

11/95 report

Arco
712 Leaveling
San Leandro



EMCON





Date:

December 22, 1995

Re: ARCO Station #

601 • 712 Lewelling Boulevard • San Leandro, CA
Third Quarter 1995 Groundwater Monitoring Results

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

Submitted by:

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

December 14, 1995
Project 20805-121.002

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

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

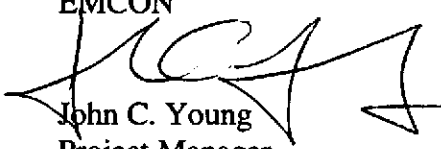
Dear Mr. Sullivan:

Enclosed please find copies of the laboratory analytical results for groundwater samples collected from wells MW-9 and MW-10 during the third quarter of 1995. These wells are located at Chateau Manor Apartments, 724 Lewelling Boulevard, San Leandro, California. The groundwater samples were collected on August 31, 1995, during quarterly sampling of the ARCO Products Company service station 601, 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, total xylenes, and methyl-tert-butyl ether were not detected.

Please call if you have questions.

Sincerely,

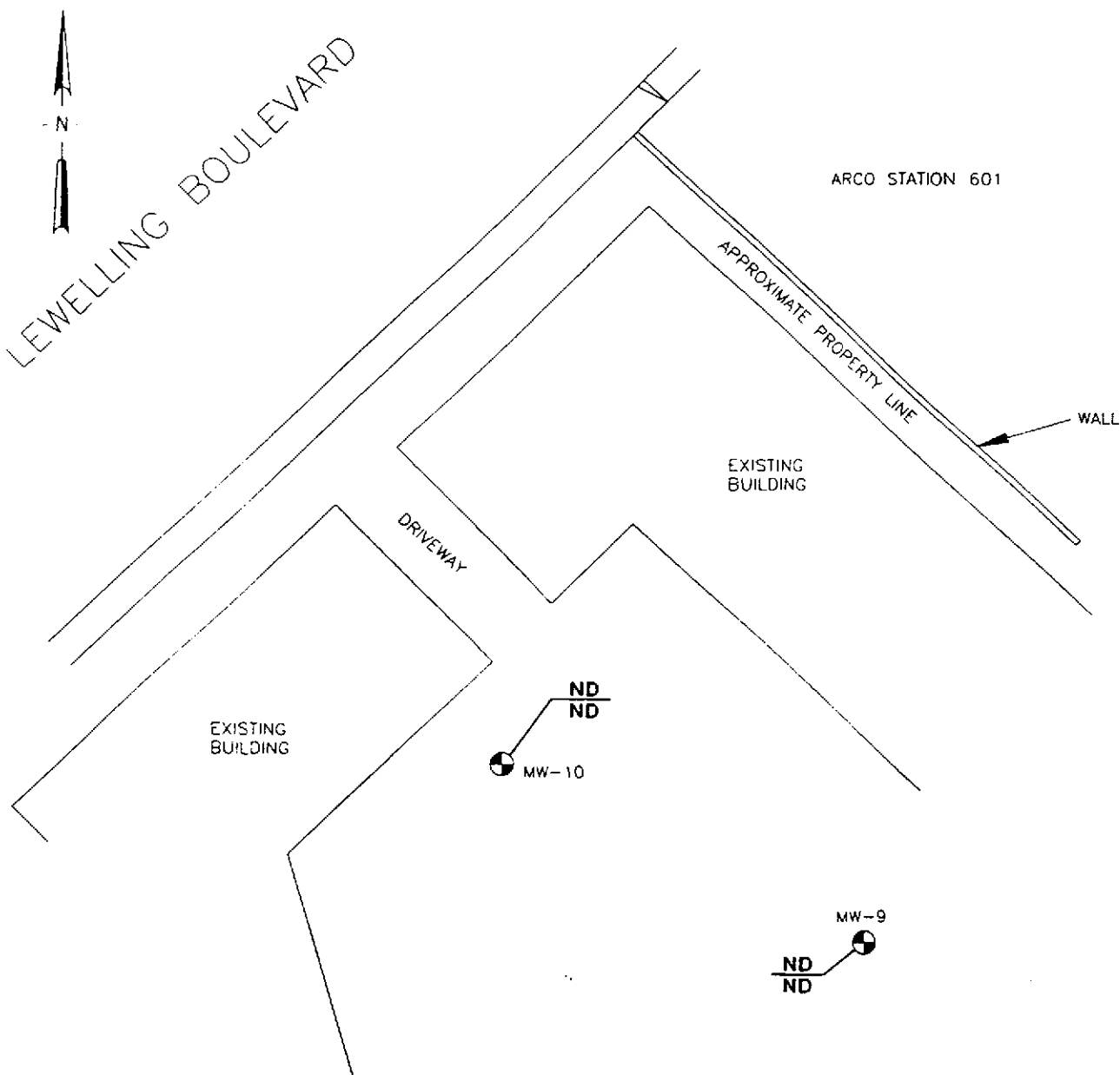
EMCON


John C. Young
Project Manager

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

cc: ~~Scott S. Young, CHCSA~~
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, 1984.



EMCON

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

GENERALIZED SITE PLAN

FIGURE

1

PROJECT NO.
805-121.02



September 25, 1995

Service Request No: S951088

John Young
EMCON
1921 Ringwood Avenue
San Jose, CA 95131

Re: 0805-121.02 / TO# 17075.00 / 601 San Leandro

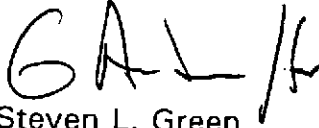
Dear Mr. Young:

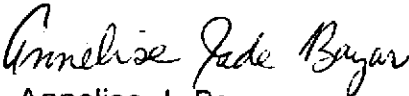
