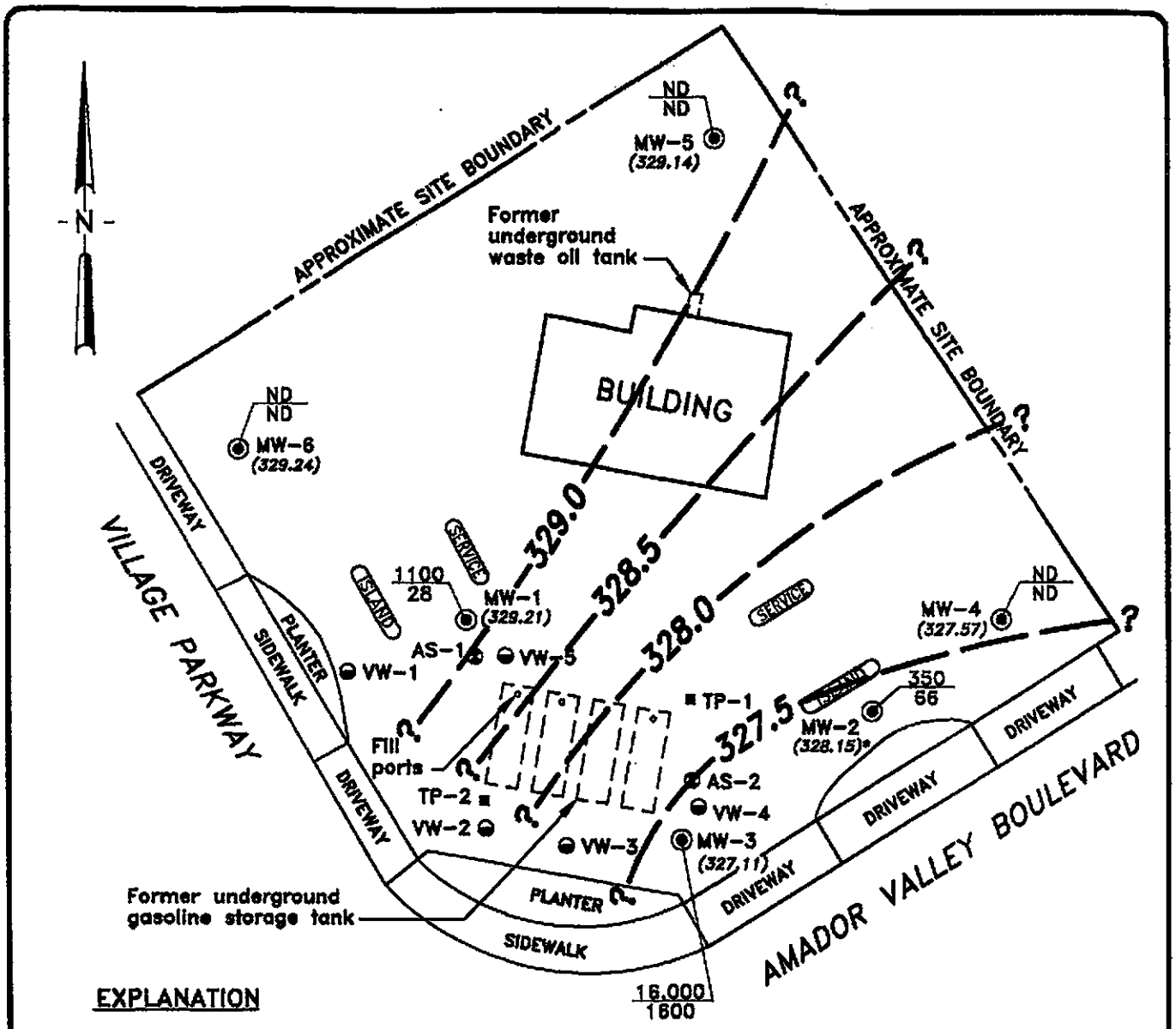
Scale : 0 2000 4000 Feet

EMCON

ARCO PRODUCTS COMPANY
SERVICE STATION 6041, 7249 VILLAGE PARKWAY
QUARTERLY GROUNDWATER MONITORING
DUBLIN, CALIFORNIA

SITE LOCATION

FIGURE
1
PROJECT NO.
805-132.03



EXPLANATION

- ◉ Groundwater monitoring well
- ▪ Tank pit observation well
- ⊖ Vapor extraction well
- ⊗ Air sparge well
- NS Not sampled; not scheduled for chemical analysis
- NS Not detected at or above the method reporting limit for TPHG (50 µg/L) and benzene (0.5 ug/L)
