

**EMCON**

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

Date September 29, 1995Project 20805-121.002

To:

Mr. Scott Seery
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harborbay Parkway, Suite 250
Alameda, California 94502

ENVIRONMENTAL
PROTECTION
35 OCT -6 PM 2:41

We are enclosing:

Copies	Description
<u>1</u>	<u>Second quarter 1995 groundwater monitoring report</u>
	<u>for ARCO service station 601, San Leandro, California</u>
<u>1</u>	<u>John Sullivan letter</u>

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

Comments:

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

David Larsen
Project Coordinator

cc: Kevin Graves, RWQCB - SFBR
Mike Bakaldin, SLFD
Michael Whelan, ARCO Products Company
David Larsen, EMCON
File



ARCO Products Company

Environmental Engineering
2155 South Bascom Avenue, Suite 202
Campbell, California 95008



Date: September 29, 1995

Re: ARCO Station # 601 • 712 Lewelling Boulevard • San Leandro, CA
Second Quarter 1995 Groundwater Monitoring Report

" 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:

A handwritten signature in black ink, reading "Michael R. Whelan". The signature is written in a cursive, flowing style.

Michael R. Whelan
Environmental Engineer



EMCON

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

August 24, 1995
Project 20805-121.002

Mr. John Sullivan
17760 Sweetbriar Place
Castro Valley, California 94546

Re: Second quarter 1995 laboratory analytical results, groundwater samples, Chateau Manor Apartments, 724 Lewelling Boulevard, San Leandro, California

Dear Mr. Sullivan:

Enclosed please find copies of the laboratory analytical results for groundwater samples collected from wells MW-9 and MW-10 during the second quarter of 1995. These wells are located at Chateau Manor Apartments, 724 Lewelling Boulevard, San Leandro, California. The groundwater samples were collected on June 1, 1995, during quarterly sampling of the ARCO Products Company service station 601, at 712 Lewelling Boulevard, San Leandro. The laboratory analytical results indicate that concentrations of total petroleum hydrocarbons as gasoline, and the gasoline constituents benzene, toluene, ethylbenzene, and total xylenes, were not detected.

Please call if you have questions.

Sincerely,

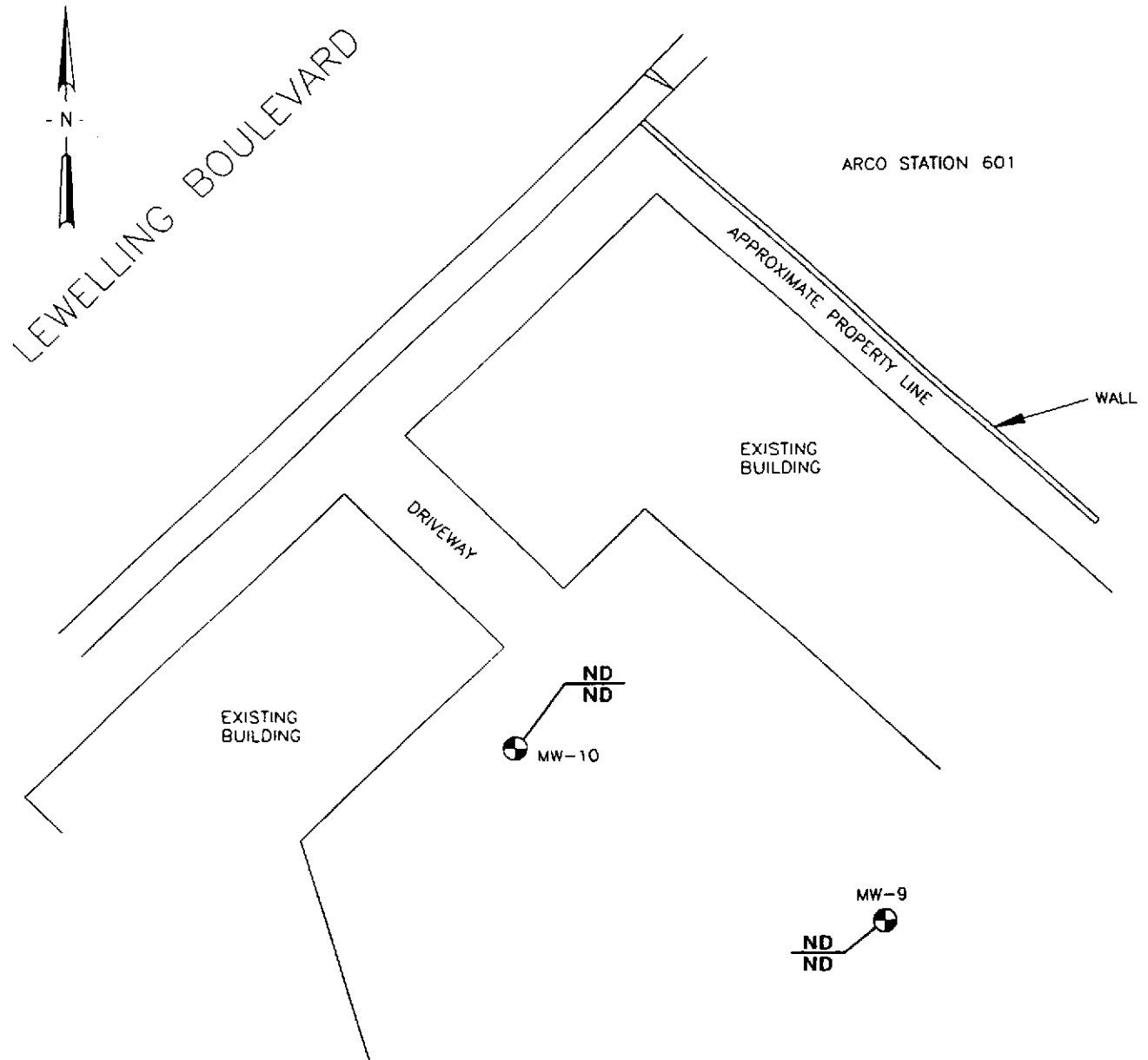
EMCON


David Larsen
Project Coordinator

Attachments: Figure 1 - Generalized Site Plan
Copy of Analytical Results and Chain-of-Custody Documentation,
Wells MW-9 and MW-10, Second Quarter 1995

cc: Scott Seery, ACHCSA
Kevin Graves, RWQCB - SFBR
Mike Whelan, ARCO Products Company
David Larsen, EMCON
File





EXPLANATION



Groundwater monitoring well

ND
ND

TPHG concentration in groundwater (ppb)

Benzene concentration in groundwater (ppb)

ND = Not detected

SCALE: 0 40 FEET
(Approximate)

Base map modified from RESNA, 1994.



emcon

CHATEAU MANOR APARTMENTS
724 LEWELLING BLVD.
QUARTERLY GROUNDWATER MONITORING
SAN LEANDRO, CALIFORNIA

GENERALIZED SITE PLAN

FIGURE

1

PROJECT NO.
805-121.02



June 15, 1995

Service Request No. S950691

John Young
EMCON
1921 Ringwood Avenue
San Jose, CA 95131

Re: **ARCO Facility No. 0601 / EMCON Project No. 0805-121.02**

Dear Mr. Young:

Attached are the results of the water sample(s) submitted to our lab on June 1, 1995. For your reference, these analyses have been assigned our service request number S950691.

All analyses were performed consistent with our laboratory's quality assurance program. All results are intended to be considered in their entirety, and CAS is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions.

Respectfully submitted:

COLUMBIA ANALYTICAL SERVICES, INC.

STEVEN GREEN

Steven L. Green
Project Chemist

Annelise Jade Bayar

Annelise J. Bazar
Regional QA Coordinator

SLG/ajb

COLUMBIA ANALYTICAL SERVICES, Inc.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
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
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is 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
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 MRL
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: ARCO Facility No. 601/EMCON Project No. 0805-121.02
Sample Matrix: Water

Service Request: S950691
Date Collected: 6/1/95
Date Received: 6/1/95
Date Extracted: NA
Date Analyzed: 6/13/95

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method

Analyte:	TPH as Gasoline	Benzene	Toluene	Ethyl- benzene	Xylenes, Total
Units:	ug/L (ppb)	ug/L (ppb)	ug/L (ppb)	ug/L (ppb)	ug/L (ppb)
Method Reporting Limit:	50	0.5	0.5	0.5	0.5

Sample Name

Lab Code

MW-9 (16)	S950691-001	ND	ND	ND	ND	ND
MW-10 (18)	S950691-002	ND	ND	ND	ND	ND
Method Blank	S950613-WB1	ND	ND	ND	ND	ND

Approved By: GAL

Date: 6/15/95

5ABTXGAS/061694

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:
Project: ARCO Facility No. 601/EMCON Project No. 0805-121.02
Sample Matrix: Water

Service Request: S950691
Date Collected: 6/1/95
Date Received: 6/1/95
Date Extracted: NA
Date Analyzed: 6/13/95

Matrix Spike/Duplicate Matrix Spike Summary

BTE

EPA Methods 5030/8020

Units: ug/L (ppb)

Sample Name: Batch QC
Lab Code: S950700-001

Percent Recovery

Analyte	Spike Level		Sample Result	Spike Result		Percent Recovery		CAS Acceptance Limits	Relative Percent Difference
	MS	DMS		MS	DMS	MS	DMS		
Benzene	25	25	ND	25.4	26.0	102	104	75-135	2
Toluene	25	25	ND	24.0	24.9	96	100	73-136	4
Ethylbenzene	25	25	ND	24.5	25.1	98	100	69-142	2

Approved By: GAW

Date: 6/15/95

DMSIS/060194

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

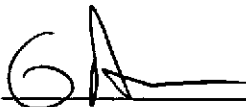
Client: EMCON
Project: ARCO Facility No. 601/EMCON Project No. 0805-121.02
Sample Matrix: Water

Service Request: S950691
Date Collected: 6/1/95
Date Received: 6/1/95
Date Extracted: NA
Date Analyzed: 6/13/95

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

Sample Name	Lab Code	Percent Recovery α, α, α -Trifluorotoluene
MW-9 (16)	S950691-001	93
MW-10 (18)	S950691-002	98
(MS)	S950700-001MS	101
(DMS)	S950700-001DMS	97
Method Blank	S950613-WB1	93

CAS Acceptance Limits: 69-116

Approved By: 

Date: 6/15/95

SLR1/062994

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

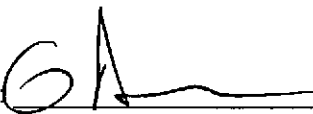
Client: EMCON
Project: ARCO Facility No. 601/EMCON Project No. 0805-121.02

Service Request: S950691
Date Analyzed: 6/13/95

Initial Calibration Verification (ICV) Summary
BTEX 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	25.8	103	85-115
Toluene	25	25.1	100	85-115
Ethylbenzene	25	25.8	103	85-115
Xylenes, Total	75	75.4	101	85-115
Gasoline	250	249	100	90-110

Approved By



Date:

6/15/95

ICV25AL/060194

Division of Atlantic Richfield Company

Chain of Custody

Laboratory name

CAS

Contract number

**Standard
10 Business Days**

**EMCON**

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

ENVIRONMENTAL
PROTECTION95 OCT -6 PM 2:42
August 24, 1995

Project 20805-121.002

Mr. Michael Whelan
ARCO Products Company
2155 South Bascom Avenue, Suite 202
Campbell, California 95008

Re: Second quarter 1995 groundwater monitoring program results, ARCO service station 601, San Leandro, California

Dear Mr. Whelan:

This letter presents the results of the second quarter 1995 groundwater monitoring program at ARCO Products Company (ARCO) service station 601, 712 Lewelling Boulevard, San Leandro, California (Figure 1). The quarterly monitoring program complies with Alameda County Health Care Services Agency (ACHCSA) requirements regarding underground tank investigations.

BACKGROUND

Ten on-site groundwater monitoring wells (MW-1 through MW-8, MW-11, and MW-12), and five off-site groundwater monitoring wells (MW-9, MW-10, MW-13, MW-14, and MW-15) were installed as part of a comprehensive site assessment conducted at this site between June 1990 and June 1993. Please refer to *First Quarter 1995 Groundwater Monitoring Program Results, ARCO Service Station 601, San Leandro, California* (EMCON, May 1995) for more details.

MONITORING PROGRAM FIELD PROCEDURES

A program of quarterly groundwater monitoring was initiated during the third quarter of 1990 to provide information concerning water quality, flow direction, and gradient consistent with ACHCSA and Regional Water Quality Control Board (RWQCB) requirements for underground fuel tank investigations. Water levels are measured quarterly in wells MW-1 through MW-15. Wells MW-13 and MW-14 are sampled annually, during the first quarter of the year. Wells MW-12 and MW-15 are sampled semiannually, during the first and third quarters of the year. Wells MW-1 through MW-11 are sampled quarterly.

The second quarter 1995 groundwater monitoring event was performed by EMCON on June 1, 1995. Field work this quarter included (1) measuring depths to groundwater and subjectively analyzing groundwater for the presence of floating product in wells MW-1 through MW-15, (2) purging and subsequently sampling groundwater monitoring



wells MW-1 through MW-11 for laboratory analysis, and (3) directing a state-certified laboratory to analyze the groundwater samples. Copies of all field data sheets from the second quarter 1995 groundwater monitoring event are included in Appendix A.

ANALYTICAL PROCEDURES

Groundwater samples collected during second quarter 1995 monitoring were analyzed for total petroleum hydrocarbons as gasoline (TPHG), and benzene, toluene, ethylbenzene, and total xylenes (BTEX). Groundwater samples were prepared for analysis by U.S. Environmental Protection Agency (USEPA) method 5030 (purge and trap). Groundwater was analyzed for TPHG by the methods accepted by the Department of Toxic Substances Control, California Environmental Protection Agency (Cal-EPA), and referenced in the *Leaking Underground Fuel Tank (LUFT) Field Manual* (State Water Resources Control Board, October 1989). Samples were analyzed for BTEX by USEPA method 8020, as described in *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (EPA SW-846, November 1986, third edition). Groundwater samples collected from well MW-1 were also analyzed for semivolatile organic compounds (SVOCs) by USEPA method 3520/8270; total recoverable petroleum hydrocarbons (TRPH) by USEPA method 418.1; total petroleum hydrocarbons as diesel (TPHD) by USEPA method 3510 and the LUFT method; cadmium, chromium, nickel, and zinc by USEPA method 6010A; and lead by USEPA method 7421. These methods are recommended in *Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites* (August 10, 1990) for analysis of samples from petroleum-hydrocarbon-impacted sites.

MONITORING PROGRAM RESULTS

Results of the second quarter 1995 groundwater monitoring event are summarized in Table 1 and illustrated in Figure 2. Historical groundwater elevation data, including top-of-casing elevations, depth-to-water measurements, calculated groundwater elevations, floating-product thickness measurements, and groundwater flow direction and gradient data, are summarized in Table 2. Table 3 summarizes historical laboratory data for TPHG and BTEX analyses. Table 4 summarizes historical laboratory data for TRPH, TPHD, and metals analyses for wells MW-1, MW-2, MW-3, MW-5, and MW-8. Historical laboratory data for volatile organic compound (VOC) and SVOC analyses for wells MW-1, MW-2, and MW-8 are summarized in Table 5. Historical floating product recovery data for well MW-1 are summarized in Table 6. Copies of the second quarter 1995 analytical results and chain-of-custody documentation are included in Appendix B.

Groundwater elevation data collected on June 1, 1995, illustrate that groundwater beneath the site flows southwest with an approximate hydraulic gradient of 0.003 foot per foot. Figure 2 illustrates groundwater contours and analytical data for the second quarter of 1995.

Groundwater samples from wells MW-7, MW-9, and MW-10 did not contain detectable concentrations of TPHG or BTEX. Groundwater samples from wells MW-8 and MW-11 contained 2,600 and 210 micrograms per liter ($\mu\text{g/L}$) of TPHG, respectively, but did not contain detectable concentrations of benzene. Groundwater samples from wells MW-1 through MW-6 contained concentrations of TPHG from 13,000 to 270,000 $\mu\text{g/L}$, and concentrations of benzene from 400 to 11,000 $\mu\text{g/L}$.

Groundwater samples from well MW-1 did not contain detectable concentrations of cadmium ($<5 \mu\text{g/L}$), but did contain detectable concentrations of TRPH (38,000 $\mu\text{g/L}$), TPHD (190,000 $\mu\text{g/L}$), chromium (20 $\mu\text{g/L}$), lead (22 $\mu\text{g/L}$), nickel (70 $\mu\text{g/L}$), zinc (100 $\mu\text{g/L}$), naphthalene (2,200 $\mu\text{g/L}$), 2-methylnaphthalene (1,700 $\mu\text{g/L}$), and phenol (240 $\mu\text{g/L}$). The 190,000 $\mu\text{g/L}$ of TPHD reported for well MW-1 was qualified by the laboratory (chromatogram is not characteristic of the typical diesel fingerprint). Hydrocarbons in the gasoline time range were detected at the reported level (190,000 $\mu\text{g/L}$).

LIMITATIONS

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

SITE STATUS UPDATE

This update reports the site activities performed during the second quarter of 1995 and those anticipated for the third quarter of 1995.

Second Quarter 1995 Activities

- Prepared and submitted quarterly groundwater monitoring report for first quarter 1995.

Mr. Michael Whelan
August 24, 1995
Page 4

Project 20805-121.002

- Performed quarterly groundwater monitoring for second quarter 1995.

Work Anticipated for Third Quarter 1995

- Prepare and submit quarterly groundwater monitoring report for second quarter 1995.
- Perform quarterly groundwater monitoring for third quarter 1995.

Please call if you have questions.