The following pages contain analytical results for sample(s) received by the laboratory on August 31, 1995. Results of sample analyses are followed by Appendix A which contains sample custody documentation and quality assurance deliverables requested for this project. The work requested has been assigned the Service Request No. listed above - to help expedite our service please refer to this number when contacting the laboratory.

Analytical results were produced by procedures consistent with Columbia Analytical Services' (CAS) Quality Assurance Manual (with any deviations noted). Signature of this CAS Analytical Report below confirms that pages 2 through 7, following, have been thoroughly reviewed and approved for release in accord with CAS Standard Operating Procedure ADM-DatRev3.

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

Sincerely:


Steven L. Green
Project Chemist


Annelise J. Bazar
Regional QA Coordinator

SLG/ajb

COLUMBIA ANALYTICAL SERVICES, Inc.

Acronyms

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

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: ARCO Products Company
Project: 0805-121.02/TO# 17075.00/ 601 San Leandro
Sample Matrix: Water

Service Request: S951088
Date Collected: 8/31/95
Date Received: 8/31/95
Date Extracted: ND

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

Sample Name:	MW-9 (16)	MW-10 (18)	Method Blank
Lab Code:	S951088-002	S951088-003	S950911-WB
Date Analyzed:	9/11/95	9/11/95	9/11/95

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

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 0805-121.02/TO# 17075.00/ 601 San Leandro
Sample Matrix: Water

Service Request: S951088
Date Collected: 8/31/95
Date Received: 8/31/95
Date Extracted: ND
Date Analyzed: 9/11/95

Surrogate Recovery Summary
BTEX, MTBE 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)	S951088-002	96
MW-10 (18)	S951088-003	97
MS	S951088-001MS	96
DMS	S951088-001DMS	97
Method Blank	S950911-WB	92

CAS Acceptance Limits: 69-116

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 0805-121.02/TO# 17075.00/ 601 San Leandro