- * Groundwater elevation not used in contouring
- (329.21) Groundwater elevation (Ft.–MSL) measured 2/26/96
- ? Groundwater elevation contour (Ft.–MSL)
- 350 / 66 TPHG concentration (ug/L); sampled 2/26/96; Benzene concentration (ug/L); sampled 2/26/96

SCALE: 0 40 80 FEET (Approximate)

EMCON

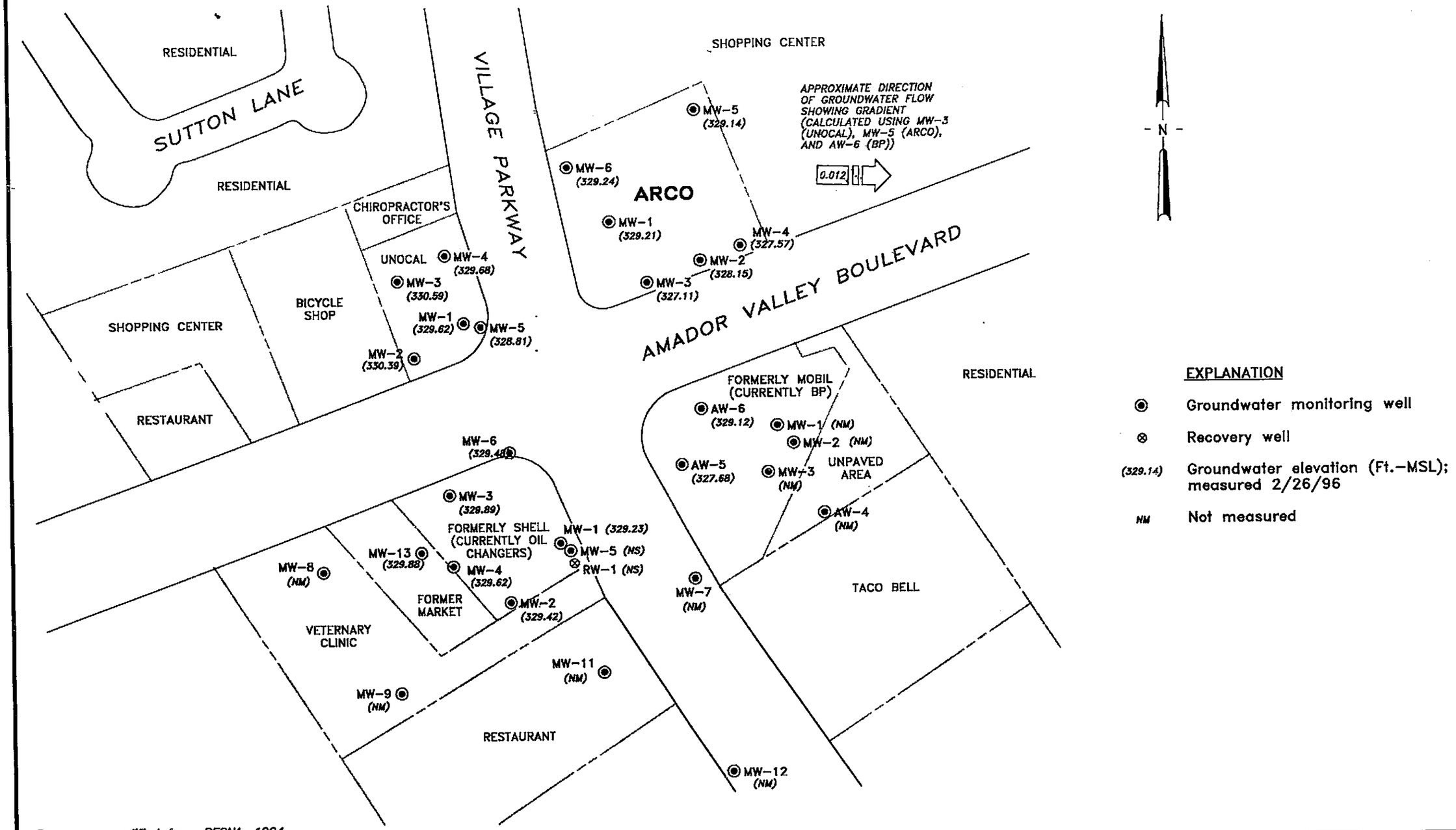
ARCO PRODUCTS COMPANY
SERVICE STATION 6041, 7249 VILLAGE PARKWAY
QUARTERLY GROUNDWATER MONITORING
DUBLIN, CALIFORNIA