Sincerely,

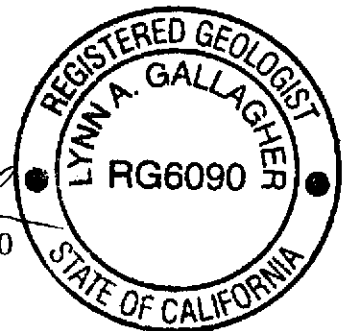
EMCON



David Larsen
Project Coordinator



Lynn A. Gallagher, R.G. 6090
Project Geologist



Attachments:

Table 1 -	Groundwater Monitoring Data, Second Quarter 1995
Table 2 -	Historical Groundwater Elevation Data
Table 3 -	Historical Groundwater Analytical Data (TPHG and BTEX)
Table 4 -	Historical Groundwater Analytical Data (TRPH, TPHD, and Metals)
Table 5 -	Historical Groundwater Analytical Data (VOCs and SVOCs)
Table 6	Approximate Cumulative Floating Product Recovered (Well MW-1)
Figure 1 -	Site Location
Figure 2 -	Groundwater Data, Second Quarter 1995
Appendix A -	Field Data Sheets, Second Quarter 1995 Groundwater Monitoring Event
Appendix B -	Analytical Results and Chain-of-Custody Documentation, Second Quarter 1995

cc: Scott Seery, ACHCSA
Kevin Graves, RWQCB-SFBR
Mike Bakaldin, SLFD

Table 1
Groundwater Monitoring Data
Second Quarter 1995

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 08-15-95
Project Number: 0805-121.02

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground- Water Elevation ft-MSL	Floating Product Thickness feet	Ground- Water Flow Direction MWN	Hydraulic Gradient foot/foot	Water Sample Field Date	TPHG µg/L	Benzene µg/L	Toluene µg/L	Ethyl- benzene µg/L	Total Xylenes µg/L
MW-1	06-01-95	22.26	7.87	14.39	ND	SW	0.003	06-01-95	250000	7100	950	3500	21000
MW-2	06-01-95	21.33	6.56	14.77	ND	SW	0.003	06-01-95	13000	400	78	210	410
MW-3	06-01-95	20.11	6.34	13.77	ND	SW	0.003	06-01-95	270000	6000	11000	5200	28000
MW-4	06-01-95	20.75	7.25	13.50	ND	SW	0.003	06-01-95	16000	2800	870	380	2700
MW-5	06-01-95	20.90	6.55	14.35	ND	SW	0.003	06-01-95	76000	11000	5400	1400	7700
MW-6	06-01-95	22.08	7.60	14.48	ND	SW	0.003	06-01-95	23000	5600	<50*	1300	1900
MW-7	06-01-95	22.89	8.40	14.49	ND	SW	0.003	06-01-95	<50	<0.5	<0.5	<0.5	<0.5
MW-8	06-01-95	20.97	6.50	14.47	ND	SW	0.003	06-01-95	2600	<2.5*	<2.5*	15	<2.5*
MW-9	06-01-95	20.89	8.15	12.74	ND	SW	0.003	06-01-95	<50	<0.5	<0.5	<0.5	<0.5
MW-10	06-01-95	21.12	7.63	13.49	ND	SW	0.003	06-01-95	<50	<0.5	<0.5	<0.5	<0.5
MW-11	06-01-95	22.38	7.90	14.48	ND	SW	0.003	06-01-95	210	<0.5	<0.5	0.9	0.7
MW-12	06-01-95	22.77	8.40	14.37	ND	SW	0.003	06-01-95	Not sampled: not scheduled for chemical analysis				
MW-13	06-01-95	22.45	7.72	14.73	ND	SW	0.003	06-01-95	Not sampled: not scheduled for chemical analysis				
MW-14	06-01-95	22.99	8.57	14.42	ND	SW	0.003	06-01-95	Not sampled: not scheduled for chemical analysis				
MW-15	06-01-95	19.19	5.84	13.35	ND	SW	0.003	06-01-95	Not sampled: not scheduled for chemical analysis				

TOC: top of casing

ft-MSL: elevation in feet, relative to mean sea level

MWN: ground-water flow direction and gradient apply to the entire monitoring well network

TPHG: total petroleum hydrocarbons as gasoline

µg/L: micrograms per liter

ND: none detected

WSW: west-southwest

*: method reporting limit was raised due to high analyte concentration requiring sample dilution

Table 2
Historical Groundwater Elevation Data

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 08-15-95
Project Number: 0805-121.02

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground- Water Elevation ft-MSL	Floating Product Thickness feet	Ground- Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-1	07-17-90	22.98	9.03	13.95	Emulsion	NR	NR
MW-1	08-07-90	22.98	9.19	13.79	ND	NR	NR
MW-1	10-15-90	22.98	^9.85	^13.13	0.25	NR	NR
MW-1	11-20-90	22.98	^9.79	^13.19	0.46	NR	NR
MW-1	12-21-90	22.98	9.18	13.80	Sheen	NR	NR
MW-1	01-09-91	22.98	^9.47	^13.51	0.02	NR	NR
MW-1	02-27-91	22.98	^9.31	^13.67	0.03	NR	NR
MW-1	03-20-91	22.98	^^7.81	^^15.17	Sheen	NR	NR
MW-1	04-16-91	22.98	6.12	16.86	Sheen	NR	NR
MW-1	05-16-91	22.98	^8.60	^13.66	0.01	NR	NR
MW-1	06-10-91	22.26	9.00	13.26	Sheen	NR	NR
MW-1	07-18-91	22.26	^9.33	^12.93	0.01	NR	NR
MW-1	08-22-91	22.26	^9.49	^12.77	0.04	NR	NR
MW-1	09-18-91	22.26	^9.63	^12.63	0.04	NR	NR
MW-1	10-10-91	22.26	^9.73	^12.53	0.04	NR	NR
MW-1	11-21-91	22.26	^8.40	^13.86	0.01	NR	NR
MW-1	12-24-91	22.26	^9.68	^13.30	0.13	NR	NR
MW-1	01-19-92	22.26	8.84	13.42	ND	NR	NR
MW-1	02-20-92	22.26	7.22	15.04	ND	NR	NR
MW-1	03-23-92	22.26	7.40	14.86	Sheen	NR	NR
MW-1	04-21-92	22.26	8.30	13.96	ND	NR	NR
MW-1	05-15-92	22.26	^8.77	^13.49	0.01	NR	NR
MW-1	06-08-92	22.26	^9.08	^13.18	0.02	NR	NR
MW-1	07-15-92	22.26	9.40	12.86	ND	NR	NR
MW-1	08-25-92	22.26	8.21	14.05	ND	NR	NR
MW-1	09-15-92	22.26	^8.18	^14.08	0.02	NR	NR
MW-1	10-28-92	22.26	8.62	13.64	ND	NR	NR
MW-1	11-16-92	22.26	^9.09	^13.17	0.02	NR	NR
MW-1	12-16-92	22.26	^8.10	^14.16	0.02	NR	NR
MW-1	01-15-93	22.26	6.53	15.73	ND	NR	NR
MW-1	02-16-93	22.26	^7.03	^15.23	0.01	NR	NR
MW-1	03-30-93	22.26	6.86	15.40	ND	NR	NR
MW-1	04-28-93	22.26	^6.77	^15.49	0.01	NR	NR
MW-1	05-13-93	22.26	^8.08	^14.18	0.01	NR	NR
MW-1	06-17-93	22.26	^8.48	^13.78	0.01	NR	NR
MW-1	07-28-93	22.26	^8.80	^13.46	0.01	NR	NR
MW-1	08-17-93	22.26	^8.81	^13.45	0.01	NR	NR
MW-1	11-08-93	22.26	^9.22	^13.04	0.01	NR	NR
MW-1	02-14-94	22.26	7.72	14.54	Sheen	NR	NR
MW-1	05-05-94	22.26	8.47	13.79	Sheen	NR	NR
MW-1	08-04-94	22.26	8.72	13.54	Sheen	SW	0.004
MW-1	11-20-94	22.26	7.81	14.45	Sheen	SW	0.002
MW-1	03-17-95	22.26	6.57	15.69	ND	WSW	0.006
MW-1	06-01-95	22.26	7.87	14.39	ND	SW	0.003

Table 2
Historical Groundwater Elevation Data

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 08-15-95
Project Number: 0805-121.02

Well Design- ation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground- Water Elevation ft-MSL	Floating Product Thickness feet	Ground- Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-2	07-17-90	22.06	7.86	14.20	ND	NR	NR
MW-2	08-07-90	22.06	8.03	14.03	ND	NR	NR
MW-2	10-15-90	22.06	8.61	13.45	ND	NR	NR
MW-2	11-20-90	22.06	8.76	13.30	ND	NR	NR
MW-2	12-21-90	22.06	8.28	13.78	ND	NR	NR
MW-2	01-09-91	22.06	8.43	13.63	ND	NR	NR
MW-2	02-27-91	22.06	8.28	13.78	ND	NR	NR
MW-2	03-20-91	22.06	^^7.26	^^14.80	ND	NR	NR
MW-2	04-16-91	22.06	6.97	15.09	ND	NR	NR
MW-2	05-16-91	22.06	7.52	14.54	ND	NR	NR
MW-2	06-10-91	21.33	7.91	13.42	ND	NR	NR
MW-2	07-18-91	21.33	8.30	13.03	ND	NR	NR
MW-2	08-22-91	21.33	8.50	12.83	ND	NR	NR
MW-2	09-18-91	21.33	8.63	12.70	ND	NR	NR
MW-2	10-10-91	21.33	8.82	12.51	ND	NR	NR
MW-2	11-21-91	21.33	8.46	12.87	ND	NR	NR
MW-2	12-24-91	21.33	8.72	12.61	ND	NR	NR
MW-2	01-19-92	21.33	7.96	13.37	ND	NR	NR
MW-2	02-20-92	21.33	6.55	14.78	ND	NR	NR
MW-2	03-23-92	21.33	6.86	14.47	ND	NR	NR
MW-2	04-21-92	21.33	7.15	14.18	ND	NR	NR
MW-2	05-15-92	21.33	7.61	13.72	ND	NR	NR
MW-2	06-08-92	21.33	7.95	13.38	ND	NR	NR
MW-2	07-15-92	21.33	8.45	12.88	ND	NR	NR
MW-2	08-25-92	21.33	8.53	12.80	ND	NR	NR
MW-2	09-15-92	21.33	8.71	12.62	ND	NR	NR
MW-2	10-28-92	21.33	8.89	12.44	ND	NR	NR
MW-2	11-16-92	21.33	7.93	13.40	ND	NR	NR
MW-2	12-16-92	21.33	7.44	13.89	ND	NR	NR
MW-2	01-15-93	21.33	6.13	15.20	ND	NR	NR
MW-2	02-16-93	21.33	6.02	15.31	ND	NR	NR
MW-2	03-30-93	21.33	5.98	15.35	ND	NR	NR
MW-2	04-28-93	21.33	6.58	14.75	ND	NR	NR
MW-2	05-13-93	21.33	6.99	14.34	ND	NR	NR
MW-2	06-17-93	21.33	7.40	13.93	ND	NR	NR
MW-2	07-28-93	21.33	7.79	13.54	ND	NR	NR
MW-2	08-17-93	21.33	7.85	13.48	ND	NR	NR
MW-2	11-08-93	21.33	8.12	13.21	ND	NR	NR
MW-2	02-14-94	21.33	6.88	14.45	ND	NR	NR
MW-2	05-05-94	21.33	7.51	13.82	ND	NR	NR
MW-2	08-04-94	21.33	8.00	13.33	ND	SW	0.004
MW-2	11-20-94	21.33	6.86	14.47	ND	SW	0.002
MW-2	03-17-95	21.33	6.12	15.21	ND	WSW	0.006
MW-2	06-01-95	21.33	6.56	14.77	ND	SW	0.003

Table 2
Historical Groundwater Elevation Data

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 08-15-95
Project Number: 0805-121.02

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground- Water Elevation ft-MSL	Floating Product Thickness feet	Ground- Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-3	07-17-90	20.84	7.03	13.81	Sheen	NR	NR
MW-3	08-07-90	20.84	7.21	13.63	ND	NR	NR
MW-3	10-15-90	20.84	^8.19	^12.65	0.75	NR	NR
MW-3	11-20-90	20.84	^7.98	^12.85	1.08	NR	NR
MW-3	12-21-90	20.84	^7.22	^13.62	0.01	NR	NR
MW-3	01-09-91	20.84	^7.46	^13.38	0.30	NR	NR
MW-3	02-27-91	20.84	^7.37	^13.47	0.02	NR	NR
MW-3	03-20-91	20.84	^^5.79	^^15.05	Sheen	NR	NR
MW-3	04-16-91	20.84	7.95	12.89	Sheen	NR	NR
MW-3	05-16-91	20.84	7.50	13.34	ND	NR	NR
MW-3	06-10-91	20.11	7.14	12.97	Sheen	NR	NR
MW-3	07-18-91	20.11	7.55	12.56	ND	NR	NR
MW-3	08-22-91	20.11	7.64	12.47	Sheen	NR	NR
MW-3	09-18-91	20.11	^7.89	^12.22	0.12	NR	NR
MW-3	10-10-91	20.11	^7.82	^12.29	0.26	NR	NR
MW-3	11-21-91	20.11	^7.59	^12.52	0.04	NR	NR
MW-3	12-24-91	20.11	^8.74	^11.37	0.01	NR	NR
MW-3	01-19-92	20.11	6.98	13.13	0.01	NR	NR
MW-3	02-20-92	20.11	5.05	15.06	0.01	NR	NR
MW-3	03-23-92	20.11	5.75	14.36	Sheen	NR	NR
MW-3	04-21-92	20.11	6.55	13.56	ND	NR	NR
MW-3	05-15-92	20.11	^7.11	^13.00	0.03	NR	NR
MW-3	06-08-92	20.11	^7.52	^12.59	0.02	NR	NR
MW-3	07-15-92	20.11	7.92	12.19	ND	NR	NR
MW-3	08-25-92	20.11	8.00	12.11	ND	NR	NR
MW-3	09-15-92	20.11	^8.01	^12.10	0.02	NR	NR
MW-3	10-28-92	20.11	8.66	11.45	ND	NR	NR
MW-3	11-16-92	20.11	7.11	13.00	Sheen	NR	NR
MW-3	12-16-92	20.11	6.62	13.49	ND	NR	NR
MW-3	01-15-93	20.11	4.44	15.67	ND	NR	NR
MW-3	02-16-93	20.11	^5.93	^14.18	0.01	NR	NR
MW-3	03-30-93	20.11	5.48	14.63	ND	NR	NR
MW-3	04-28-93	20.11	^6.02	^14.09	0.01	NR	NR
MW-3	05-13-93	20.11	^6.37	^13.74	0.01	NR	NR
MW-3	06-17-93	20.11	^6.52	^13.59	0.01	NR	NR
MW-3	07-28-93	20.11	6.95	13.16	ND	NR	NR
MW-3	08-17-93	20.11	^7.00	^13.11	0.01	NR	NR
MW-3	11-08-93	20.11	7.31	12.80	ND	NR	NR
MW-3	02-14-94	20.11	5.81	14.30	ND	NR	NR
MW-3	05-05-94	20.11	6.81	13.30	ND	NR	NR
MW-3	08-04-94	20.11	7.31	12.80	ND	SW	0.004
MW-3	11-20-94	20.11	5.88	14.23	ND	SW	0.002
MW-3	03-17-95	20.11	5.46	14.65	ND	WSW	0.006
MW-3	06-01-95	20.11	6.34	13.77	ND	SW	0.003

Table 2
Historical Groundwater Elevation Data

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 08-15-95
Project Number: 0805-121.02

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground- Water Elevation ft-MSL	Floating Product Thickness feet	Ground- Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-4	06-10-91	20.75	DRY	DRY	ND	DRY	DRY
MW-4	07-18-91	20.75	7.86	12.89	ND	NR	NR
MW-4	08-22-91	20.75	7.85	12.90	ND	NR	NR
MW-4	09-18-91	20.75	7.84	12.91	ND	NR	NR
MW-4	10-10-91	20.75	DRY	DRY	ND	DRY	DRY
MW-4	11-21-91	20.75	DRY	DRY	ND	DRY	DRY
MW-4	12-24-91	20.75	DRY	DRY	ND	DRY	DRY
MW-4	01-19-92	20.75	DRY	DRY	ND	DRY	DRY
MW-4	02-20-92	20.75	DRY	DRY	ND	DRY	DRY
MW-4	03-23-92	20.75	DRY	DRY	ND	DRY	DRY
MW-4	04-21-92	20.75	DRY	DRY	ND	DRY	DRY
MW-4	05-15-92	20.75	DRY	DRY	ND	DRY	DRY
MW-4	06-08-92	20.75	DRY	DRY	ND	DRY	DRY
MW-4	07-15-92	20.75	DRY	DRY	ND	DRY	DRY
MW-4	08-25-92	20.75	DRY	DRY	ND	DRY	DRY
MW-4	09-15-92	20.75	DRY	DRY	ND	DRY	DRY
MW-4	10-28-92	20.75	DRY	DRY	ND	DRY	DRY
MW-4	11-16-92	20.75	DRY	DRY	ND	DRY	DRY
MW-4	12-16-92	20.75	DRY	DRY	ND	DRY	DRY
MW-4	01-15-93	20.75	7.48	13.27	ND	NR	NR
MW-4	02-16-93	20.75	7.10	13.65	ND	NR	NR
MW-4	03-30-93	20.75	7.51	13.24	ND	NR	NR
MW-4	04-28-93	20.75	7.10	13.65	ND	NR	NR
MW-4	05-13-93	20.75	7.02	13.73	ND	NR	NR
MW-4	06-17-93	20.75	7.98	12.77	ND	NR	NR
MW-4	07-28-93	20.75	7.90	12.85	ND	NR	NR
MW-4	08-17-93	20.75	7.85	12.90	ND	NR	NR
MW-4	11-08-93	20.75	DRY	DRY	ND	DRY	DRY
MW-4	02-14-94	20.75	DRY	DRY	ND	DRY	DRY
MW-4	05-05-94	20.75	7.73	13.02	ND	NR	NR
MW-4	08-04-94	20.75	7.83	12.92	ND	SW	0.004
MW-4	11-20-94	20.75	7.73	13.02	ND	SW	0.002
MW-4	03-17-95	20.75	6.65	14.10	ND	WSW	0.006
MW-4	06-01-95	20.75	7.25	13.50	ND	SW	0.003

Table 2
Historical Groundwater Elevation Data

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 08-15-95
Project Number: 0805-121.02