Service Request: S951088
Date Analyzed: 9/11/95

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

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
Benzene	25	24.4	98	85-115
Toluene	25	24.3	97	85-115
Ethylbenzene	25	24.0	96	85-115
Xylenes, Total	75	72.6	97	85-115
Gasoline	250	248	99	90-110
Methyl-tert-butyl Ether	50	50.6	101	85-115

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 0805-121.02/TO# 17075.00/ 601 San Leandro
Sample Matrix: Water

Service Request: S951088
Date Collected: 8/31/95
Date Received: 8/31/95
Date Extracted: ND
Date Analyzed: 9/11-14/95

Matrix Spike/Duplicate Matrix Spike Summary

BTE

EPA Methods 5030/8020

Units: ug/L (ppb)

Sample Name: Batch QC
Lab Code: S951088-001

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	24.7	24.8	99	99	75-135	<1
Toluene	25	25	ND	24.6	24.6	98	98	73-136	<1
Ethylbenzene	25	25	ND	24.3	24.6	97	98	69-142	1

ARCO Products Company

Division of AtlanticRichfield Company

Task Order No. 17075.00

Chain of Custody

ARCO Facility no. 601	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	Contract number
Consultant name EMCON	Address (Consultant) 1921 Ringwood Ave San Jose, CA 95131		Method of shipment Sampler will deliver
		Fax no. (Consultant) (408) 453-0457	Special detection Limit/reporting Lowest Possible

- 1005567

Sample ID.	Lab no.	Container no.	Matrix			Preservation		Sampling date	Sampling time	BTEX 822 EPA 820	TPH Modified 8215 Gas 4121 4122	Oil and Grease 4121 4122	TPH EPA 418 / 824505	EPA 601/8010	EPA 624/8240	EPA 625 (270)	TCLP Metals 4121 4122	Cadmium EPA 8210/8210	TLC 4121 4122	Lead 4121 4122	Total Metals (Cd, Cu, Zn, Pb)
			Soil	Water	Other	Ice	Acid														
1 MW-7(9)		2		X		X	HCL	8/31/95	1250	X											
2 MW-9(14)		2		X		X	HCL		1220	X											
3 MW-10(9)		2		X		X	HCL		1235	X											
4 MW-12(11)		2		X		X	HCL		1300	X											
5 MW-15(10)		2		X		X	HCL		1316	X											
6 MW-11(11)		2		X		X	HCL		1330	X											
7 MW-8(10)		10		X		X	HCL		1358	X	X		X					X	X		
8 MW-2(12)		2		X		X	HCL		1417	X											
9 MW-4(8)		2		X		X	HCL		1428	X											
10 MW-6(9)		2		X		X	HCL		1436	X											
11 MW-5(10)		2		X		X	HCL		1446	X											
MW-11				X		X	HCL			X											
MW-3(1)				X		X	HCL			X											

Cancelled per John Young 9/2/95

NO SAMPLES TAKEN WELL CONTAINED PRODUCT

NO SAMPLES TAKEN WELL CONTAINED PRODUCT

Special detection Limit/reporting	Lowest Possible
Special QAO	As Normal
Remarks	2-40ml HCL VOA 2 1 Liter NP Glass 2 500ml HNO ₃ LPE 2 1 Liter HCL Glass MW-1 or 8 Add MRE by RORO #0405-12102 Lab number 3351 39501088
Turnaround time	Priority Rush 1 Business Day ☐ Rush 2 Business Days ☐ Expedited 5 Business Days ☐ Standard 10 Business Days ☒

Condition of sample: sk Intub.	Temperature received: cool pack.
Relinquished by sampler Mike R...	Received by (James Brown) 45-5J
Relinquished by	Received by
Relinquished by (James Brown)	Received by (James Brown)
Date 8/31/95 Time 1625	Date 9-1-95 Time 900am

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

APP-3292 (2-91)

CAS-3: GBT EX TPH-D

CAS-L: 418.1, 820, P0/GFAA 10P-A

Due 9/15

**EMCON**

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

November 30, 1995
Project 20805-121.002

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

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

Dear Mr. Whelan:

This letter presents the results of the third 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.