GROUNDWATER DATA
FIRST QUARTER 1996

FIGURE 2

PROJECT NO. 805-132.003

G:\805-132\G01 REV 0 05/03/96 10:00:39 DD DJ



Base map modified from RESNA, 1994.

EMCON

SCALE: 0 40 80 FEET

ARCO PRODUCTS COMPANY
SERVICE STATION 6041, 7249 VILLAGE PARKWAY
QUARTERLY GROUNDWATER MONITORING
DUBLIN, CALIFORNIA

GROUNDWATER DATA
FIRST QUARTER 1996

FIGURE
3
PROJECT NO.
805-132.03

G:\805-132\G00 REV 0 05/08/96 13:01:53 KAJ DJ

APPENDIX A

FIELD DATA SHEETS, FIRST QUARTER 1996 GROUNDWATER MONITORING EVENT

FIELD REPORT
DEPTH TO WATER / FLOATING PRODUCT SURVEY

PROJECT # : 21775-244.002 STATION ADDRESS : 7249 Village Parkway, Dublin DATE : 2-26-96

ARCO STATION # : 6041 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-4	Good	15/16	Present Good	ARCO	Good	6.65	6.65	NA	NA	14.5	Water in Box
2	MW-5		15/16				6.73	6.73			16.4	
3	MW-6		15/16				6.60	6.60			15.8	
4	MW-2		15/16				6.65	6.65			14.0	
5	MW-3		15/16				8.42	8.42			14.6	Water in Box.
6	MW-1		15/16				7.35	7.35			17.5	

SURVEY POINTS ARE TOP OF WELL CASINGS

Rev 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 20975-244.002 SAMPLE ID: MW-1 (17)

PURGED BY: D Gamblin CLIENT NAME: ARCO 6041

SAMPLED BY: D Gamblin LOCATION: Dublin 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.): 6.70

DEPTH TO WATER (feet): 7.24 CALCULATED PURGE (gal.): 20.11

DEPTH OF WELL (feet): 17.5 ACTUAL PURGE VOL. (gal.): 10.0

DATE PURGED: 3/13/96 Start (2400 Hr) ~~1357~~ 1257 End (2400 Hr) 1303

DATE SAMPLED: 3/13/96 Start (2400 Hr) 1315 End (2400 Hr) ___

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1259	7.0	7.07	2500	66.4	Tan	Light
1303	Well dry at 10.0g					
1315	Recharge	6.59	2630	70.1	Tan	Light

D. O. (ppm): NR ODOR: None

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		SAMPLING EQUIPMENT	
___ 2" Bladder Pump	___ Bailer (Teflon®)	___ 2" Bladder Pump	X Bailer (Teflon®)
___ Centrifugal Pump	X 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 #: ARCO

REMARKS: Well Dry at 10.0g

DTW at Sample - 15.41

Meter Calibration: Date: 3/13/96 Time: 1325 Meter Serial #: 4972 Temperature °F: ___