Well Design- ation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground- Water Elevation ft-MSL	Floating Product Thickness feet	Ground- Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-5	06-10-91	20.90	7.58	13.32	ND	NR	NR
MW-5	07-18-91	20.90	7.97	12.93	ND	NR	NR
MW-5	08-22-91	20.90	8.18	12.72	ND	NR	NR
MW-5	09-18-91	20.90	8.31	12.59	ND	NR	NR
MW-5	10-10-91	20.90	8.51	12.39	Sheen	NR	NR
MW-5	11-21-91	20.90	8.13	12.77	ND	NR	NR
MW-5	12-24-91	20.90	8.32	12.58	ND	NR	NR
MW-5	01-19-92	20.90	7.50	13.40	ND	NR	NR
MW-5	02-20-92	20.90	5.97	14.93	ND	NR	NR
MW-5	03-23-92	20.90	6.06	14.84	ND	NR	NR
MW-5	04-21-92	20.90	6.90	14.00	ND	NR	NR
MW-5	05-15-92	20.90	7.32	13.58	ND	NR	NR
MW-5	06-08-92	20.90	7.66	13.24	ND	NR	NR
MW-5	07-15-92	20.90	8.34	12.56	ND	NR	NR
MW-5	08-25-92	20.90	8.18	12.72	ND	NR	NR
MW-5	09-15-92	20.90	8.40	12.50	ND	NR	NR
MW-5	10-28-92	20.90	8.83	12.07	ND	NR	NR
MW-5	11-16-92	20.90	7.70	13.20	ND	NR	NR
MW-5	12-16-92	20.90	6.92	13.98	ND	NR	NR
MW-5	01-15-93	20.90	5.52	15.38	ND	NR	NR
MW-5	02-16-93	20.90	5.64	15.26	ND	NR	NR
MW-5	03-30-93	20.90	5.56	15.34	ND	NR	NR
MW-5	04-28-93	20.90	6.28	14.62	ND	NR	NR
MW-5	05-13-93	20.90	6.68	14.22	ND	NR	NR
MW-5	06-17-93	20.90	7.07	13.83	ND	NR	NR
MW-5	07-28-93	20.90	7.41	13.49	ND	NR	NR
MW-5	08-17-93	20.90	7.49	13.41	ND	NR	NR
MW-5	11-08-93	20.90	7.93	12.97	ND	NR	NR
MW-5	02-14-94	20.90	6.49	14.41	ND	NR	NR
MW-5	05-05-94	20.90	7.18	13.72	ND	NR	NR
MW-5	08-04-94	20.90	7.83	13.07	ND	SW	0.004
MW-5	11-20-94	20.90	6.34	14.56	ND	SW	0.002
MW-5	03-17-95	20.90	5.51	15.39	ND	WSW	0.006
MW-5	06-01-95	20.90	6.55	14.35	ND	SW	0.003

Table 2
Historical Groundwater Elevation Data

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 08-15-95
Project Number: 0805-121.02

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground- Water Elevation ft-MSL	Floating Product Thickness feet	Ground- Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-6	06-10-91	22.08	DRY	DRY	ND	DRY	DRY
MW-6	07-18-91	22.08	DRY	DRY	ND	DRY	DRY
MW-6	08-22-91	22.08	DRY	DRY	ND	DRY	DRY
MW-6	09-18-91	22.08	DRY	DRY	ND	DRY	DRY
MW-6	10-10-91	22.08	DRY	DRY	ND	DRY	DRY
MW-6	11-21-91	22.08	DRY	DRY	ND	DRY	DRY
MW-6	12-24-91	22.08	DRY	DRY	ND	DRY	DRY
MW-6	01-19-92	22.08	DRY	DRY	ND	DRY	DRY
MW-6	02-20-92	22.08	7.28	14.80	ND	NR	NR
MW-6	03-23-92	22.08	7.45	14.63	ND	NR	NR
MW-6	04-21-92	22.08	7.74	14.34	ND	NR	NR
MW-6	05-15-92	22.08	DRY	DRY	ND	DRY	DRY
MW-6	06-08-92	22.08	DRY	DRY	ND	DRY	DRY
MW-6	07-15-92	22.08	DRY	DRY	ND	DRY	DRY
MW-6	08-25-92	22.08	DRY	DRY	ND	DRY	DRY
MW-6	09-15-92	22.08	DRY	DRY	ND	DRY	DRY
MW-6	10-28-92	22.08	DRY	DRY	ND	DRY	DRY
MW-6	11-16-92	22.08	DRY	DRY	ND	DRY	DRY
MW-6	12-16-92	22.08	DRY	DRY	ND	DRY	DRY
MW-6	01-15-93	22.08	7.22	14.86	ND	NR	NR
MW-6	02-16-93	22.08	6.79	15.29	ND	NR	NR
MW-6	03-30-93	22.08	6.68	15.40	ND	NR	NR
MW-6	04-28-93	22.08	7.28	14.80	ND	NR	NR
MW-6	05-13-93	22.08	7.73	14.35	ND	NR	NR
MW-6	06-17-93	22.08	8.15	13.93	ND	NR	NR
MW-6	07-28-93	22.08	DRY	DRY	ND	DRY	DRY
MW-6	08-17-93	22.08	DRY	DRY	ND	DRY	DRY
MW-6	11-08-93	22.08	DRY	DRY	ND	DRY	DRY
MW-6	02-14-94	22.08	7.78	14.30	ND	NR	NR
MW-6	05-05-94	22.08	8.24	13.84	ND	NR	NR
MW-6	08-04-94	22.08	DRY	DRY	ND	DRY	DRY
MW-6	11-20-94	22.08	7.41	14.67	ND	SW	0.002
MW-6	03-17-95	22.08	6.66	15.42	ND	WSW	0.006
MW-6	06-01-95	22.08	7.60	14.48	ND	SW	0.003

Table 2
Historical Groundwater Elevation Data

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 08-15-95
Project Number: 0805-121.02

Well Design- ation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground- Water Elevation ft-MSL	Floating Product Thickness feet	Ground- Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-7	06-10-91	22.89	DRY	DRY	ND	DRY	DRY
MW-7	07-18-91	22.89	DRY	DRY	ND	DRY	DRY
MW-7	08-22-91	22.89	DRY	DRY	ND	DRY	DRY
MW-7	09-18-91	22.89	DRY	DRY	ND	DRY	DRY
MW-7	10-10-91	22.89	DRY	DRY	ND	DRY	DRY
MW-7	11-21-91	22.89	DRY	DRY	ND	DRY	DRY
MW-7	12-24-91	22.89	DRY	DRY	ND	DRY	DRY
MW-7	01-19-92	22.89	DRY	DRY	ND	DRY	DRY
MW-7	02-20-92	22.89	8.74	14.15	ND	NR	NR
MW-7	03-23-92	22.89	8.20	14.69	ND	NR	NR
MW-7	04-21-92	22.89	8.86	14.03	ND	NR	NR
MW-7	05-15-92	22.89	DRY	DRY	ND	DRY	DRY
MW-7	06-08-92	22.89	DRY	DRY	ND	DRY	DRY
MW-7	07-15-92	22.89	DRY	DRY	ND	DRY	DRY
MW-7	08-25-92	22.89	DRY	DRY	ND	DRY	DRY
MW-7	09-15-92	22.89	DRY	DRY	ND	DRY	DRY
MW-7	10-28-92	22.89	^^10.38	12.51	ND	NR	NR
MW-7	11-16-92	22.89	DRY	DRY	ND	DRY	DRY
MW-7	12-16-92	22.89	DRY	DRY	ND	DRY	DRY
MW-7	01-15-93	22.89	8.37	14.52	ND	NR	NR
MW-7	02-16-93	22.89	7.84	15.05	ND	NR	NR
MW-7	03-30-93	22.89	8.03	14.86	ND	NR	NR
MW-7	04-28-93	22.89	8.33	14.56	ND	NR	NR
MW-7	05-13-93	22.89	8.56	14.33	ND	NR	NR
MW-7	06-17-93	22.89	9.30	13.59	ND	NR	NR
MW-7	07-28-93	22.89	DRY	DRY	ND	DRY	DRY
MW-7	08-17-93	22.89	DRY	DRY	ND	DRY	DRY
MW-7	11-08-93	22.89	DRY	DRY	ND	DRY	DRY
MW-7	02-14-94	22.89	8.80	14.09	ND	NR	NR
MW-7	05-05-94	22.89	9.11	13.78	ND	NR	NR
MW-7	08-04-94	22.89	DRY	DRY	ND	DRY	DRY
MW-7	11-20-94	22.89	8.72	14.17	ND	SW	0.002
MW-7	03-17-95	22.89	7.68	15.21	ND	WSW	0.006
MW-7	06-01-95	22.89	8.40	14.49	ND	SW	0.003

Table 2
Historical Groundwater Elevation Data

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 08-15-95
Project Number: 0805-121.02

Well Design- ation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground- Water Elevation ft-MSL	Floating Product Thickness feet	Ground- Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-8	06-10-91	20.97	7.80	13.17	ND	NR	NR
MW-8	07-18-91	20.97	8.36	12.61	ND	NR	NR
MW-8	08-22-91	20.97	8.53	12.44	ND	NR	NR
MW-8	09-18-91	20.97	8.68	12.29	ND	NR	NR
MW-8	10-10-91	20.97	8.87	12.10	ND	NR	NR
MW-8	11-21-91	20.97	8.43	12.54	ND	NR	NR
MW-8	12-24-91	20.97	8.68	12.29	ND	NR	NR
MW-8	01-19-92	20.97	7.73	13.24	ND	NR	NR
MW-8	02-20-92	20.97	5.57	15.40	ND	NR	NR
MW-8	03-23-92	20.97	5.81	15.16	ND	NR	NR
MW-8	04-21-92	20.97	7.05	13.92	ND	NR	NR
MW-8	05-15-92	20.97	7.79	13.18	ND	NR	NR
MW-8	06-08-92	20.97	8.01	12.96	ND	NR	NR
MW-8	07-15-92	20.97	8.46	12.51	ND	NR	NR
MW-8	08-25-92	20.97	8.64	12.33	ND	NR	NR
MW-8	09-15-92	20.97	8.80	12.17	ND	NR	NR
MW-8	10-28-92	20.97	8.80	12.17	ND	NR	NR
MW-8	11-16-92	20.97	8.19	12.78	ND	NR	NR
MW-8	12-16-92	20.97	6.66	14.31	ND	NR	NR
MW-8	01-15-93	20.97	5.18	15.79	ND	NR	NR
MW-8	02-16-93	20.97	5.84	15.13	ND	NR	NR
MW-8	03-30-93	20.97	4.98	15.99	ND	NR	NR
MW-8	04-28-93	20.97	6.17	14.80	ND	NR	NR
MW-8	05-13-93	20.97	6.93	14.04	ND	NR	NR
MW-8	06-17-93	20.97	7.36	13.61	ND	NR	NR
MW-8	07-28-93	20.97	7.80	13.17	ND	NR	NR
MW-8	08-17-93	20.97	7.87	13.10	ND	NR	NR
MW-8	11-08-93	20.97	8.31	12.66	ND	NR	NR
MW-8	02-14-94	20.97	7.00	13.97	ND	NR	NR
MW-8	05-05-94	20.97	7.46	13.51	ND	NR	NR
MW-8	08-04-94	20.97	8.17	12.80	ND	SW	0.004
MW-8	11-20-94	20.97	6.78	14.19	ND	SW	0.002
MW-8	03-17-95	20.97	6.14	14.83	ND	WSW	0.006
MW-8	06-01-95	20.97	6.50	14.47	ND	SW	0.003

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Historical Groundwater Elevation Data

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 08-15-95
Project Number: 0805-121.02

Well Design- ation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground- Water Elevation ft-MSL	Floating Product Thickness feet	Ground- Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-9	06-11-93	20.89	8.15	12.74	ND	NR	NR
MW-9	07-28-93	20.89	8.49	12.40	ND	NR	NR
MW-9	08-17-93	20.89	8.53	12.36	ND	NR	NR
MW-9	11-08-93	20.89	8.87	12.02	ND	NR	NR
MW-9	02-14-94	20.89	7.47	13.42	ND	NR	NR
MW-9	05-05-94	20.89	8.04	12.85	ND	NR	NR
MW-9	08-04-94	20.89	8.78	12.11	ND	SW	0.004
MW-9	11-20-94	20.89	6.83	14.06	ND	SW	0.002
MW-9	03-17-95	20.89	6.94	13.95	ND	WSW	0.006
MW-9	06-01-95	20.89	8.15	12.74	ND	SW	0.003
MW-10	06-11-93	21.12	8.14	12.98	ND	NR	NR
MW-10	07-28-93	21.12	8.43	12.69	ND	NR	NR
MW-10	08-17-93	21.12	8.54	12.58	ND	NR	NR
MW-10	11-08-93	21.12	8.70	12.42	ND	NR	NR
MW-10	02-14-94	21.12	7.13	13.99	ND	NR	NR
MW-10	05-05-94	21.12	8.08	13.04	ND	NR	NR
MW-10	08-04-94	21.12	8.84	12.28	ND	SW	0.004
MW-10	11-20-94	21.12	7.05	14.07	ND	SW	0.002
MW-10	03-17-95	21.12	6.26	14.86	ND	WSW	0.006
MW-10	06-01-95	21.12	7.63	13.49	ND	SW	0.003
MW-11	11-16-92	22.38	9.02	13.36	ND	NR	NR
MW-11	12-16-92	22.38	8.48	13.90	ND	NR	NR
MW-11	01-15-93	22.38	7.14	15.24	ND	NR	NR
MW-11	02-16-93	22.38	7.11	15.27	ND	NR	NR
MW-11	03-30-93	22.38	7.01	15.37	ND	NR	NR
MW-11	04-28-93	22.38	7.62	14.76	ND	NR	NR
MW-11	05-13-93	22.38	8.04	14.34	ND	NR	NR
MW-11	06-17-93	22.38	8.44	13.94	ND	NR	NR
MW-11	07-28-93	22.38	8.80	13.58	ND	NR	NR
MW-11	08-17-93	22.38	8.78	13.60	ND	NR	NR
MW-11	11-08-93	22.38	9.23	13.15	ND	NR	NR
MW-11	02-14-94	22.38	7.94	14.44	ND	NR	NR
MW-11	05-05-94	22.38	8.55	13.83	ND	NR	NR
MW-11	08-04-94	22.38	9.13	13.25	ND	SW	0.004
MW-11	11-20-94	22.38	7.73	14.65	ND	SW	0.002
MW-11	03-17-95	22.38	6.94	15.44	ND	WSW	0.006
MW-11	06-01-95	22.38	7.90	14.48	ND	SW	0.003

Table 2
Historical Groundwater Elevation Data

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 08-15-95
Project Number: 0805-121.02

Well Design- ation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground- Water Elevation ft-MSL	Floating Product Thickness feet	Ground- Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-12	11-16-92	22.77	9.65	13.12	ND	NR	NR
MW-12	12-16-92	22.77	8.71	14.06	ND	NR	NR
MW-12	01-15-93	22.77	7.19	15.58	ND	NR	NR
MW-12	02-16-93	22.77	7.88	14.89	ND	NR	NR
MW-12	03-30-93	22.77	7.43	15.34	ND	NR	NR
MW-12	04-28-93	22.77	8.22	14.55	ND	NR	NR
MW-12	05-13-93	22.77	8.63	14.14	ND	NR	NR
MW-12	06-17-93	22.77	8.98	13.79	ND	NR	NR
MW-12	07-28-93	22.77	9.32	13.45	ND	NR	NR
MW-12	08-17-93	22.77	9.30	13.47	ND	NR	NR
MW-12	11-08-93	22.77	9.72	13.05	ND	NR	NR
MW-12	02-14-94	22.77	8.24	14.53	ND	NR	NR
MW-12	05-05-94	22.77	8.97	13.80	ND	NR	NR
MW-12	08-04-94	22.77	9.57	13.20	ND	SW	0.004
MW-12	11-20-94	22.77	8.06	14.71	ND	SW	0.002
MW-12	03-17-95	22.77	7.09	15.68	ND	WSW	0.006
MW-12	06-01-95	22.77	8.40	14.37	ND	SW	0.003
MW-13	11-16-92	22.45	9.02	13.43	ND	NR	NR
MW-13	12-16-92	22.45	8.23	14.22	ND	NR	NR
MW-13	01-15-93	22.45	6.89	15.56	ND	NR	NR
MW-13	02-16-93	22.45	7.14	15.31	ND	NR	NR
MW-13	03-30-93	22.45	7.01	15.44	ND	NR	NR
MW-13	04-28-93	22.45	7.57	14.88	ND	NR	NR
MW-13	05-13-93	22.45	7.95	14.50	ND	NR	NR
MW-13	06-17-93	22.45	8.32	14.13	ND	NR	NR
MW-13	07-28-93	22.45	8.59	13.86	ND	NR	NR
MW-13	08-17-93	22.45	8.57	13.88	ND	NR	NR
MW-13	11-08-93	22.45	8.86	13.59	ND	NR	NR
MW-13	02-14-94	22.45	7.78	14.67	ND	NR	NR
MW-13	05-05-94	22.45	8.38	14.07	ND	NR	NR
MW-13	08-04-94	22.45	8.78	13.67	ND	SW	0.004
MW-13	11-20-94	22.45	7.68	14.77	ND	SW	0.002
MW-13	03-17-95	22.45	6.91	15.54	ND	WSW	0.006
MW-13	06-01-95	22.45	7.72	14.73	ND	SW	0.003

Table 2
Historical Groundwater Elevation Data

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 08-15-95
Project Number: 0805-121.02

Well Design- ation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground- Water Elevation ft-MSL	Floating Product Thickness feet	Ground- Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-14	09-15-92	22.99	10.66	12.33	ND	NR	NR
MW-14	10-28-92	22.99	10.91	12.08	ND	NR	NR
MW-14	11-16-92	22.99	10.33	12.66	ND	NR	NR
MW-14	12-16-92	22.99	9.20	13.79	ND	NR	NR
MW-14	01-15-93	22.99	7.06	15.93	ND	NR	NR
MW-14	02-16-93	22.99	8.18	14.81	ND	NR	NR
MW-14	03-30-93	22.99	7.97	15.02	ND	NR	NR
MW-14	04-28-93	22.99	8.63	14.36	ND	NR	NR
MW-14	05-13-93	22.99	9.05	13.94	ND	NR	NR
MW-14	06-17-93	22.99	9.55	13.44	ND	NR	NR
MW-14	07-28-93	22.99	9.89	13.10	ND	NR	NR
MW-14	08-17-93	22.99	9.90	13.09	ND	NR	NR
MW-14	11-08-93	22.99	10.25	12.74	ND	NR	NR
MW-14	02-14-94	22.99	8.80	14.19	ND	NR	NR
MW-14	05-05-94	22.99	9.49	13.50	ND	NR	NR
MW-14	08-04-94	22.99	10.11	12.88	ND	SW	0.004
MW-14	11-20-94	22.99	8.66	14.33	ND	SW	0.002
MW-14	03-17-95	22.99	8.17	14.82	ND	WSW	0.006
MW-14	06-01-95	22.99	8.57	14.42	ND	SW	0.003
MW-15	04-28-93	19.19	5.51	13.68	ND	NR	NR
MW-15	05-13-93	19.19	5.91	13.28	ND	NR	NR
MW-15	06-17-93	19.19	6.18	13.01	ND	NR	NR
MW-15	07-28-93	19.19	6.45	12.74	ND	NR	NR
MW-15	08-17-93	19.19	6.54	12.65	ND	NR	NR
MW-15	11-08-93	19.19	6.98	12.21	ND	NR	NR
MW-15	02-14-94	19.19	5.44	13.75	ND	NR	NR
MW-15	05-05-94	19.19	6.18	13.01	ND	NR	NR
MW-15	08-04-94	19.19	6.84	12.35	ND	SW	0.004
MW-15	11-20-94	19.19	5.31	13.88	ND	SW	0.002
MW-15	03-17-95	19.19	5.21	13.98	ND	WSW	0.006
MW-15	06-01-95	19.19	5.84	13.35	ND	SW	0.003