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

Location of previous calibration: MW-3

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

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 21775.244002 SAMPLE ID: MW-2(14')

PURGED BY: D. Gamblin CLIENT NAME: ARCO 6041

SAMPLED BY: D. Gamblin LOCATION: Dublin, 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.):	5.23
DEPTH TO WATER (feet):	6.10	CALCULATED PURGE (gal.):	15.68
DEPTH OF WELL (feet):	14.1	ACTUAL PURGE VOL. (gal.):	16.0

DATE PURGED: 3/13/96 Start (2400 Hr) 1211 End (2400 Hr) 1222

DATE SAMPLED: 3/13/96 Start (2400 Hr) 1225 End (2400 Hr) ___

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1216	5.5	6.57	3060	66.9	Tan	Mod
1219	11.0	7.07	3110	66.1	"	"
1222	16.0	7.11	3090	66.6	↓	↓

D. O. (ppm): NR ODOR: None

COLOR (visual): NR (COBALT 0 - 500)

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

Field QC samples collected at this well: NR

Parameters field filtered at this well: NR

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
___ 2" Bladder Pump	___ Bailer (Teflon®)	___ 2" Bladder Pump	X Bailer (Teflon®)
___ Centrifugal Pump	X 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 #: ARCO

REMARKS: ___

Meter Calibration: Date: 3/13/96 Time: 945 Meter Serial #: 472 Temperature °F: ___

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

Location of previous calibration: MW-3

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

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 3175244002 SAMPLE ID: MW-3 (14)

PURGED BY: L Gamble CLIENT NAME: ARCO 6041

SAMPLED BY: L Gamble LOCATION: Dublin, 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.): 5.50

DEPTH TO WATER (feet): 6.31 CALCULATED PURGE (gal.): 16.5

DEPTH OF WELL (feet): 14.7 ACTUAL PURGE VOL. (gal.): 9.2

DATE PURGED: 3/13/96 Start (2400 Hr) 1012 End (2400 Hr) 1018

DATE SAMPLED: 3/13/96 Start (2400 Hr) 1245 End (2400 Hr) ___

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1015	5.5	7.06	2400	67.1	Tan	Light
1018	Well Dry at 9.0 g					
1245	Recharge	7.18	2480	68.4	Tan	Light

D. O. (ppm): NR ODOR: None

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

REMARKS: Well Dry at 9.0 g

DTW at Sampling = 8.99

Meter Calibration: Date: 3/13/96 Time: 945 Meter Serial #: 4972 Temperature °F: 65.0

(EC 1000 990 / 1000) (DI ___) (pH 7 7.01 / 7.00) (pH 10 9.98 / 10.00) (pH 4 4.05 / ___)

Location of previous calibration: ___

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

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 21775244.002 SAMPLE ID: MW-4(14)

PURGED BY: D. Gamblin CLIENT NAME: ARCO 6041

SAMPLED BY: D Gamblin LOCATION: Dublin, 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.): 5.53

DEPTH TO WATER (feet): 6.03 CALCULATED PURGE (gal.): 16.60

DEPTH OF WELL (feet): 14.5 ACTUAL PURGE VOL. (gal.): 17.0

DATE PURGED: 3/13/96 Start (2400 Hr) 1028 End (2400 Hr) 1040

DATE SAMPLED: 3/13/96 Start (2400 Hr) 1045 End (2400 Hr) ___

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1030	6.0	7.09	5530	67.1	Tan	Ligh-
1036	11.5	7.12	5670	67.5	Brn	Mod
1040	17.0	7.15	5760	67.4	↓	↓

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		SAMPLING EQUIPMENT	
___ 2" Bladder Pump	___ Bailer (Teflon®)	___ 2" Bladder Pump	X Bailer (Teflon®)
___ Centrifugal Pump	X 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 #: ARCO

REMARKS: ___

Meter Calibration: Date: 3/13/96 Time: 945 Meter Serial #: 4372 Temperature °F: ___

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

Location of previous calibration: MW-3

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

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 21775-244.002 SAMPLE ID: MW-5 (17)