TOC: top of casing

ft-MSL: elevation in feet, relative to mean sea level

MWN: ground-water flow direction and gradient apply to the entire monitoring well network

NR: not reported; data not available or not measurable

ND: none detected

^: groundwater elevation (GWE) and depth to water (DTW) adjusted to include 80 percent of the floating product thickness (FPT):

[GWE: (TOC - DTW) + (FPT x 0.8)]

^^: anomalous data

SW: southwest

WSW: west-southwest

DRY: dry well; groundwater was not detected

Table 3
Historical Groundwater Analytical Data

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 08-14-95
Project Number: 0805-121.02

Well Design- ation	Water Sample Field Date	TPHG µg/L	Benzene µg/L	Toluene µg/L	Ethyl- benzene µg/L	Total Xylenes µg/L
MW-1	07-18-90	Not sampled: well contained floating product				
MW-1	10-15-90	Not sampled: well contained floating product				
MW-1	01-09-91	Not sampled: well contained floating product				
MW-1	04-16-91	Not sampled: well contained floating product				
MW-1	06-10-91	Not sampled: well contained floating product				
MW-1	10-10-91	Not sampled: well contained floating product				
MW-1	03-23-92	Not sampled: well contained floating product				
MW-1	06-08-92	Not sampled: well contained floating product				
MW-1	09-15-92	Not sampled: well contained floating product				
MW-1	11-16-92	Not sampled: well contained floating product				
MW-1	02-16-93	Not sampled: well contained floating product				
MW-1	05-13-93	Not sampled: well contained floating product				
MW-1	08-17-93	Not sampled: well contained floating product				
MW-1	11-08-93	Not sampled: well contained floating product				
MW-1	02-14-94	Not sampled: well contained floating product				
MW-1	05-05-94	Not sampled: well contained floating product				
MW-1	08-04-94	Not sampled: well contained floating product				
MW-1	11-20-94	Not sampled: well contained floating product				
MW-1	03-17-95	120000	5300	370	1500	13000
MW-1	06-01-95	250000	7100	950	3500	21000
MW-2	07-18-90	35000	3800	2900	690	3600
MW-2	10-15-90	6400	650	290	110	560
MW-2	01-09-91	13000	1500	970	390	1500
MW-2	04-16-91	54000	5200	9000	1500	7700
MW-2	06-10-91	26000	3000	2500	880	4200
MW-2	10-10-91	10000	1600	910	280	1400
MW-2	03-23-92	33000	4100	5000	1100	5300
MW-2	06-08-92	18000	1200	980	330	1800
MW-2	09-15-92	13000	430	500	340	1800
MW-2	11-16-92	13000	900	940	300	1400
MW-2	02-16-93	20000	1800	1200	530	2700
MW-2	05-13-93	13000	1000	470	370	1900
MW-2	08-17-93	9100	770	160	310	1500
MW-2	11-08-93	9200	380	62	130	630
MW-2	02-14-94	8700	670	370	50	1400
MW-2	05-05-94	5600	390	140	120	480
MW-2	08-04-94	2300	180	<2.5*	<2.5*	230
MW-2	11-20-94	4900	170	150	120	390
MW-2	03-17-95	10000	460	77	260	550
MW-2	06-01-95	13000	400	78	210	410

Table 3
Historical Groundwater Analytical Data

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 08-14-95
Project Number: 0805-121.02

Well Designation	Water Sample Field Date	TPHG µg/L	Benzene µg/L	Toluene µg/L	Ethyl- benzene µg/L	Total Xylenes µg/L
MW-3	07-18-90	NA	NA	NA	NA	NA
MW-3	10-15-90	Not sampled: well contained floating product				
MW-3	01-09-91	Not sampled: well contained floating product				
MW-3	04-16-91	Not sampled: well contained floating product				
MW-3	06-10-91	Not sampled: well contained floating product				
MW-3	10-10-91	Not sampled: well contained floating product				
MW-3	03-23-92	Not sampled: well contained floating product				
MW-3	06-08-92	Not sampled: well contained floating product				
MW-3	09-15-92	Not sampled: well contained floating product				
MW-3	11-16-92	Not sampled: well contained floating product				
MW-3	02-16-93	Not sampled: well contained floating product				
MW-3	05-13-93	Not sampled: well contained floating product				
MW-3	08-17-93	Not sampled: well contained floating product				
MW-3	11-08-93	430000	4100	14000	6400	37000
MW-3	02-14-94	85000	4200	12000	2500	16000
MW-3	05-05-94	560000	4600	14000	5300	40000
MW-3	08-04-94	64000	4200	7600	1700	12000
MW-3	11-20-94	80000	4700	9700	2400	15000
MW-3	03-17-95	370000	4800	12000	5800	34000
MW-3	06-01-95	270000	6000	11000	5200	28000
MW-4	06-10-91	Not sampled: dry well				
MW-4	10-10-91	15000	5300	1500	470	1300
MW-4	03-23-92	24000	5600	4000	580	3100
MW-4	06-08-92	5700	2000	170	92	270
MW-4	09-15-92	Not sampled: dry well				
MW-4	11-16-92	Not sampled: dry well				
MW-4	02-16-93	12000	920	1100	130	750
MW-4	05-13-93	19000	2900	2800	360	1900
MW-4	08-17-93	8100	1600	1300	170	730
MW-4	11-08-93	2000	540	110	10	240
MW-4	02-14-94	Not sampled: dry well				
MW-4	05-05-94	1900	510	78	31	150
MW-4	08-04-94	1300	360	17	<5*	190
MW-4	11-20-94	<50	2.9	0.5	<0.5	1.4
MW-4	03-17-95	16000	1800	970	310	2500
MW-4	06-01-95	16000	2800	870	380	2700

Table 3
Historical Groundwater Analytical Data

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 08-14-95
Project Number: 0805-121.02

Well Designation	Water Sample Field Date	TPHG µg/L	Benzene µg/L	Toluene µg/L	Ethyl- benzene µg/L	Total Xylenes µg/L
MW-5	06-10-91	100000	25000	20000	2600	12000
MW-5	10-10-91	Not sampled: well contained floating product				
MW-5	03-23-92	150000	24000	31000	4400	23000
MW-5	06-08-92	120000	17000	13000	2400	11000
MW-5	09-15-92	Not sampled: floating product entered the well during purging				
MW-5	11-16-92	110000	16000	16000	3200	18000
MW-5	02-16-93	150000	12000	15000	3000	17000
MW-5	05-13-93	Not sampled: floating product entered the well during purging				
MW-5	08-17-93	87000	15000	8500	1900	11000
MW-5	11-08-93	87000	12000	8300	2000	12000
MW-5	02-14-94	46000	7300	5300	940	5200
MW-5	05-05-94	54000	9700	4700	1000	6400
MW-5	08-04-94	57000	14000	3200	1200	7200
MW-5	11-20-94	33000	5700	1800	720	4700
MW-5	03-17-95	48000	6400	2000	740	5100
MW-5	06-01-95	76000	11000	5400	1400	7700
MW-6	06-10-91	Not sampled: dry well				
MW-6	10-10-91	Not sampled: dry well				
MW-6	03-23-92	75000	19000	10000	1600	8600
MW-6	06-08-92	Not sampled: dry well				
MW-6	09-15-92	Not sampled: dry well				
MW-6	11-16-92	Not sampled: dry well				
MW-6	02-16-93	65000	14000	3500	1300	6100
MW-6	05-13-93	36000	8200	870	1000	5200
MW-6	08-17-93	Not sampled: dry well				
MW-6	11-08-93	Not sampled: dry well				
MW-6	02-14-94	47000	14000	390	1000	5100
MW-6	05-05-94	45000	14000	<200*	1300	4500
MW-6	08-04-94	Not sampled: dry well				
MW-6	11-20-94	30000	11000	<100*	1200	2300
MW-6	03-17-95	45000	9300	<100*	1900	3600
MW-6	06-01-95	23000	5600	<50*	1300	1900

Table 3
Historical Groundwater Analytical Data

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 08-14-95
Project Number: 0805-121.02

Well Designation	Water Sample Field Date	TPHG µg/L	Benzene µg/L	Toluene µg/L	Ethyl- benzene µg/L	Total Xylenes µg/L
MW-7	06-10-91	Not sampled: dry well				
MW-7	10-10-91	Not sampled: dry well				
MW-7	03-23-92	270	10	0.5	3	13
MW-7	06-08-92	Not sampled: dry well				
MW-7	09-15-92	Not sampled: dry well				
MW-7	11-16-92	Not sampled: dry well				
MW-7	02-16-93	120	3.6	<0.5	<0.5	1.2
MW-7	05-13-93	<50	0.8	<0.5	<0.5	<0.5
MW-7	08-17-93	Not sampled: dry well				
MW-7	11-08-93	Not sampled: dry well				
MW-7	02-14-94	<50	<0.5	<0.5	<0.5	<0.5
MW-7	05-05-94	<50	<0.5	<0.5	<0.5	<0.5
MW-7	08-04-94	Not sampled: dry well				
MW-7	11-20-94	<50	<0.5	<0.5	<0.5	<0.5
MW-7	03-17-95	<50	<0.5	<0.5	<0.5	<0.5
MW-7	06-01-95	<50	<0.5	<0.5	<0.5	<0.5
MW-8	06-10-91	5800	73	7.2	150	21
MW-8	10-10-91	2800	31	6.1	4.5	3.9
MW-8	03-23-92	8000	18	<5.0*	320	42
MW-8	06-08-92	4000	<10*	<10*	110	<10*
MW-8	09-15-92	4200	6.4	<5*	120	<5*
MW-8	11-16-92	2600	4	<2.5*	21	5.2
MW-8	02-16-93	8700	<5*	<5*	200	<5*
MW-8	05-13-93	2300	<5*	<5*	42	<5*
MW-8	08-17-93	1700	1.8	<1.3*	16	1.2
MW-8	11-08-93	1200	2.4	<1*	19	2.3
MW-8	02-14-94	3600	3	<1*	72	<1*
MW-8	05-05-94	2100	<2.5*	<2.5*	8.3	<2.5*
MW-8	08-04-94	1200	1.5	<1*	6.7	<1*
MW-8	11-20-94	2300	1.2	1.1	20	2.2
MW-8	03-17-95	5400	<5*	<5*	35	<5*
MW-8	06-01-95	2600	<2.5*	<2.5*	15	<2.5*

Table 3
Historical Groundwater Analytical Data

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 08-14-95
Project Number: 0805-121.02

Well Designation	Water Sample Field Date	TPHG µg/L	Benzene µg/L	Toluene µg/L	Ethyl- benzene µg/L	Total Xylenes µg/L
MW-9	06-11-93	<50	<0.5	<0.5	<0.5	<0.5
MW-9	08-17-93	<50	<0.5	<0.5	<0.5	<0.5
MW-9	11-08-93	<50	<0.5	<0.5	<0.5	<0.5
MW-9	02-14-94	<50	<0.5	<0.5	<0.5	<0.5
MW-9	05-05-94	<50	<0.5	<0.5	<0.5	<0.5
MW-9	08-04-94	<50	<0.5	<0.5	<0.5	<0.5
MW-9	11-20-94	<50	<0.5	<0.5	<0.5	<0.5
MW-9	03-17-95	<50	<0.5	<0.5	<0.5	<0.5
MW-9	06-01-95	<50	<0.5	<0.5	<0.5	<0.5
MW-10	06-11-93	<50	<0.5	<0.5	<0.5	<0.5
MW-10	08-17-93	<50	<0.5	<0.5	<0.5	<0.5
MW-10	11-08-93	<50	<0.5	<0.5	<0.5	<0.5
MW-10	02-14-94	<50	<0.5	<0.5	<0.5	<0.5
MW-10	05-05-94	<50	<0.5	<0.5	<0.5	<0.5
MW-10	08-04-94	<50	<0.5	<0.5	<0.5	<0.5
MW-10	11-20-94	<50	<0.5	<0.5	<0.5	<0.5
MW-10	03-17-95	<50	<0.5	<0.5	<0.5	<0.5
MW-10	06-01-95	<50	<0.5	<0.5	<0.5	<0.5
MW-11	11-16-92	7000	21	<10*	18	230
MW-11	02-16-93	2200	<10*	<10*	11	<10*
MW-11	05-13-93	1600	<2.5*	<2.5*	41	6.8
MW-11	08-17-93	830	1.4	<1.0*	25	15
MW-11	11-08-93	370	<1.0*	<1.0*	2.5	2.1
MW-11	02-14-94	650	<1*	<1*	2	4
MW-11	05-05-94	210	<0.5	<0.5	2.5	0.6
MW-11	08-04-94	390	<0.5	<0.7*	1.9	2.2
MW-11	11-20-94	1300	1.3	0.5	1.5	21
MW-11	03-17-95	100	<0.5	<0.5	<0.5	<0.5
MW-11	06-01-95	210	<0.5	<0.5	0.9	0.7

Table 3
Historical Groundwater Analytical Data

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 08-14-95
Project Number: 0805-121.02

Well Designation	Water Sample Field Date	TPHG µg/L	Benzene µg/L	Toluene µg/L	Ethyl- benzene µg/L	Total Xylenes µg/L
MW-12	11-16-92	<50	<0.5	<0.5	<0.5	<0.5
MW-12	02-16-93	<50	<0.5	<0.5	<0.5	<0.5
MW-12	05-13-93	<50	<0.5	<0.5	<0.5	<0.5
MW-12	08-17-93	<50	<0.5	<0.5	<0.5	<0.5
MW-12	11-08-93	<50	<0.5	<0.5	<0.5	<0.5
MW-12	02-14-94	<50	<0.5	<0.5	<0.5	<0.5
MW-12	05-05-94	<50	<0.5	<0.5	<0.5	<0.5
MW-12	08-04-94	<50	<0.5	<0.5	<0.5	<0.5
MW-12	11-20-94	<50	<0.5	<0.5	<0.5	<0.5
MW-12	03-17-95	<50	<0.5	<0.5	<0.5	<0.5
MW-12	06-01-95	Not sampled: not scheduled for chemical analysis				
MW-13	11-16-92	<50	<0.5	<0.5	<0.5	<0.5
MW-13	02-16-93	<50	<0.5	<0.5	<0.5	<0.5
MW-13	05-13-93	<50	<0.5	<0.5	<0.5	<0.5
MW-13	08-17-93	<50	<0.5	<0.5	<0.5	<0.5
MW-13	11-08-93	<50	<0.5	<0.5	<0.5	<0.5
MW-13	02-14-94	<50	<0.5	<0.5	<0.5	<0.5
MW-13	05-05-94	<50	<0.5	<0.5	<0.5	<0.5
MW-13	08-04-94	<50	<0.5	<0.5	<0.5	<0.5
MW-13	11-20-94	<50	<0.5	<0.5	<0.5	<0.5
MW-13	03-17-95	<50	<0.5	<0.5	<0.5	<0.5
MW-13	06-01-95	Not sampled: not scheduled for chemical analysis				
MW-14	09-15-92	<50	<0.5	<0.5	<0.5	<0.5
MW-14	11-16-92	<50	<0.5	<0.5	<0.5	<0.5
MW-14	02-16-93	<50	<0.5	<0.5	<0.5	<0.5
MW-14	05-13-93	<50	<0.5	<0.5	<0.5	<0.5
MW-14	08-17-93	<50	<0.5	<0.5	<0.5	<0.5
MW-14	11-08-93	<50	<0.5	<0.5	<0.5	<0.5
MW-14	02-14-94	<50	<0.5	<0.5	<0.5	<0.5
MW-14	05-05-94	<50	<0.5	<0.5	<0.5	<0.5
MW-14	08-04-94	<50	<0.5	<0.5	<0.5	<0.5
MW-14	11-20-94	<50	<0.5	<0.5	<0.5	<0.5
MW-14	03-17-95	<50	<0.5	<0.5	<0.5	<0.5
MW-14	06-01-95	Not sampled: not scheduled for chemical analysis				

Table 3
Historical Groundwater Analytical Data

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 08-14-95
Project Number: 0805-121.02

Well Designation	Water Sample Field Date	TPHG µg/L	Benzene µg/L	Toluene µg/L	Ethyl- benzene µg/L	Total Xylenes µg/L
MW-15	05-13-93	<50	<0.5	<0.5	<0.5	<0.5
MW-15	08-17-93	<50	<0.5	<0.5	<0.5	<0.5
MW-15	11-08-93	<50	<0.5	<0.5	<0.5	<0.5
MW-15	02-14-94	<50	<0.5	<0.5	<0.5	<0.5
MW-15	05-05-94	<50	<0.5	<0.5	<0.5	<0.5
MW-15	08-04-94	<50	<0.5	<0.5	<0.5	<0.5
MW-15	11-20-94	<50	<0.5	<0.5	<0.5	<0.5
MW-15	03-17-95	<50	<0.5	<0.5	<0.5	<0.5
MW-15	06-01-95	Not sampled: not scheduled for chemical analysis				

TPHG: total petroleum hydrocarbons as gasoline

µg/L: micrograms per liter

NA: not analyzed

*: method reporting limit was raised due to: (1) high analyte concentration requiring sample dilution, or (2) matrix interference

Table 4
Historical Groundwater Analytical Data

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 07-10-95
Project Number: 0805-121.02