PURGED BY: D. Gamblin CLIENT NAME: ARCO 6041

SAMPLED BY: D. Gamblin LOCATION: Dublin, 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.): 7.09

DEPTH TO WATER (feet): 6.65 CALCULATED PURGE (gal.): 21.27

DEPTH OF WELL (feet): 17.5 ACTUAL PURGE VOL. (gal.): 21.5

DATE PURGED: 3/13/96 Start (2400 Hr) 1100 End (2400 Hr) 1114

DATE SAMPLED: 3/13/96 Start (2400 Hr) 1120 End (2400 Hr) ___

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1105	7.5	7.33	4080	66.5	Tan	Light
1109	14.5	7.39	4120	67.1	↓	↓
1114	21.5	7.37	4190	67.1	↓	↓

D. O. (ppm): NR ODOR: None 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		SAMPLING EQUIPMENT	
___ 2" Bladder Pump	___ Bailer (Teflon®)	___ 2" Bladder Pump	X Bailer (Teflon®)
___ Centrifugal Pump	X 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 #: ARCO

REMARKS: ___

Meter Calibration: Date: 3/13/96 Time: 945 Meter Serial #: 4072 Temperature °F: ___

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

Location of previous calibration: MW-3

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

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: ~~20805.132.002~~ 21775.244.002 SAMPLE ID: MW-6(15)

PURGED BY: D. Gamboa CLIENT NAME: ARCO 6041

SAMPLED BY: D. Gamboa LOCATION: Dublin 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.): 6.14

DEPTH TO WATER (feet): 6.40 CALCULATED PURGE (gal.): 18.42

DEPTH OF WELL (feet): 15.8 ACTUAL PURGE VOL. (gal.): 18.5

DATE PURGED: 3/13/96 Start (2400 Hr) 1142 End (2400 Hr) 1155

DATE SAMPLED: 3/13/96 Start (2400 Hr) 1200 End (2400 Hr) ___

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1146	6.5	8.26	169	66.3	Tan	Light
1151	12.5	7.41	362	66.0	↓	↓
1155	18.5	7.38	389	66.1	↓	↓

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		SAMPLING EQUIPMENT	
___ 2" Bladder Pump	___ Bailer (Teflon®)	___ 2" Bladder Pump	X Bailer (Teflon®)
___ Centrifugal Pump	X 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: Grad LOCK #: ARCO

REMARKS: ___

Meter Calibration: Date: 3/13/96 Time: 945 Meter Serial #: 4972 Temperature °F: ___

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

Location of previous calibration: MW-3

Signature: Dawn Kamboa Reviewed By: ST Page 6 of 6

ALISTO ENGINEERING GROUP
GROUNDWATER MONITORING

Client: BP Oil
Alisto Project No: 10-17-5-3
Service Station No: 11116

Date: 2-26-96
Field Personnel: D. Cassela
Site Address: 7197 Village Pkwy. Dublin

FIELD ACTIVITY:

X Groundwater Monitoring
X Groundwater Sampling
___ Well Development

QUALITY CONTROL SAMPLES:

___ QC-1 Sample Duplicate (Well ID)
___ QC-2 Trip Blank
___ QC-3 Rinsate Blank

Well ID	Well Diam	Order Measured/ Sampled	Total Depth	Depth to Water	Depth to Product	Product Thick-ness	Comments
AW5	4	1	32.90	7.13			
AW6	4	✓	11.50	5.78			

Notes:

FORM: FS2/121592

TABLE OF WELL GAUGING DATA

WELL I.D.	DATA COLLECTION DATE	MEASUREMENT REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLES LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLES LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
MW-1	2/26/96	TOC	--	NONE	--	--	6.60	25.10
MW-2	2/26/96	TOC	--	NONE	--	--	7.54	24.52
MW-3	2/26/96	TOC	--	NONE	--	--	7.04	24.20
MW-4	2/26/96	TOC	--	NONE	--	--	7.52	24.72
MW-6 *	2/26/96	TOC	--	NONE	--	--	5.94	22.88
MW-13	2/26/96	TOC	ODOR	NONE	--	--	5.76	17.04

* Sample DUP was a duplicate sample taken from well MW-6.