Well Desig- nation	Water Sample Field Date	TRPH	TPHD	Cadmium by EPA 6010	Chromium by EPA 6010	Lead by EPA 7421	Nickel by EPA 6010	Zinc by EPA 6010
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-1	07-18-90	Not sampled: well contained floating product						
MW-1	10-15-90	Not sampled: well contained floating product						
MW-1	01-09-91	Not sampled: well contained floating product						
MW-1	04-16-91	Not sampled: well contained floating product						
MW-1	06-10-91	Not sampled: well contained floating product						
MW-1	10-10-91	Not sampled: well contained floating product						
MW-1	03-23-92	Not sampled: well contained floating product						
MW-1	06-08-92	Not sampled: well contained floating product						
MW-1	09-15-92	Not sampled: well contained floating product						
MW-1	11-16-92	Not sampled: well contained floating product						
MW-1	02-16-93	Not sampled: well contained floating product						
MW-1	05-13-93	Not sampled: well contained floating product						
MW-1	08-17-93	Not sampled: well contained floating product						
MW-1	11-08-93	Not sampled: well contained floating product						
MW-1	02-14-94	Not sampled: well contained floating product						
MW-1	05-05-94	Not sampled: well contained floating product						
MW-1	08-04-94	Not sampled: well contained floating product						
MW-1	11-20-94	Not sampled: well contained floating product						
MW-1	03-17-95	48000	6200^	<5	20	20	<40	60
MW-1	06-01-95	38000	190000^	<5	20	22	70	100
MW-2	07-18-90	<5000	850*	<20	<50	50	NA	120
MW-2	10-15-90	NA	NA	NA	NA	NA	NA	NA
MW-2	01-09-91	NA	NA	NA	NA	NA	NA	NA
MW-2	04-16-91	NA	NA	NA	NA	NA	NA	NA
MW-2	06-10-91	NA	NA	NA	NA	NA	NA	NA
MW-2	10-10-91	<5000	NA	<10	<10	11	72	91
MW-2	03-23-92	Not analyzed: sampling for additional parameters was discontinued						
MW-3	07-18-90	<5000	NA	NA	NA	NA	NA	NA
MW-3	10-15-90	Not sampled: well contained floating product						
MW-3	01-09-91	Not sampled: well contained floating product						
MW-3	04-16-91	Not sampled: well contained floating product						
MW-3	06-10-91	Not sampled: well contained floating product						
MW-3	10-10-91	Not sampled: well contained floating product						
MW-3	03-23-92	Not analyzed: sampling for additional parameters was discontinued						

Table 4
Historical Groundwater Analytical Data

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 07-10-95
Project Number: 0805-121.02

Well Designation	Water Sample Field Date	TRPH	TPHD	Cadmium by EPA 6010	Chromium by EPA 6010	Lead by EPA 7421	Nickel by EPA 6010	Zinc by EPA 6010
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-5	06-10-91	NA	NA	NA	NA	NA	NA	NA
MW-5	10-10-91	Not sampled: well contained floating product						
MW-5	03-23-92	NA	NA	NA	NA	28	NA	NA
MW-5	06-08-92	Not analyzed: sampling for additional parameters was discontinued						
MW-8	06-10-91	<5000	NA	NA	NA	NA	NA	NA
MW-8	10-10-91	NA	NA	NA	NA	NA	NA	NA
MW-8	03-23-92	NA	NA	NA	NA	NA	NA	NA
MW-8	06-08-92	NA	NA	NA	NA	NA	NA	NA
MW-8	09-15-92	NA	460*	ND	59	18	78	128
MW-8	11-16-92	1200	1100*	7	42	20	69	123
MW-8	02-16-93	150000	5300*	<3	7	4	24	54
MW-8	05-13-93	2000	2300*	<3	17	10	31	49
MW-8	08-17-93	1200	1000*	<5	16	7	<40	180
MW-8	11-08-93	4200	<1000	<5	50	25	60	100
MW-8	02-14-94	2000	3900*	<5	<10	4	<40	20
MW-8	05-05-94	700	440*	<3	<5	4	<20	60
MW-8	08-04-94	700	<50	<3	6	3	<20	27
MW-8	11-20-94	<500	2100*	<3	<5	<2	<20	14
MW-8	03-17-95	Not analyzed: well MW-1 was sampled for additional parameters in lieu of well MW-8						
MW-8	06-01-95	Not analyzed: well MW-1 was sampled for additional parameters in lieu of well MW-8						

TRPH: total recoverable petroleum hydrocarbons by USEPA Method 418.1

TPHD: total petroleum hydrocarbons as diesel by USEPA Method 3510/California DHS LUFT Method

µg/L: micrograms per liter

^: chromatogram fingerprint is not characteristic of diesel; however, hydrocarbons in the gasoline time range were detected at the reported level

NA: not analyzed

ND: none detected at or above the method reporting limit

Table 5
Historical Groundwater Analytical Data

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 07-10-95
Project Number: 0805-121.02

Well	Water Sample	Volatile Organic Compounds by EPA Method 601/8010 or 624/8240							Semivolatile Organic Compounds by EPA Method 3520/8270				
		Methylene	1,2-Di-	1,1-Di-	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Naphth- alene	2-Methyl- naphth- alene	Bis (2- ethylhexyl) Phthalate	Phenol	2,4-Di- methyl- phenol
		Chloride	chloro- ethane	chloro- ethane									
Design- ation	Field Date	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-1	07-18-90	Not sampled: well contained floating product											
MW-1	10-15-90	Not sampled: well contained floating product											
MW-1	01-09-91	Not sampled: well contained floating product											
MW-1	04-16-91	Not sampled: well contained floating product											
MW-1	06-10-91	Not sampled: well contained floating product											
MW-1	10-10-91	Not sampled: well contained floating product											
MW-1	03-23-92	Not sampled: well contained floating product											
MW-1	06-08-92	Not sampled: well contained floating product											
MW-1	09-15-92	Not sampled: well contained floating product											
MW-1	11-16-92	Not sampled: well contained floating product											
MW-1	02-16-93	Not sampled: well contained floating product											
MW-1	05-13-93	Not sampled: well contained floating product											
MW-1	08-17-93	Not sampled: well contained floating product											
MW-1	11-08-93	Not sampled: well contained floating product											
MW-1	02-14-94	Not sampled: well contained floating product											
MW-1	05-05-94	Not sampled: well contained floating product											
MW-1	08-04-94	Not sampled: well contained floating product											
MW-1	11-20-94	Not sampled: well contained floating product											
MW-1	03-17-95	NA	NA	NA	NA	NA	NA	NA	1300	730	<50	ND	150
MW-1	06-01-95	NA	NA	NA	NA	NA	NA	NA	2200	1700	<100	240	<100
MW-2	10-15-90	18	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	01-09-91	ND	6.5	ND	1700	1200	370	2400	NA	NA	NA	NA	NA
MW-2	04-16-91	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	06-10-91	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	10-10-91	ND	1.7	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	03-23-92	Not analyzed: sampling for additional parameters was discontinued											

Table 5
Historical Groundwater Analytical Data

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 07-10-95
Project Number: 0805-121.02

Well Designation	Water Sample Field Date	Volatile Organic Compounds by EPA Method 601/8010 or 624/8240							Semivolatile Organic Compounds by EPA Method 3520/8270				
		Methylene Chloride	1,2-Di- chloro- ethane	1,1-Di- chloro- ethane	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Naphth- alene	2-Methyl- naphth- alene	Bis (2- ethylhexyl) Phthalate	Phenol	2,4-Di- methyl- phenol
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-8	06-10-91	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-8	10-10-91	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-8	03-23-92	ND	ND	ND	23	<5.0*	450	23	NA	NA	NA	NA	NA
MW-8	06-08-92	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-8	09-15-92	ND	ND	ND	NA	NA	NA	NA	ND	ND	6	ND	ND
MW-8	11-16-92	ND	ND	ND	NA	NA	NA	NA	32	ND	ND	ND	ND
MW-8	02-16-93	ND	ND	ND	NA	NA	NA	NA	730	130	ND	ND	ND
MW-8	05-13-93	ND	ND	ND	NA	NA	NA	NA	97	20	ND	ND	ND
MW-8	08-17-93	ND	ND	ND	NA	NA	NA	NA	26	ND	ND	ND	ND
MW-8	11-08-93	ND	ND	ND	NA	NA	NA	NA	20	ND	19	ND	ND
MW-8	02-14-94	NA	NA	NA	NA	NA	NA	NA	350	65	ND	ND	ND
MW-8	05-05-94	<0.5	<0.5	0.7	NA	NA	NA	NA	23	<10	<10	ND	ND
MW-8	08-04-94	NA	NA	NA	NA	NA	NA	NA	11	<10	10	ND	ND
MW-8	12-13-94	NA	NA	NA	NA	NA	NA	NA	14	<10	14	ND	ND
MW-8	03-17-95	Not analyzed: well MW-1 was sampled for additional parameters in lieu of well MW-8											
MW-8	06-01-95	Not analyzed: well MW-1 was sampled for additional parameters in lieu of well MW-8											

µg/L: micrograms per liter

ND: not detected at or above the method detection limit

NA: not analyzed

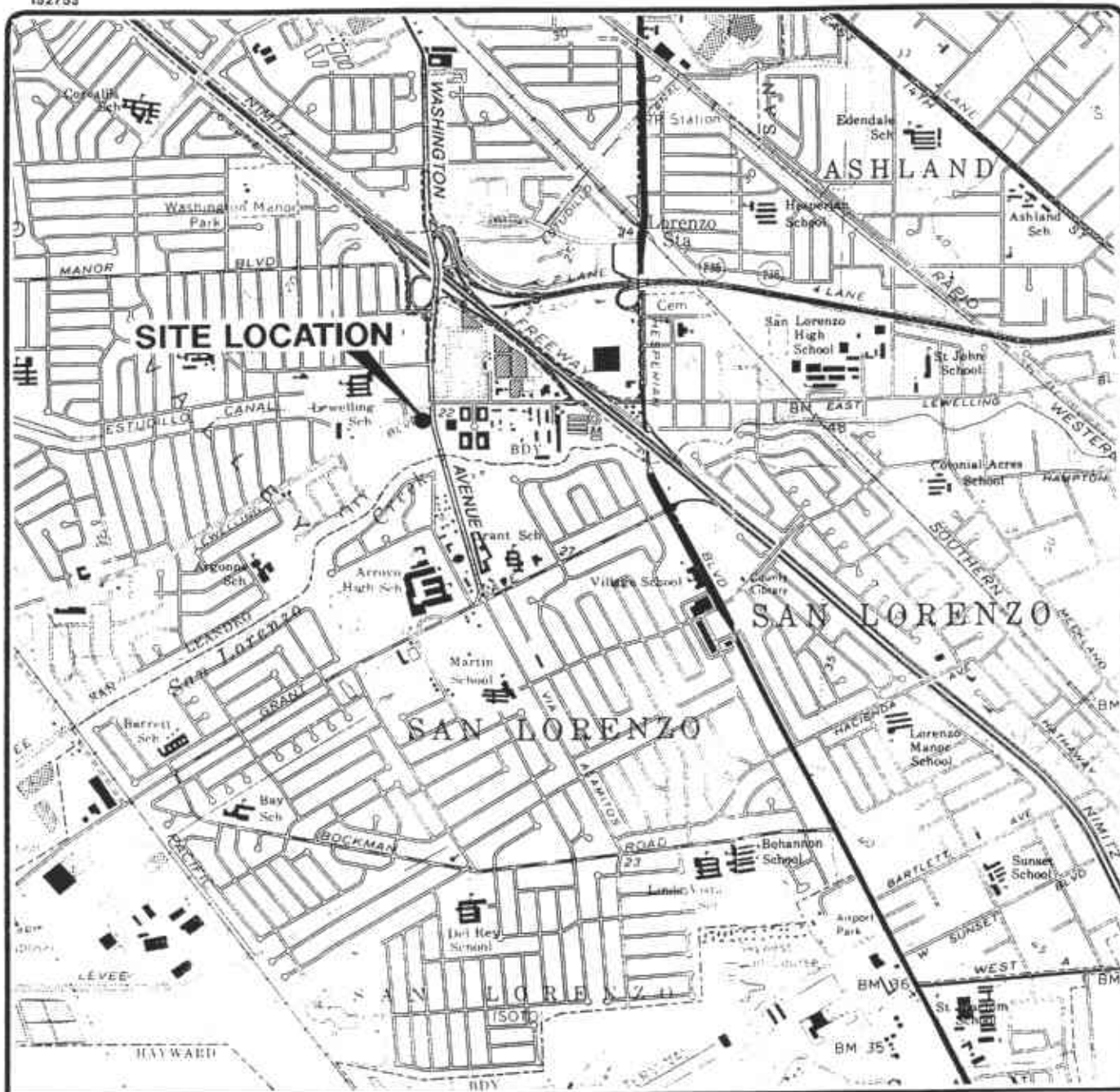
*: method reporting limit was raised due to: (1) high analyte concentration requiring sample dilution, or (2) matrix interference

Table 6
Approximate Cumulative Floating Product Recovered

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

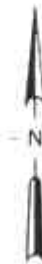
Date: 07-10-95
Project Number: 0805-121.02

Well Desig- nation	Date	Floating Product Recovered gallons
MW-1	1991	3.43
MW-1	1992	0.02
MW-1	1993	0.00
MW-1	1994	0.00
MW-1	1995	0.00
1991 to 1995 Total:		3.45



Base map from USGS 7.5' Quad. Maps:
Hayward and San Leandro, California.
Photorevised 1980.

Scale : 0 2000 4000 Feet



emcon

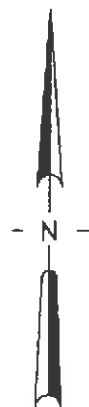
ARCO PRODUCTS COMPANY
SERVICE STATION 601, 712 LEWELLING BLVD
QUARTERLY GROUNDWATER MONITORING
SAN LEANDRO, CALIFORNIA

SITE LOCATION

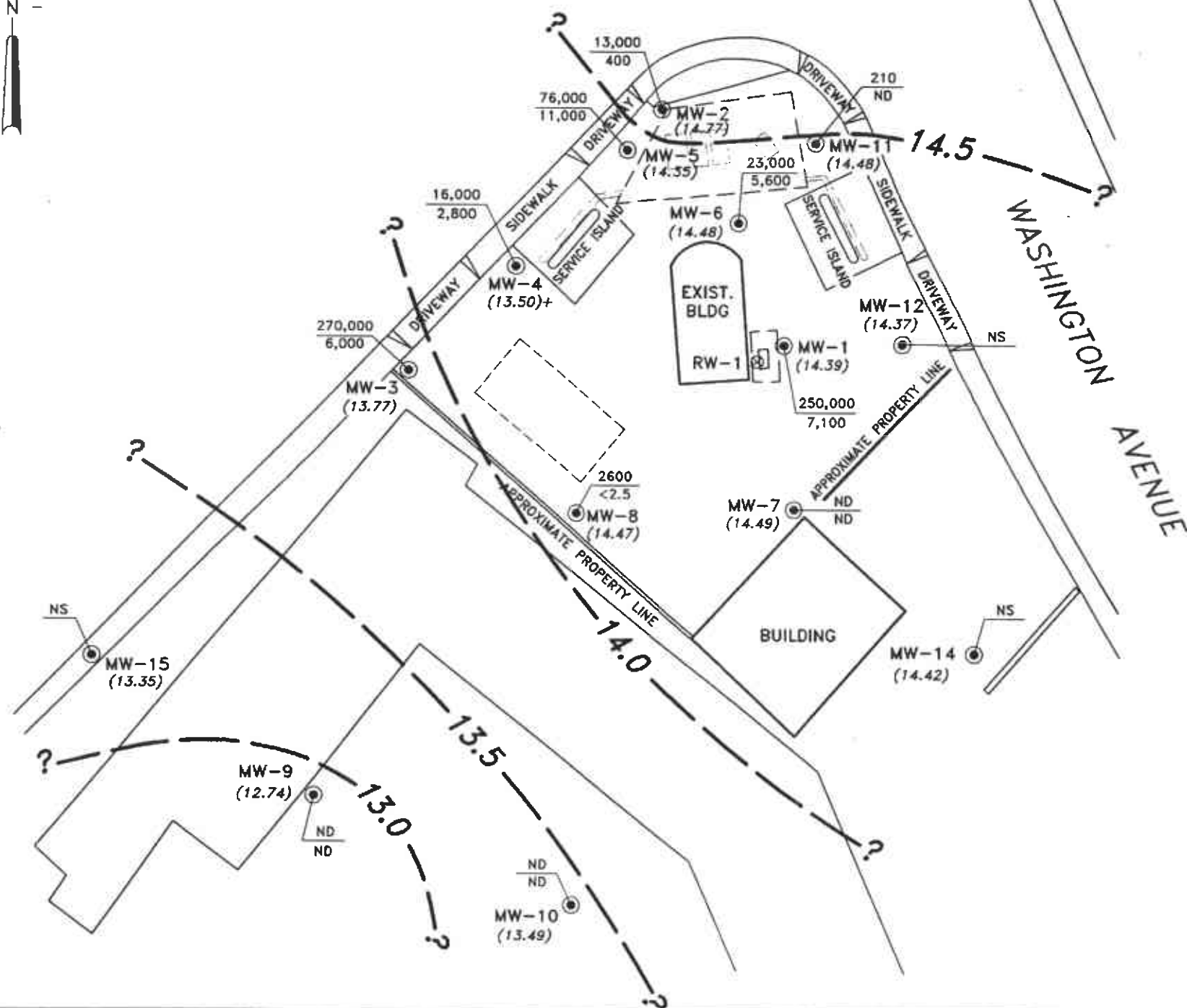
FIGURE

1

PROJECT NO.
805-121.02



Approximate direction of groundwater flow showing gradient (calculated using wells MW-10, MW-13, and MW-15)



EXPLANATION

- Groundwater monitoring well
- Vapor extraction well
- Former underground gasoline storage tank
- Existing underground gasoline storage tank
- Approximate limit of gasoline tank excavation
- Former product line
- (14.39) Groundwater elevation (Ft.-MSL) measured 6/1/95
- ? --- Groundwater elevation contour (Ft.-MSL)
- 250,000 / 7,100 TPHG, concentration in groundwater (ug/L); sampled 6/1/95
- 250,000 / 7,100 Benzene concentration in groundwater (ug/L); sampled 6/1/95
- + The groundwater elevation for well MW-4 was not used in contouring
- ND Not detected at or above the method reporting limit for TPHG (50 ug/L) or benzene (0.5 ug/L)
- NS Not sampled; not scheduled for chemical analysis
- <2.5 Not detected at or above the elevated method reporting limit shown



SCALE: 0 50 100 FEET
(Approximate)

ARCO PRODUCTS COMPANY
SERVICE STATION 601, 712 LEWELLING BLVD.
QUARTERLY GROUNDWATER MONITORING
SAN LEANDRO, CALIFORNIA

GROUNDWATER DATA
SECOND QUARTER 1995

FIGURE NO.

2

PROJECT NO.
805-121.02

APPENDIX A
FIELD DATA SHEETS, SECOND QUARTER 1995
GROUNDWATER MONITORING EVENT

FIELD REPORT
DEPTH TO WATER / FLOATING PRODUCT SURVEY

PROJECT # : 1775-208.01

STATION ADDRESS : 712 Lewelling Blvd.

DATE : 6/1/95

ARCO STATION # : 601

FIELD TECHNICIAN : M. Ross

DAY : THURSDAY

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-7	OK	Yes	Yes	Yes	Yes	8.40	8.40	NA	NA	9.60	
2	MW-9	OK	Yes	Yes	Yes	Yes	8.15	8.15	NA	NA	16.2	Water in Box T.O.C.
3	MW-10	OK	Yes	Yes	Yes	Yes	7.63	7.63	NA	NA	18.9	
4	MW-12	OK	Yes	Yes	Yes	Yes	8.40	8.40	NA	NA	11.6	Water in Box T.O.C.
5	MW-13	OK	Yes	Yes	Yes	Yes	7.72	7.72	NA	NA	13.0	
6	MW-14	OK	Yes	Yes	Yes	Yes	8.57	8.57	NA	NA	13.0	
7	MW-15	OK	Yes	Yes	Yes	Yes	5.84	5.84	NA	NA	10.0	
8	MW-11	OK	Yes	Yes	Yes	Yes	7.90	7.90	NA	NA	11.9	
9	MW-8	OK	Yes	Yes	Yes	Yes	6.50	6.50	NA	NA	10.2	
10	MW-2	OK	Yes	Yes	Yes	Yes	6.56	6.56	NA	NA	12.2	Water in Box T.O.C.
11	MW-4	OK	Yes	Yes	Yes	Yes	7.25	7.25	NA	NA	8.5	Water in Box
12	MW-6	OK	Yes	Yes	Yes	Yes	7.60	7.60	NA	NA	8.8	Water in Box
13	MW-5	OK	Yes	Yes	Yes	Yes	6.55	6.55	NA	NA	10.1	
14	MW-1	OK	Yes	Yes	Yes	Yes	7.87	7.87	NA	NA	11.1	
15	MW-3	OK	Yes	Yes	Yes	Yes	6.34	6.34	NA	NA	12.0	

SURVEY POINTS ARE TOP OF WELL CASINGS

EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

PROJECT NO: 1775-208-01SAMPLE ID: MW-PURGED BY: M. Ross / M. CallegosCLIENT NAME: ARCO # 601SAMPLED BY: ✓LOCATION: San Leandro 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.): 2.11DEPTH TO WATER (feet): 7.87 CALCULATED PURGE (gal.): 6.33DEPTH OF WELL (feet): 11.1 ACTUAL PURGE VOL (gal.): 6.50DATE PURGED: 6-1-95Start (2400 Hr) 1413End (2400 Hr) 1425DATE SAMPLED: ✓Start (2400 Hr) 1430

End (2400 Hr) _____

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1420</u>	<u>2.5</u>	<u>6.87</u>	<u>1223</u>	<u>69.9</u>	<u>Yellow</u>	<u>Trace</u>
<u>1422</u>	<u>4.5</u>	<u>6.89</u>	<u>1283</u>	<u>69.4</u>	<u>"</u>	<u>Mod</u>
<u>1424</u>	<u>6.5</u>	<u>6.89</u>	<u>1343</u>	<u>69.2</u>	<u>"</u>	<u>"</u>
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

D. O. (ppm): NRODOR: StrongNRNR

Field QC samples collected at this well:

Parameters field filtered at this well:

(COBALT 0 - 500)

(NTU 0 - 200
or 0 - 1000)

PURGING EQUIPMENT

☐ 2" Bladder Pump
☐ Centrifugal Pump
☐ Submersible Pump
☐ Well Wizard™
☐ Other: _____

☐ Bailer (Teflon®)
☒ Bailer (PVC)
☐ Bailer (Stainless Steel)
☐ Dedicated

SAMPLING EQUIPMENT

☐ 2" Bladder Pump
☐ DDL Sampler
☐ Dipper
☐ Well Wizard™
☐ Other: _____

☒ Bailer (Teflon®)
☐ Bailer (Stainless Steel)
☐ Submersible Pump
☐ Dedicated

WELL INTEGRITY: Good LOCK #: ARCO KeyREMARKS: Heavy SCREEN came in during PurgingNO PURGE WAS DETECTED WHEN WATER LOCK WAS TIGHT.Meter Calibration: Date: 6-1-95 Time: 1425 Meter Serial #: 9011 Temperature °F: _____

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

Location of previous calibration: MW-7Signature: M. RossReviewed By: SC Page 1 of 11



WATER SAMPLE FIELD DATA SHEET

EMCON
ASSOCIATES

 PROJECT NO: 1775-208.01
 PURGED BY: M. Ross / M. Callegos
 SAMPLED BY: ✓

 SAMPLE ID: MW-2
 CLIENT NAME: ARCO #601
 LOCATION: San Leandro 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): <u>N/R</u>	VOLUME IN CASING (gal.): <u>3.68</u>
DEPTH TO WATER (feet): <u>6.56</u>	CALCULATED PURGE (gal.): <u>11.05</u>
DEPTH OF WELL (feet): <u>12.2</u>	ACTUAL PURGE VOL (gal.): <u>11.5</u>

DATE PURGED: <u>6-1-95</u>	Start (2400 Hr) <u>1305</u>	End (2400 Hr) <u>1312</u>
DATE SAMPLED: <u>✓</u>	Start (2400 Hr) <u>1315</u>	End (2400 Hr) _____

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1307</u>	<u>4.0</u>	<u>7.00</u>	<u>1316</u>	<u>66.3</u>	<u>clt</u>	<u>clr</u>
<u>1309</u>	<u>8.0</u>	<u>6.94</u>	<u>1522</u>	<u>66.6</u>	<u>1</u>	<u>TRACE</u>
<u>1312</u>	<u>11.5</u>	<u>6.90</u>	<u>1533</u>	<u>66.7</u>	<u>1</u>	<u>11</u>
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

D. O. (ppm): <u>N/R</u>	ODOR: <u>STRONG</u>	<u>N/R</u>	<u>N/R</u>
Field QC samples collected at this well: <u>N/R</u>		Parameters field filtered at this well: <u>N/R</u>	

PURGING EQUIPMENT

☐ 2" Bladder Pump	☐ Bailor (Teflon®)
☐ Centrifugal Pump	☒ Bailor (PVC)
☐ Submersible Pump	☐ Bailor (Stainless Steel)
☐ Well Wizard™	☐ Dedicated

Other: _____

SAMPLING EQUIPMENT

☐ 2" Bladder Pump	☒ Bailor (Teflon®)
☐ DDL Sampler	☐ Bailor (Stainless Steel)
☐ Dipper	☐ Submersible Pump
☐ Well Wizard™	☐ Dedicated

Other: _____

 WELL INTEGRITY: GOOD LOCK #: ARCO KEY

 REMARKS: Heavy SAGIN CAUSE IN DURING PURGING -
SAMPLES STILL TAKEN

 Meter Calibration: Date: 6-1-95 Time: 1125 Meter Serial #: 9011 Temperature °F: _____
 (EC 1000 _____ / _____) (DI _____) (pH 7 _____ / _____) (pH 10 _____ / _____) (pH 4 _____ / _____)

 Location of previous calibration: MW-2

 Signature: [Signature] Reviewed By: Sif Page 2 of 11



EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

Rev. 3, 2/94

PROJECT NO: 1775-208-01
PURGED BY: M. ROSS / M. CALLEGOS
SAMPLED BY: ✓

SAMPLE ID: MW-3
CLIENT NAME: ARCO #601
LOCATION: San Leandro, 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.): 3.69
DEPTH TO WATER (feet): 6.54 CALCULATED PURGE (gal.): 11.09
DEPTH OF WELL (feet): 12.0 ACTUAL PURGE VOL. (gal.): 11.5

DATE PURGED: 6-1-95 Start (2400 Hr) 1444 End (2400 Hr) 1450
DATE SAMPLED: ✓ Start (2400 Hr) 1455 End (2400 Hr) _____

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1445</u>	<u>4.0</u>	<u>6.78</u>	<u>953</u>	<u>106.7</u>	<u>ND/1000</u>	<u>TRACE</u>
<u>1448</u>	<u>8.0</u>	<u>6.79</u>	<u>1078</u>	<u>65.6</u>	<u>"</u>	<u>"</u>
<u>1450</u>	<u>11.5</u>	<u>6.80</u>	<u>1040</u>	<u>65.7</u>	<u>"</u>	<u>"</u>
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

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

Field QC samples collected at this well: NR Parameters field filtered at this well: NR

PURGING EQUIPMENT

_____ 2" Bladder Pump _____ Bailer (Teflon®)
_____ Centrifugal Pump Y Bailer (PVC)
_____ Submersible Pump _____ Bailer (Stainless Steel)
_____ Well Wizard™ _____ Dedicated

Other: _____

SAMPLING EQUIPMENT

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

Other: _____

WELL INTEGRITY: GOOD LOCK #: ARCO KEY

REMARKS: SLIGHT SKEW NOTED

Meter Calibration: Date: 6-1-95 Time: 1125 Meter Serial #: 9011 Temperature °F: _____

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

Location of previous calibration: MW-7

Signature: Mike Ross Reviewed By: S/L Page 3 of 11



EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

Rev. 3, 2/94

PROJECT NO: 1775-208.01
PURGED BY: M. Ross / M. Callegos
SAMPLED BY: ✓

SAMPLE ID: MW-4
CLIENT NAME: ARCO #601
LOCATION: San Leandro 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.): .81
DEPTH TO WATER (feet): 7.25 CALCULATED PURGE (gal.): 2.45
DEPTH OF WELL (feet): 8.5 ACTUAL PURGE VOL (gal.): 0.5

DATE PURGED: 6-1-95 Start (2400 Hr) 1330 End (2400 Hr) 1331
DATE SAMPLED: ✓ Start (2400 Hr) 1335 End (2400 Hr) _____

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1331</u>	<u>0.5</u>	<u>6.95</u>	<u>1347</u>	<u>66.9</u>	<u>✓</u>	<u>clr</u>
<u>1331</u>	<u>dry</u>	<u>at</u>	<u>0.5 gallon</u>			
<u>1335</u>	<u>Recharge</u>	<u>7.00</u>	<u>1316</u>	<u>64.6</u>	<u>clr</u>	<u>clr</u>
D. O. (ppm): <u>NR</u>		ODOR: <u>NONE</u>		COBALT 0 - 500) <u>NR</u>		(NTU 0 - 200 or 0 - 1000) <u>NR</u>
Field QC samples collected at this well: <u>NR</u>			Parameters field filtered at this well: <u>NR</u>			

PURGING EQUIPMENT

____ 2" Bladder Pump
____ Centrifugal Pump ✓
____ Submersible Pump
____ Well Wizard™
Other: _____

____ Bailer (Teflon®)
____ Bailer (PVC)
____ Bailer (Stainless Steel)
____ Dedicated

SAMPLING EQUIPMENT

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

WELL INTEGRITY: Good LOCK #: ARCO Key

REMARKS: dry at 0.5 gallon

Meter Calibration: Date: 6-1-95 Time: 11:55 Meter Serial #: 9011 Temperature °F: _____

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

Location of previous calibration: MW-7

Signature: M. Ross Reviewed By: SC Page 4 of 11



EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

Rev. 3, 2/94

1.96

PROJECT NO: 1775-208.01
PURGED BY: M. ROSS / M. CALLEGOS
SAMPLED BY: ✓

SAMPLE ID: MW-5
CLIENT NAME: ARCO #601
LOCATION: San Leandro 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.): 2.31
DEPTH TO WATER (feet): 6.95 CALCULATED PURGE (gal.): 6.95
DEPTH OF WELL (feet): 10.1 ACTUAL PURGE VOL (gal.): 3.5

DATE PURGED: 6-1-95 Start (2400 Hr) 1355 End (2400 Hr) 1359
DATE SAMPLED: ✓ Start (2400 Hr) 1405 End (2400 Hr)

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1357</u>	<u>2.5</u>	<u>6.98</u>	<u>11623</u>	<u>69.1</u>	<u>SLY</u>	<u>TRICK</u>
<u>1359</u>	<u>DRY at</u>	<u>3.5</u>	<u>9 GALLONS</u>	<u> </u>	<u> </u>	<u> </u>
<u>1405</u>	<u>Recharge</u>	<u>6.91</u>	<u>1572</u>	<u>66.7</u>	<u>Light Blue</u>	<u>TRICK</u>
D. O. (ppm): <u>NR</u>	ODOR: <u>STRONG</u>			COLOR: <u>NR</u>	TURBIDITY: <u>NR</u>	
Field QC samples collected at this well: <u>NR</u>			Parameters field filtered at this well: <u>NR</u>			

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 X Bailer (Teflon®)
 ODL Sampler Bailer (Stainless Steel)
 Dipper Submersible Pump
 Well Wizard™ Dedicated
Other:

WELL INTEGRITY: Good LOCK #: ARCO KEY

REMARKS: DRY at 3.5 GALLONS
SLIGHT SKEW NOTICED

Meter Calibration: Date: 6-1-95 Time: 1125 Meter Serial #: 9011 Temperature °F:
(EC 1000 /) (DI) (pH 7 /) (pH 10 /) (pH 4 /)
Location of previous calibration: MW-7

Signature: Mike Ross Reviewed By: SR Page 5 of 11



EMCON
ASSOCIATES

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

PROJECT NO: 1775-208.01
PURGED BY: M. Ross / M. Gallegos
SAMPLED BY: ✓

SAMPLE ID: MW-6
CLIENT NAME: ARCO #601
LOCATION: San Leandro 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.): -78
DEPTH TO WATER (feet): 7.60 CALCULATED PURGE (gal.): 2.35
DEPTH OF WELL (feet): 8.80 ACTUAL PURGE VOL. (gal.): 0.5

DATE PURGED: 6-1-95 Start (2400 Hr) 1341 End (2400 Hr) 1342
DATE SAMPLED: ✓ Start (2400 Hr) 1345 End (2400 Hr) _____

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1342</u>	<u>0.5</u>	<u>6.76</u>	<u>1284</u>	<u>65.8</u>	<u>clr</u>	<u>clr</u>
	<u>DRY</u>	<u>at 0.5</u>	<u>gallons</u>			
<u>1345</u>	<u>Recharge</u>	<u>6.91</u>	<u>1316</u>	<u>67.7</u>	<u>clr</u>	<u>clr</u>
D. O. (ppm):	<u>NR</u>	ODOR:	<u>SLIGHT</u>		<u>NR</u>	<u>NR</u>

Field QC samples collected at this well: NR

Parameters field filtered at this well: NR

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

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 X
____ DDL Sampler
____ Dipper
____ Well Wizard™
____ Bailer (Teflon®)
____ Bailer (Stainless Steel)
____ Submersible Pump
____ Dedicated

Other: _____

WELL INTEGRITY: Good LOCK #: ARCO Key

REMARKS: DRY at 0.5 gallons

Meter Calibration: Date: 6-1-95 Time: 1125 Meter Serial #: 9011 Temperature °F: _____

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

Location of previous calibration: MW-7

Signature: [Signature] Reviewed By: SK Page 6 of 11



EMCON
ASSOCIATES

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

PROJECT NO: 1775-20801

SAMPLE ID: MW-7

PURGED BY: M. Ross / M. Callegos

CLIENT NAME: ARCO #601

SAMPLED BY: ✓

LOCATION: San Leandro 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): <u>N/R</u>	VOLUME IN CASING (gal.): <u>.28</u>
DEPTH TO WATER (feet): <u>2.40</u>	CALCULATED PURGE (gal.): <u>2.35</u>
DEPTH OF WELL (feet): <u>9.60</u>	ACTUAL PURGE VOL. (gal.): <u>1.0</u>

DATE PURGED: <u>6-1-95</u>	Start (2400 Hr) <u>1135</u>	End (2400 Hr) <u>1140</u>
DATE SAMPLED: <u>✓</u>	Start (2400 Hr) <u>1140</u>	End (2400 Hr) <u> </u>

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1136</u>	<u>1.0</u>	<u>6.69</u>	<u>1843</u>	<u>67.6</u>	<u>clr</u>	<u>TRACE</u>
<u>1136</u>	<u>DRY</u>	<u>OK 1.0</u>	<u>9 ACTIONS</u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u>1140</u>	<u>DRY</u>	<u>6.94</u>	<u>1829</u>	<u>67.5</u>	<u>clr</u>	<u>TRACE</u>
D. O. (ppm): <u>N/R</u>	ODOR: <u>NONE</u>	<u> </u>	<u> </u>	<u> </u>	<u>N/R</u>	<u>N/R</u>

Field QC samples collected at this well:

Parameters field filtered at this well:

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

PURGING EQUIPMENT

☐ 2" Bladder Pump
☐ Centrifugal Pump
☐ Submersible Pump
☐ Well Wizard™
 Other:

☐ Bailer (Teflon®)
☒ Bailer (PVC)
☐ Bailer (Stainless Steel)
☐ Dedicated

SAMPLING EQUIPMENT

☐ 2" Bladder Pump
☐ DDL Sampler
☐ Dipper
☐ Well Wizard™
 Other:

WELL INTEGRITY: Good LOCK #: ARCO Key

REMARKS: dry at 1.0 gal

Meter Calibration: Date: 6-1-95 Time: 1125 Meter Serial #: 9011 Temperature °F: 73.2
 (EC 1000 1024 / 1000) (DI) (pH 7 6.99 / 7.00) (pH 10 977 / 1000) (pH 4 3.0 /)

Location of previous calibration:

Signature: Mike Ross Reviewed By: SKC Page 7 of 11



EMCON
ASSOCIATES

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

PROJECT NO: 1775-208-01
PURGED BY: M. Ross / M. Gallegos
SAMPLED BY: ✓

SAMPLE ID: MW-8
CLIENT NAME: ARCO #601
LOCATION: San Leandro 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.): 2.41
DEPTH TO WATER (feet): 6.50 CALCULATED PURGE (gal.): 7.05
DEPTH OF WELL (feet): 10.2 ACTUAL PURGE VOL (gal.): 3.5

DATE PURGED: 6-1-95 Start (2400 Hr) 1247 End (2400 Hr) 1250
DATE SAMPLED: ✓ Start (2400 Hr) 1255 End (2400 Hr) _____