Post-it® Fax Note 7671 Date 3-Apr-96 # of pages ▶ 1
To Rob Davis From Joe Neely
Co./Dept. Co.
Phone # Phone #
Fax # 408-437-9526 Fax #

MONITORING
PUMPING
REMEDIATION
SAMPLING
mpds SERVICES, INCORPORATED

Site: UNOCAL S/S # 5366
7375 AMADOR VALLEY BLVD.
DUBLIN

TABLE 1

SUMMARY OF MONITORING DATA

(Monitored and Sampled on February 26, 1996)

Well #	Depth to Water (feet)◆	Product Thickness (feet)	Sheen	Water Purged (gallons)	Product Purged (ounces)
MW-1	6.45	0	No	9.0	0
MW-2	6.39	0	No	9.0	0
MW-3	6.39	0	No	8.5	0
MW-4	6.75	0	No	9.0	0
MW-5	7.15	0	No	9.0	0

◆ Depth to water level measurements were taken from the top of the well casings.

2401 Stanwell Drive, Suite 300, Concord, CA 94520
TEL: (510) 602-5120 FAX: (510) 689-1918

APPENDIX B

ANALYTICAL RESULTS AND CHAIN-OF-CUSTODY DOCUMENTATION, FIRST QUARTER 1996 GROUNDWATER MONITORING EVENT

Columbia Analytical Services, Inc.

March 20, 1996

Service Request No: S9600410

John Young
EMCON
1921 Ringwood Avenue
San Jose, CA 95131

Re: **6041 Dublin / 20805-132.002 / TO#19350.00**

Dear Mr. Young:

The following pages contain analytical results for sample(s) received by the laboratory on March 13, 1996. 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 9, 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

SLG/jk

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:**	S9600410
Project:	6041 Dublin / 20805-132.002 / TO#19350.00	**Date Collected:**	3/13/96
Sample Matrix:	Water	**Date Received:**	3/13/96
		Date Extracted:	NA

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

	Sample Name:	**MW-4(14)**	**MW-5(17)**	**MW-6(15)**
	Lab Code:	S9600410-001	S9600410-002	S9600410-003
	Date Analyzed:	3/18/96	3/18/96	3/18/96
Analyte	**MRL**			
TPH as Gasoline	50	ND	ND	ND
Benzene	0.5	ND	ND	ND
Toluene	0.5	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND
Total Xylenes	0.5	ND	ND	ND
Methyl-tert-butyl ether	3	ND	ND	ND

3S22/060194

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	ARCO Products Company	**Service Request:**	S9600410
Project:	6041 Dublin / 20805-132.002 / TO#19350.00	**Date Collected:**	3/13/96
Sample Matrix:	Water	**Date Received:**	3/13/96
		Date Extracted:	NA

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

		Sample Name:	**MW-2(14)**	**MW-3(14)**	**MW-1(17)**
		Lab Code:	S9600410-004	S9600410-005	S9600410-006
		Date Analyzed:	3/18/96	3/19/96	3/19,20/96
Analyte	**MRL**				
TPH as Gasoline	50		350	16000	1100
Benzene	0.5		66	1600	28
Toluene	0.5		ND	1200	<7*
Ethylbenzene	0.5		11	300	13
Total Xylenes	0.5		1.7	2000	7
Methyl-tert-butyl ether	3		ND	9500	3400

* Raised MRL due to matrix interference.