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1247</u>	<u>2.5</u>	<u>6.91</u>	<u>1399</u>	<u>67.4</u>	<u>Light Brown</u>	<u>NR</u>
<u>1250</u>	<u>DRY</u>	<u>AT</u>	<u>3.5</u>	<u>gallons</u>		
<u>1255</u>	<u>Recharge</u>	<u>6.95</u>	<u>1432</u>	<u>69.4</u>	<u>Brown</u>	<u>Heavy</u>

D. O. (ppm): NR ODOR: Slight (COBALT 0 - 500) NR (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 _____ Bailer (Teflon®)
____ Centrifugal Pump ✓ Bailer (PVC)
____ Submersible Pump _____ Bailer (Stainless Steel)
____ Well Wizard™ _____ Dedicated

Other: _____

SAMPLING EQUIPMENT

____ 2" Bladder Pump X Bailer (Teflon®)
____ ODL Sampler _____ Bailer (Stainless Steel)
____ Dipper _____ Submersible Pump
____ Well Wizard™ _____ Dedicated

Other: _____

WELL INTEGRITY: Good LOCK #: ARCO Key

REMARKS: Dry at 3.5 gallons

Meter Calibration: Date: 6-1-95 Time: 11:55 Meter Serial #: 9011 Temperature °F: _____

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

Location of previous calibration: MW-7

Signature: M. Ross Reviewed By: SGR Page 8 of 11

EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

PROJECT NO: 1775-208-01SAMPLE ID: MW-9PURGED BY: M. Ross / M. CallagosaCLIENT NAME: ARCO #601SAMPLED BY: ✓LOCATION: San Leandro CA.TYPE: Ground Water X Surface Water Treatment Effluent Other CASING DIAMETER (inches): 2 X 3 4 4.5 6 Other CASING ELEVATION (feet/MSL): NR VOLUME IN CASING (gal.): 1.31DEPTH TO WATER (feet): 8.15 CALCULATED PURGE (gal.): 3.91DEPTH OF WELL (feet): 16.2 ACTUAL PURGE VOL (gal.): 4.0DATE PURGED: 6-1-95Start (2400 Hr) 1150End (2400 Hr) 1156DATE SAMPLED: ✓Start (2400 Hr) 1202End (2400 Hr)

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1152</u>	<u>1.5</u>	<u>7.14</u>	<u>31</u>	<u>71.5</u>	<u>hazy/cloudy</u>	<u>Trace</u>
<u>1154</u>	<u>3.0</u>	<u>7.18</u>	<u>10.47</u>	<u>69.4</u>	<u>light grey</u>	<u>NR</u>
<u>1156</u>	<u>4.0</u>	<u>7.16</u>	<u>10.15</u>	<u>68.6</u>	<u>BEN</u>	<u>Heavy</u>

D. O. (ppm): NRODOR: NoneNR

Field QC samples collected at this well:

Parameters field filtered at this well:

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

PURGING EQUIPMENT

☐ 2" Bladder Pump
☐ Centrifugal Pump
☐ Submersible Pump
☐ Well Wizard™
 Other:

☐ Bailer (Teflon®)
☒ Bailer (PVC)
☐ Bailer (Stainless Steel)
☐ Dedicated

SAMPLING EQUIPMENT

☐ 2" Bladder Pump
☐ DDL Sampler
☐ Dipper
☐ Well Wizard™
 Other:

☒ Bailer (Teflon®)
☐ Bailer (Stainless Steel)
☐ Submersible Pump
☐ Dedicated

WELL INTEGRITY: Good LOCK #: ARCO KeyREMARKS: Meter Calibration: Date: 6-1-95 Time: 1125 Meter Serial #: 9011 Temperature °F: (EC 1000 /) (DI) (pH 7 /) (pH 10 /) (pH 4 /)Location of previous calibration: MW-7Signature: Michele RossReviewed By: SAH Page 9 of 11

EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

PROJECT NO: 1775-208.01SAMPLE ID: MW-1CPURGED BY: M. Ross / M. GallagosCLIENT NAME: ARCO # 601SAMPLED BY: ✓LOCATION: San Leandro CA.TYPE: Ground Water X Surface Water _____ Treatment Effluent _____ Other _____CASING DIAMETER (inches): 2 X 3 _____ 4 _____ 4.5 _____ 6 _____ Other _____CASING ELEVATION (feet/MSL): NRVOLUME IN CASING (gal.): 1.84DEPTH TO WATER (feet): 7.63CALCULATED PURGE (gal.): 5.52DEPTH OF WELL (feet): 18.9ACTUAL PURGE VOL (gal.): 6.0DATE PURGED: 6-1-95Start (2400 Hr) 12:27End (2400 Hr) 12:15DATE SAMPLED: ✓Start (2400 Hr) 12:30

End (2400 Hr) _____

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1211</u>	<u>2.0</u>	<u>7.12</u>	<u>1132</u>	<u>67.2</u>	<u>BRN</u>	<u>Heavy</u>
<u>1213</u>	<u>4.0</u>	<u>7.21</u>	<u>1098</u>	<u>67.0</u>	<u>"</u>	<u>"</u>
<u>1215</u>	<u>6.0</u>	<u>7.16</u>	<u>1087</u>	<u>67.1</u>	<u>"</u>	<u>"</u>
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

D. O. (ppm): NRODOR: NONENRNR

Field QC samples collected at this well:

Parameters field filtered at this well:

(COBALT 0 - 500)

(NTU 0 - 200
or 0 - 1000)

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
☐ ODL Sampler
☐ Dipper
☐ Well Wizard™
☒ Bailer (Teflon®)
☐ Bailer (Stainless Steel)
☐ Submersible Pump
☐ Dedicated

Other: _____

WELL INTEGRITY: GOODLOCK #: ARCO Key

REMARKS: _____

Meter Calibration: Date: 6-1-95 Time: 11:25 Meter Serial #: 9011 Temperature °F: _____

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

Location of previous calibration: MW-7Signature: Niche RossReviewed By: SATPage 10 of 11

EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

 PROJECT NO: 1775-20801
 PURGED BY: M. Ross / M. Callegos
 SAMPLED BY: ✓

 SAMPLE ID: MW-11
 CLIENT NAME: ARCO #601
 LOCATION: San Leandro CA.

1.76

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

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

CASING ELEVATION (feet/MSL):	<u>N/R</u>	VOLUME IN CASING (gal.):	<u>2.61</u>
DEPTH TO WATER (feet):	<u>7.90</u>	CALCULATED PURGE (gal.):	<u>7.84</u>
DEPTH OF WELL (feet):	<u>11.9</u>	ACTUAL PURGE VOL (gal.):	<u>8.0</u>

DATE PURGED:	<u>6-1-95</u>	Start (2400 Hr)	<u>1234</u>	End (2400 Hr)	<u>1239</u>
DATE SAMPLED:	<u>✓</u>	Start (2400 Hr)	<u>1245</u>	End (2400 Hr)	<u>—</u>

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (μmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1236</u>	<u>3.0</u>	<u>7.24</u>	<u>1447</u>	<u>67.1</u>	<u>Light Green</u>	<u>Mud</u>
<u>1237</u>	<u>5.5</u>	<u>7.14</u>	<u>1450</u>	<u>67.5</u>	<u>Blue</u>	<u>Heavy</u>
<u>1239</u>	<u>8.0</u>	<u>7.08</u>	<u>1444</u>	<u>67.8</u>	<u>4</u>	<u>4</u>
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

D. O. (ppm):	<u>N/R</u>	ODOR:	<u>Slight</u>		<u>N/R</u>	<u>N/R</u>
--------------	------------	-------	---------------	--	------------	------------

Field QC samples collected at this well:

Parameters field filtered at this well:

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

PURGING EQUIPMENT

_____ 2" Bladder Pump	_____ Bailer (Teflon®)
_____ Centrifugal Pump	<u>✓</u> Bailer (PVC)
_____ Submersible Pump	_____ Bailer (Stainless Steel)
_____ Well Wizard™	_____ Dedicated

Other: _____

SAMPLING EQUIPMENT

_____ 2" Bladder Pump	<u>✓</u> Bailer (Teflon®)
_____ DDL Sampler	_____ Bailer (Stainless Steel)
_____ Dipper	_____ Submersible Pump
_____ Well Wizard™	_____ Dedicated

Other: _____

WELL INTEGRITY: Good LOCK #: ARCO Key

REMARKS: _____

Meter Calibration: Date: 6-1-95 Time: 1125 Meter Serial #: 9011 Temperature °F: _____

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

Location of previous calibration: MW-7Signature: Mine Am Reviewed By: SA Page 11 of 11

APPENDIX B

**ANALYTICAL RESULTS AND CHAN-OF-CUSTODY
DOCUMENTATION, SECOND QUARTER 1995**

**Columbia
Analytical
Services^{inc.}**

June 15, 1995

Service Request No. S950691

John Young
EMCON
1921 Ringwood Avenue
San Jose, CA 95131

Re: **ARCO Facility No. 0601 / EMCON Project No. 0805-121.02**

Dear Mr. Young:

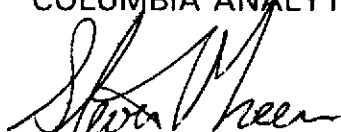
Attached are the results of the water sample(s) submitted to our lab on June 1, 1995. For your reference, these analyses have been assigned our service request number S950691.

All analyses were performed consistent with our laboratory's quality assurance program. All results are intended to be considered in their entirety, and CAS is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions.

Respectfully submitted:

COLUMBIA ANALYTICAL SERVICES, INC.



Steven L. Green
Project Chemist



Annelise J. Bazar
Regional QA Coordinator

SLG/ajb

001

COLUMBIA ANALYTICAL SERVICES, Inc.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
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
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is 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
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 MRL
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON	Service Request:	S950691
Project:	ARCO Facility No. 601/EMCON Project No. 0805-121.02	Date Collected:	6/1/95
Sample Matrix:	Water	Date Received:	6/1/95
		Date Extracted:	NA
		Date Analyzed:	6/13/95

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method

	Analyte:	TPH as			Ethyl-	Xylenes,
	Units:	Gasoline	Benzene	Toluene	benzene	Total
		ug/L (ppb)	ug/L (ppb)	ug/L (ppb)	ug/L (ppb)	ug/L (ppb)
Method Reporting Limit:		50	0.5	0.5	0.5	0.5

Sample Name	Lab Code					
MW-9 (16)	S950691-001	ND	ND	ND	ND	ND
MW-10 (18)	S950691-002	ND	ND	ND	ND	ND
Method Blank	S950613-WB1	ND	ND	ND	ND	ND

Approved By: GAL

Date: 6/15/95

5ABTXGAS/061694

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:
Project: ARCO Facility No. 601/EMCON Project No. 0805-121.02
Sample Matrix: Water

Service Request: S950691
Date Collected: 6/1/95
Date Received: 6/1/95
Date Extracted: NA
Date Analyzed: 6/13/95

Matrix Spike/Duplicate Matrix Spike Summary

BTE

EPA Methods 5030/8020

Units: ug/L (ppb)

Sample Name: Batch QC
Lab Code: S950700-001

Analyte	Percent Recovery								Relative Percent Difference
	Spike Level		Sample Result	Spike Result		CAS Acceptance Limits			
	MS	DMS		MS	DMS	MS	DMS		
Benzene	25	25	ND	25.4	26.0	102	104	75-135	2
Toluene	25	25	ND	24.0	24.9	96	100	73-136	4
Ethylbenzene	25	25	ND	24.5	25.1	98	100	69-142	2

Approved By: Date: 6/15/95

DMSIS/060194

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

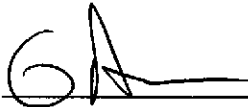
Client: EMCON
Project: ARCO Facility No. 601/EMCON Project No. 0805-121.02
Sample Matrix: Water

Service Request: S950691
Date Collected: 6/1/95
Date Received: 6/1/95
Date Extracted: NA
Date Analyzed: 6/13/95

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

Sample Name	Lab Code	Percent Recovery α, α, α -Trifluorotoluene
MW-9 (16)	S950691-001	93
MW-10 (18)	S950691-002	98
(MS)	S950700-001MS	101
(DMS)	S950700-001DMS	97
Method Blank	S950613-WB1	93

CAS Acceptance Limits: 69-116

Approved By: 

Date: 6/15/95

SUR1/062994

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON

Service Request: S950691

Project: ARCO Facility No. 601/EMCON Project No. 0805-121.02

Date Analyzed: 6/13/95

Initial Calibration Verification (ICV) Summary
BTEX 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	25.8	103	85-115
Toluene	25	25.1	100	85-115
Ethylbenzene	25	25.8	103	85-115
Xylenes, Total	75	75.4	101	85-115
Gasoline	250	249	100	90-110

Approved By: 

Date: 6/15/95

ICV25AL/060194

ARCO Products Company

Division of AtlanticRichfieldCompany

Task Order No. 17075.00

Chain of Custody

ARCO Facility no. #0601		City (Facility) San Leandro		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) 1971 Ringwood Ave San Jose, CA 95131																			
Sample I.D.	Lab no.	Container no.	Matrix			Preservation		Sampling date	Sampling time	BTEX 602/EPA 8020 STEX/TPH EPA 1602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 801/8010	EPA 824/8240	EPA 825/8270	Semi Metals ☐ VOA ☐	CAN Metals EPA 8010/7000 TLC ☐ STLC ☐	Lead Org./DHS Lead EPA 7420/7421 ☐	Method of shipment Sampler will deliver	
			Soil	Water	Other	Ice	Acid														
MW-9(16)	2		X			X	HCL	6/1/95	1202	X											Special detection Limit/reporting Lowest Possible
MW-10(18)	2		X			X	ACL	↓	1220	X											
																					Special QA/QC As Normal
																					Remarks 2-40 ml HCL VOAs
																					#005-121.02
																					Lab number 5950691
																					Turnaround time
																					Priority Rush 1 Business Day ☐
																					Rush 2 Business Days ☐
																					Expedited 5 Business Days ☐
																					Standard 10 Business Days ☒

Condition of sample: ok				Temperature received: cool			
Relinquished by sampler Mike Ron		Date 6/1/95	Time 1532	Received by			
Relinquished by		Date	Time	Received by			
Relinquished by I		Date	Time	Received by laboratory Joanne Brown		Date 6-1-95	Time 1538

Due 6/15

**Columbia
Analytical
Services^{inc.}**

June 15, 1995

Service Request No. S950690

John Young
EMCON
1921 Ringwood Avenue
San Jose, CA 95131

Re: **ARCO Facility No. 0601 / EMCON Project No. 0805-121.01**

Dear Mr. Young:

Attached are the results of the water sample(s) submitted to our lab on June 1, 1995. For your reference, these analyses have been assigned our service request number S950690.

All analyses were performed consistent with our laboratory's quality assurance program. All results are intended to be considered in their entirety, and CAS is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions.

Respectfully submitted:

COLUMBIA ANALYTICAL SERVICES, INC.


Steven L. Green
Project Chemist


Annelise J. Bazar
Regional QA Coordinator

SLG/ajb

001

COLUMBIA ANALYTICAL SERVICES, Inc.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
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
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is 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
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 MRL
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: ARCO Facility No. 601/EMCON Project No. 0805-121.02
Sample Matrix: Water

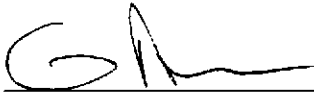
Service Request: S950690
Date Collected: 6/1/95
Date Received: 6/1/95
Date Extracted: NA
Date Analyzed: 6/12-13/95

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method

Analyte:	TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes, Total
Units:	ug/L (ppb)	ug/L (ppb)	ug/L (ppb)	ug/L (ppb)	ug/L (ppb)
Method Reporting Limit:	50	0.5	0.5	0.5	0.5

Sample Name	Lab Code	TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes, Total
MW-7 (9)	S950690-001	ND	ND	ND	ND	ND
MW-11 (11)	S950609-002	210	ND	ND	0.9	0.7
MW-8 (10)	S950690-003	2,600	<2.5*	<2.5*	15	<2.5*
MW-2 (12)	S950690-004	13,000	400	78	210	410
MW-4 (8)	S950690-005	16,000	2,800	870	380	2,700
MW-6 (8)	S950690-006	23,000	5,600	<50*	1,300	1,900
MW-5 (10)	S950690-007	76,000	11,000	5,400	1,400	7,700
MW-1 (11)	S950690-008	250,000	7,100	950	3,500	21,000
MW-3 (12)	S950690-009	270,000	6,000	11,000	5,200	28,000
Method Blank	S950612-WB1	ND	ND	ND	ND	ND
Method Blank	S950613-WB1	ND	ND	ND	ND	ND

* Raised MRL due to high analyte concentration requiring sample dilution.

Approved By: 

Date: 6/15/95

5ABTXGAS/061694

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON
Project: ARCO Facility No. 601/EMCON Project No. 0805-121.02
Sample Matrix: Water

Service Request: S950690
Date Collected: 6/1/95
Date Received: 6/1/95
Date Extracted: NA
Date Analyzed: 6/12/95

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

Sample Name: MW-7 (9)
Lab Code: S950690-001

Analyte	Spike Level		Sample Result	Spike Result		Percent Recovery			Relative Percent Difference
	MS	DMS		MS	DMS	CAS Acceptance Limits			
						MS	DMS		
Gasoline	250	250	ND	230	230	92	92	67-121	<1

Approved By: 

DMSIS/060194

Date: 6/15/95

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON
Project: ARCO Facility No. 601/EMCON Project No. 0805-121.02
Sample Matrix: Water

Service Request: S950690
Date Collected: 6/1/95
Date Received: 6/1/95
Date Extracted: NA
Date Analyzed: 6/12-13/95

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

Sample Name	Lab Code	Percent Recovery
		α,α,α -Trifluorotoluene
MW-7 (9)	S950690-001	97
MW-11 (11)	S950609-002	99
MW-8 (10)	S950690-003	96
MW-2 (12)	S950690-004	114*
MW-4 (8)	S950690-005	99
MW-6 (8)	S950690-006	97
MW-5 (10)	S950690-007	99
MW-1 (11)	S950690-008	113
MW-3 (12)	S950690-009	108
MW-7 (9) (MS)	S950690-001MS	106
MW-7 (9) (DMS)	S950690-001DMS	102
Method Blank	S950612-WB1	102
Method Blank	S950613-WB1	93

CAS Acceptance Limits: 69-116

* The surrogate used for this sample was 4-bromofluorobenzene.

Approved By: 

Date: 6/15/95

SUR1/062994

COLUMBIA ANALYTICAL SERVICES, INC.

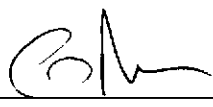
QA/QC Report

Client: EMCON
Project: ARCO Facility No. 601/EMCON Project No. 0805-121.02

Service Request: S950690
Date Analyzed: 6/12/95

Initial Calibration Verification (ICV) Summary
BTEX 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	26.3	105	85-115
Toluene	25	25.4	102	85-115
Ethylbenzene	25	25.7	103	85-115
Xylenes, Total	75	75.1	100	85-115
Gasoline	250	246	98	90-110

Approved By: 

Date: 6/15/95

ICV25AL/060194

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: ARCO Products Company0601/#17075.00
Sample Matrix: Water

Service Request: L952473
Date Collected: 6/1/95
Date Received: 6/2/95
Date Extracted: 6/6/95

Total Petroleum Hydrocarbons as Diesel
EPA Method 3510/8015 Modified/California DHS LUFT Method
Units: µg/L (ppb)

Sample Name	Lab Code	Date Analyzed	MRL	Result
MW-1(11)	L952473-001	6/6/95	50	190000*
Method Blank	L952473-MB	6/6/95	50	ND

* Chromatogram fingerprint is not characteristic of diesel; however, hydrocarbons in the gasoline range were detected at the reported concentration.

Approved By:

Eydie Schwartz

Date:

6/12/95

IAMRLB/071594

L952473.XLS - 8015a 6/12/95

Page 007

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: ARCO Products Company0601/#17075.00
Sample Matrix: Water

Service Request: L952473
Date Collected: 6/1/95
Date Received: 6/2/95
Date Extracted: 6/2/95
Date Analyzed: 6/2/95

Total Recoverable Petroleum Hydrocarbons
EPA Method 418.1
Units: mg/L (ppm)

Sample Name	Lab Code	MRL	Result
MW-1(11)	L952473-001	0.5	38
Method Blank	L952473-MB	0.5	ND

Approved By:

Eydie Schwartz

Date:

6/12/95

IAMRL060194

L952473.XLS - 418w 6/12/95

Page No.

008

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: ARCO Products Company0601/#17075.00
Sample Matrix: Water

Service Request: L952473
Date Collected: 6/1/95
Date Received: 6/2/95
Date Analyzed: 6/5-6/95

Total Metals
 Units: mg/L (ppm)

Sample Name: MW-1(11) **Method Blank**
Lab Code: L952473-001 L952473-MB

Analyte	EPA Method	MRL		
Cadmium	3010/6010	0.005	ND	ND
Chromium	3010/6010	0.01	0.02	ND
Lead	3020/7421	0.002	0.022	ND
Nickel	3010/6010	0.04	0.07	ND
Zinc	3010/6010	0.01	0.10	ND

Approved By: _____

Eydie Schwartz

Date: 6/12/95

3S22EPA/060194
 L952473.XLS - metcamw 6/12/95

Page No: **009**

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: ARCO Products Company 0601/#17075.00
Sample Matrix: Water

Service Request: L952473
Date Collected: 6/1/95
Date Received: 6/2/95
Date Extracted: 6/6/95

Base Neutral/Acid Semivolatile Organic Compounds
EPA Methods 3510/8270
Units: µg/L (ppb)

Sample Name: MW-1(11) Method Blank
Lab Code: L952473-001* L952473-MB
Date Analyzed: 6/7/95 6/7/95

Base Neutral Analyte	MRL		
N-Nitrosodimethylamine	5	<100	ND
Aniline	5	<100	ND
Bis(2-chloroethyl) Ether	5	<100	ND
1,2-Dichlorobenzene	5	<100	ND
1,3-Dichlorobenzene	5	<100	ND
1,4-Dichlorobenzene	5	<100	ND
Bis(2-chloroisopropyl) Ether	5	<100	ND
N-Nitrosodi-n-propylamine	5	<100	ND
Hexachloroethane	5	<100	ND
Nitrobenzene	5	<100	ND
Isophorone	5	<100	ND
Bis(2-chloroethoxy)methane	5	<100	ND
1,2,4-Trichlorobenzene	5	<100	ND
Naphthalene	5	2200	ND
4-Chloroaniline	5	<100	ND
Hexachlorobutadiene	5	<100	ND
2-Methylnaphthalene	5	1700	ND
Hexachlorocyclopentadiene	10	<200	ND
2-Chloronaphthalene	5	<100	ND
2-Nitroaniline	20	<400	ND
Dimethyl Phthalate	5	<100	ND
Acenaphthylene	5	<100	ND
3-Nitroaniline	20	<400	ND
Acenaphthene	5	<100	ND
Dibenzofuran	5	<100	ND
2,4-Dinitrotoluene	5	<100	ND

* MRL is elevated because of matrix interferences and because the sample required diluting.

Approved By: Eydie Schwartz

Date: 6/12/95

L952473.XLS - 8270w 6/13/95

Page No.: 010

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: ARCO Products Company 0601/#17075.00
Sample Matrix: Water

Service Request: L952473
Date Collected: 6/1/95
Date Received: 6/2/95
Date Extracted: 6/6/95

Base Neutral/Acid Semivolatile Organic Compounds
EPA Methods 3510/8270
Units: µg/L (ppb)

Sample Name: MW-1(11) Method Blank
Lab Code: L952473-001* L952473-MB
Date Analyzed: 6/7/95 6/7/95

Base Neutral Analyte	MRL		
2,6-Dinitrotoluene	5	<100	ND
Diethyl Phthalate	5	<100	ND
4-Chlorophenyl Phenyl Ether	5	<100	ND
Fluorene	5	<100	ND
4-Nitroaniline	20	<400	ND
N-Nitrosodiphenylamine	5	<100	ND
4-Bromophenyl Phenyl Ether	5	<100	ND
Hexachlorobenzene	5	<100	ND
Phenanthrene	5	<100	ND
Anthracene	5	<100	ND
Di-n-butyl Phthalate	5	<100	ND
Fluoranthene	5	<100	ND
Pyrene	5	<100	ND
Butylbenzyl Phthalate	5	<100	ND
3,3'-Dichlorobenzidine	20	<400	ND
Benz(a)anthracene	5	<100	ND
Bis(2-ethylhexyl) Phthalate	5	<100	ND
Chrysene	5	<100	ND
Di-n-octyl Phthalate	5	<100	ND
Benzo(b)fluoranthene	5	<100	ND
Benzo(k)fluoranthene	5	<100	ND
Benzo(a)pyrene	5	<100	ND
Indeno(1,2,3-c,d)pyrene	5	<100	ND
Dibenz(a,h)anthracene	5	<100	ND
Benzo(g,h,i)perylene	5	<100	ND
Pyridine	10	<200	ND

* MRL is elevated because of matrix interferences and because the sample required diluting.

Approved By: Eydie Schwartz Date: 6/12/95

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: ARCO Products Company 0601/#17075.00
Sample Matrix: Water

Service Request: L952473
Date Collected: 6/1/95
Date Received: 6/2/95
Date Extracted: 6/6/95

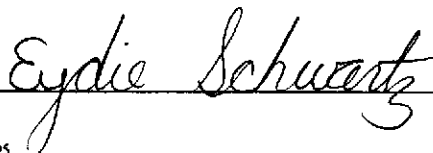
Base Neutral/Acid Semivolatile Organic Compounds
EPA Methods 3510/8270
Units: µg/L (ppb)

Sample Name: MW-1(11) Method Blank
Lab Code: L952473-001* L952473-MB
Date Analyzed: 6/7/95 6/7/95

Acid Analyte	MRL		
Phenol	5	240	ND
2-Chlorophenol	5	<100	ND
Benzyl Alcohol	10	<200	ND
2-Methylphenol	5	<100	ND
3- and 4-Methylphenol ^a	5	<100	ND
2-Nitrophenol	5	<100	ND
2,4-Dimethylphenol	5	<100	ND
Benzoic Acid	50	<1000	ND
2,4-Dichlorophenol	5	<100	ND
4-Chloro-3-methylphenol	5	<100	ND
2,4,6-Trichlorophenol	5	<100	ND
2,4,5-Trichlorophenol	5	<100	ND
2,4-Dinitrophenol	50	<1000	ND
4-Nitrophenol	50	<1000	ND
2-Methyl-4,6-dinitrophenol	20	<400	ND
Pentachlorophenol	30	<600	ND

* MRL is elevated because of matrix interferences and because the sample required diluting.
a Quantified as 4-Methylphenol.

Approved By:



Date: 6/12/95

3S3PBNA/060794

L952473.XLS - 8270w 6/13/95

Page No.:

012

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON
Project: ARCO Products Company0601/#17075.00
Sample Matrix: Water

Service Request: L952473
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: NA

Surrogate Recovery Summary
Total Petroleum Hydrocarbons as Diesel
EPA Method 3510/8015 Modified/California DHS LUFT Method

Sample Name	Lab Code	Percent Recovery <i>p</i> -Terphenyl
MW-1(11)	L952473-001	*
Method Blank	L952473-MB	76

CAS Acceptance Limits: 50-140

* Not Applicable because of the sample matrix. Analysis of this sample required a dilution such that the surrogate concentration was diluted below the method reporting limit.

Approved By: _____

Eydie Schwartz

Date: 6/12/95

SUR1/062994
L952473.XLS - 8015srbs 6/12/95

013
Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON
Project: ARCO Products Company0601/#17075.00
LCS Matrix: Water

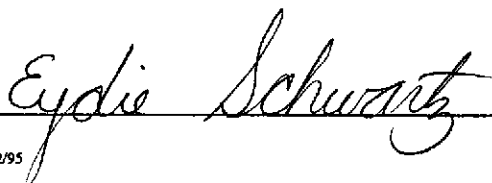
Service Request: L952473
Date Collected: NA
Date Received: NA
Date Extracted: 6/6/95
Date Analyzed: 6/6/95

Laboratory Control Sample/Duplicate Laboratory Control Sample Summary*
Total Petroleum Hydrocarbons as Diesel
EPA Method 3510/8015 Modified/California DHS LUFT Method
Units: µg/L (ppb)

Analyte	True Value		Result		Percent Recovery		CAS Acceptance Limits	Relative Percent Difference
	LCS	DLCS	LCS	DLCS	LCS	DLCS		
Diesel	2000	2000	1930	2150	96	108	70-140	11

* Sample quantity was insufficient to perform matrix spike and matrix spike duplicate. Three separate, replicate one liter samples are required to analyze sample and spikes.

Approved By:



Date:

6/12/95

DLCS/060194

L952473.XLS - genlec3 6/12/95

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON
Project: ARCO Products Company0601/#17075.00
LCS Matrix: Water

Service Request: L952473
Date Collected: NA
Date Received: NA
Date Extracted: 6/2/95
Date Analyzed: 6/2/95

Laboratory Control Sample/Duplicate Laboratory Control Sample Summary*
Total Petroleum Hydrocarbons (TRPH)
EPA Method 418.1
Units: mg/L (ppm)

Analyte	True Value		Result		Percent Recovery		CAS Acceptance Limits	Relative Percent Difference
	LCS	DLCS	LCS	DLCS	LCS	DLCS		
TRPH	2.12	2.12	1.82	1.89	86	89	75-125	4

* Sample quantity was insufficient to perform matrix spike and matrix spike duplicate. Three separate, replicate one liter samples are required to analyze sample and spikes.

Approved By: Eydie Schwartz Date: 6/12/95
 DLCS/060194
 L952473.XLS - genlcs3 (2) 6/12/95

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON
Project: ARCO Products Company0601/#17075.00
LCS Matrix: Water

Service Request: L952473
Date Collected: NA
Date Received: NA
Date Analyzed: 6/5-6/95

Laboratory Control Sample Summary
Total Metals
Units: mg/L (ppm)

Analyte	EPA Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
Cadmium	6010	0.100	0.093	93	75-125
Chromium	6010	0.500	0.483	97	75-125
Lead	7421	0.0250	0.0253	101	75-125
Nickel	6010	0.500	0.487	97	75-125
Zinc	6010	0.500	0.517	103	75-125

Approved By: _____

Eydie Schwartz

Date: _____

6/12/95

LCSEPA/060194

L952473.XLS - meticsw1 6/12/95

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016

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON
Project: ARCO Products Company0601/#17075.00
Sample Matrix: Water

Service Request: L952473
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: 6/5-6/95

Matrix Spike/Duplicate Matrix Spike Summary
Total Metals
Units: mg/L (ppm)

Sample Name: Batch QC
Lab Code: L952448-004

Analyte	MRL	Spike Level	Sample Result	Spike Result		Percent Recovery		CAS Acceptance Limits	Relative Percent Difference
				MS	DMS	MS	DMS		
Cadmium	0.005	0.100	ND	0.093	0.091	93	91	75-125	2
Chromium	0.01	0.500	ND	0.475	0.474	95	95	75-125	<1
Nickel	0.04	0.500	ND	0.478	0.493	96	99	75-125	3
Zinc	0.01	0.500	0.025	0.480	0.518	91	99	75-125	8

Approved By: _____



Date: 6/12/95

DMSISMRL/060194
L952473.XLS - metdmsw1 6/12/95

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON
Project: ARCO Products Company 0601/#17075.00
Sample Matrix: Water

Service Request: L952473
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: 6/5-6/95

Matrix Spike/Duplicate Matrix Spike Summary
Total Metals
Units: mg/L (ppm)

Sample Name: Batch QC
Lab Code: L952486-001

Analyte	MRL	Spike Level	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery		CAS Acceptance Limits	Relative Percent Difference
						MS	DMS		
Lead	0.002	0.0250	0.0056	0.0289	0.0286	93	92	75-125	1

Approved By: _____

Eydie Schwartz

Date: 6/12/95

DMS1SMRL/060194

L952473.XLS - metdmsw1 (2) 6/13/95

Page No.: **018**

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON
Project: ARCO Products Company0601/#17075.00
Sample Matrix: Water

Service Request: L952473
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: NA

Surrogate Recovery Summary
Base Neutral/Acid Semivolatile Organic Compounds
EPA Methods 3510/8270

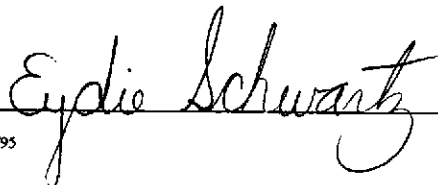
Sample Name	Lab Code	2FP	P e r c e n t R e c o v e r y				
			PHL	TBP	NBZ	FBP	TPH
MW-1(11)	L952473-001	*	*	*	*	*	*
Method Blank	L952473-MB	58	38	70	80	84	129
Matrix Spike	L952473-1MS	*	*	*	*	*	*
Duplicate Matrix Spike	L952473-1DMS	*	*	*	*	*	*

CAS Acceptance Limits: 21-100 10-94 10-123 35-114 43-116 33-141

2FP 2-Fluorophenol
PHL Phenol-D₆
TBP 2,4,6-Tribromophenol
NBZ Nitrobenzene-D₅
FBP 2-Fluorobiphenyl
TPH Terphenyl-D₁₄

* Not Applicable because of the sample matrix. Analysis of this sample required a dilution such that the surrogate concentration was diluted below the method reporting limit.

Approved By:



Date: 6/12/95

SUR6060894
L952473.XLS - 8270srw 6/12/95

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

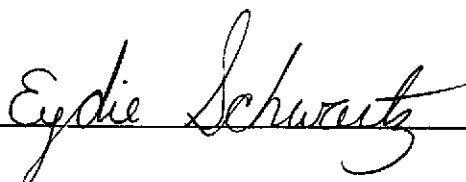
Client: EMCON
Project: ARCO Products Company0601/#17075.00
LCS Matrix: Water

Service Request: L952473
Date Collected: NA
Date Received: NA
Date Extracted: 6/6/95
Date Analyzed: 6/6/95

Laboratory Control Sample Summary
Base Neutral/Acid Semivolatile Organic Compounds
EPA Methods 3510/8270
Units: µg/L (ppb)

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
Phenol	50.0	20.6	41	5-112
2-Chlorophenol	50.0	42.4	85	23-134
1,4-Dichlorobenzene	50.0	36.5	73	20-124
N-Nitrosodi-n-propylamine	50.0	44.3	89	D-230
1,2,4-Trichlorobenzene	50.0	34.8	70	44-142
4-Chloro-3-methylphenol	50.0	38.0	76	22-147
Acenaphthene	50.0	46.5	93	47-145
4-Nitrophenol	50.0	10.7	21	D-132
2,4-Dinitrotoluene	50.0	41.8	84	39-139
Pentachlorophenol	50.0	41.9	84	14-176
Pyrene	50.0	52.0	104	52-115

Approved By: _____



Date: 6/12/95

LCS/060194

L952473.XLS - 8270lcs.w 6/12/95

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON
 Project: ARCO Products Company0601/#17075.00
 Sample Matrix: Water

Service Request: L952473
 Date Collected: NA
 Date Received: NA
 Date Extracted: 6/6/95
 Date Analyzed: 6/10/95

Matrix Spike/Duplicate Matrix Spike Summary
 Base Neutral/Acid Semivolatile Organic Compounds
 EPA Methods 3510/8270
 Units: µg/L (ppb)

Sample Name: MW-1(11)
 Lab Code: L952473-001

Analyte	Percent Recovery								Relative Percent Difference
	Spike Level		Sample Result	Spike Result		CAS Acceptance Limits			
	MS	DMS		MS	DMS	MS	DMS		
Phenol	50.0	50.0	ND	*	*	NA	NA	12-89	NA
2-Chlorophenol	50.0	50.0	ND	*	*	NA	NA	27-123	NA
1,4-Dichlorobenzene	50.0	50.0	ND	*	*	NA	NA	36-97	NA
N-Nitrosodi-n-propylamine	50.0	50.0	ND	*	*	NA	NA	41-116	NA
1,2,4-Trichlorobenzene	50.0	50.0	ND	*	*	NA	NA	39-98	NA
4-Chloro-3-methylphenol	50.0	50.0	ND	*	*	NA	NA	23-97	NA
Acenaphthene	50.0	50.0	ND	*	*	NA	NA	46-118	NA
4-Nitrophenol	50.0	50.0	ND	*	*	NA	NA	10-80	NA
2,4-Dinitrotoluene	50.0	50.0	ND	*	*	NA	NA	24-96	NA
Pentachlorophenol	50.0	50.0	ND	*	*	NA	NA	9-103	NA
Pyrene	50.0	50.0	ND	*	*	NA	NA	26-127	NA

* Not Applicable because of the sample matrix. Analysis of this sample required a dilution such that the spike concentration was diluted below the method reporting limit.

Approved By: Eydie Schwartz

Date: 6/12/95

DMSIS/060194
 L952473.XLS - 8270msw 6/12/95

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