3S22/060194

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	ARCO Products Company	**Service Request:**	S9600410
Project:	6041 Dublin / 20805-132.002 / TO#19350.00	**Date Collected:**	3/13/96
Sample Matrix:	Water	**Date Received:**	3/13/96
		Date Extracted:	NA

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

	Sample Name:	**Method Blank**	**Method Blank**	**Method Blank**
	Lab Code:	S9600318-WB	S9600319-WB	S9600320-WB
	Date Analyzed:	3/18/96	3/19/96	3/20/96
Analyte	**MRL**			
TPH as Gasoline	50	ND	ND	ND
Benzene	0.5	ND	ND	ND
Toluene	0.5	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND
Total Xylenes	0.5	ND	ND	ND
Methyl-tert-butyl ether	3	ND	ND	ND

3S22/060194

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 6041 Dublin / 20805-132.002 / TO#19350.00
Sample Matrix: Water

Service Request: S9600410
Date Collected: 3/13/96
Date Received: 3/13/96
Date Extracted: NA
Date Analyzed: 3/18-20/96

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-4(14)	S9600410-001	89	102
MW-5(17)	S9600410-002	95	101
MW-6(15)	S9600410-003	95	102
MW-2(14)	S9600410-004	96	101
MW-3(14)	S9600410-005	95	98
MW-1(17)	S9600410-006	77	109
Method Blank	S9600318-WB	93	98
Method Blank	S9600319-WB	95	99
Method Blank	S9600320-WB	93	94
MW-4(14) MS	S9600410-001MS	97	87
MW-4(14) DMS	S9600410-001DMS	96	102
	CAS Acceptance Limits:	69-116	69-116

SUR2/060194

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	ARCO Products Company	**Service Request:**	S9600410
Project:	6041 Dublin / 20805-132.002 / TO#19350.00	**Date Collected:**	3/13/96
Sample Matrix:	Water	**Date Received:**	3/13/96
		Date Extracted:	NA
		Date Analyzed:	3/18/96

Matrix Spike/Duplicate Matrix Spike Summary
BTE
EPA Methods 5030/8020
Units: ug/L (ppb)

Sample Name: MW-4(14)
Lab Code: S9600410-001

	Spike Level		Sample	Spike Result		Percent Recovery		CAS Acceptance	Relative Percent
Analyte	MS	DMS	**Result**	MS	DMS	MS	DMS	Limits	**Difference**
Benzene	25	25	ND	25.3	24.6	101	98	75-135	3
Toluene	25	25	ND	25.3	24.4	101	98	73-136	4
Ethylbenzene	25	25	ND	24.7	24.0	99	96	69-142	3

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 6041 Dublin / 20805-132.002 / TO#19350.00

Service Request: S9600410
Date Analyzed: 3/18/96

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	25.2	101	85-115
Toluene	25	25.0	100	85-115
Ethylbenzene	25	24.7	99	85-115
Xylenes, Total	75	75.1	100	85-115
Gasoline	250	250	100	90-110
Methyl-tert-butyl Ether	50	43	86	85-115

ARCO Products Company
Division of AtlanticRichfieldCompany

Task Order No. 19350.00

Chain of Custody

ARCO Facility no. 6041	City (Facility) Dublin	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 602/EPA 8020	BTEX/TPH (gas) and MTBE 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	EPA 625/8270	TCLP Metals ☐ Semi VOA ☐ VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐		
1	MW-4(14)		2		X		X	HCL	3/13/96	1045		X											
2	MW-5(17)		2		X		X	HCL		1120		X											
3	MW-6(15)		2		X		X	HCL		1200		X											
4	MW-2(14)		2		X		X	HCL		1225		X											
5	MW-3(14)		2		X		X	HCL		1245		X											
6	MW-1(17)		2		X		X	HCL	↓	1315		X											

Method of shipment: Sampler will deliver

Special detection Limit/reporting: Lowest Possible

Special QA/QC: As Normal

Remarks: 2 - 40ml HCL VOAs

#20805-132.007

Lab number: 596 00410

Turnaround time: Changed TAT per John Y. 3/13/96

Priority Rush 1 Business Day ☐ 11:00

Rush 2 Business Days ☐

Expedited 5 Business Days ☐

Standard 10 Business Days ☒

Condition of sample:		Temperature received:	
Relinquished by sampler: Dan Gardoli	Date 3/13/96 Time 1400	Received by	
Relinquished by	Date Time	Received by	
Relinquished by	Date Time	Received by laboratory: Christina V Laybee	Date 3/13/96 Time 14:00

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

APPC-3292 (2-91)

(3/20)