EMCON performed the third quarter 1995 groundwater monitoring event on August 31, 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-2, MW-4 through MW-12, and MW-15 for laboratory analysis, and (3) directing a state-certified laboratory to analyze the groundwater samples. Floating product was observed in wells MW-1 (0.01 foot thick) and MW-3 (0.02 foot thick) on August 31, 1995, therefore these wells were not sampled during the third quarter of 1995. Copies of all field data sheets from the third quarter 1995 groundwater monitoring event are included in Appendix A.

ANALYTICAL PROCEDURES

Groundwater samples collected during third quarter 1995 monitoring were analyzed for total petroleum hydrocarbons as gasoline (TPHG); benzene, toluene, ethylbenzene, and total xylenes (BTEX); and methyl-tert-butyl ether (MTBE). 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 *Leaking Underground Fuel Tank (LUFT) Field Manual* (State Water Resources Control Board, October 1989). Samples were analyzed for BTEX and MTBE 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-8 were also analyzed for semivolatile organic compounds (SVOCs) by USEPA method 3520/8270; total recoverable petroleum hydrocarbons (TRPH) by USEPA method 418.1; 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 third 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 analysis of petroleum hydrocarbons and their constituents. Table 4 summarizes historical laboratory data for metals analyses. 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 third quarter 1995 analytical results and chain-of-custody documentation are included in Appendix B.

Groundwater elevation data collected on August 31, 1995, indicate that groundwater beneath the site flows south-southwest with an approximate hydraulic gradient of 0.005 foot per foot. Figure 2 illustrates groundwater contours and analytical data for the third quarter of 1995.

Groundwater samples from wells MW-7, MW-9, MW-10, MW-12, and MW-15 did not contain detectable concentrations of TPHG, benzene, or MTBE. Samples from wells MW-8 and MW-11 contained 1,400 and 680 micrograms per liter ($\mu\text{g/L}$) of TPHG, respectively, but did not contain detectable concentrations of benzene. Samples from well MW-8 also contained 520 $\mu\text{g/L}$ of MTBE, but samples from well MW-11 did not contain detectable concentrations of MTBE. Groundwater samples from wells MW-2, MW-4, MW-5, and MW-6 contained concentrations of TPHG from 5,000 to 53,000 $\mu\text{g/L}$ and concentrations of benzene from 280 to 12,000 $\mu\text{g/L}$, but did not contain detectable concentrations of MTBE. Wells MW-1 and MW-3 contained floating product and were not sampled.

Additional samples from well MW-8 contained detectable concentrations of TRPH (900 $\mu\text{g/L}$), chromium (40 $\mu\text{g/L}$), lead (16 $\mu\text{g/L}$), nickel (50 $\mu\text{g/L}$), zinc (90 $\mu\text{g/L}$), naphthalene (62 $\mu\text{g/L}$), and 2-methylnaphthalene (8 $\mu\text{g/L}$).

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 third quarter of 1995 and those anticipated for the fourth quarter of 1995.

Third Quarter 1995 Activities

- Prepared and submitted quarterly groundwater monitoring report for second quarter 1995.
- Performed quarterly groundwater monitoring for third quarter 1995.

Mr. Michael Whelan
November 30, 1995
Page 4

Project 20805-121.002

Work Anticipated for Fourth Quarter 1995

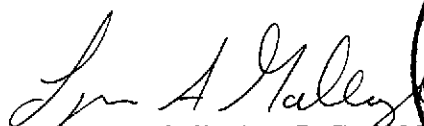
- Prepare and submit quarterly groundwater monitoring report for third quarter 1995.
- Perform quarterly groundwater monitoring for fourth quarter 1995.

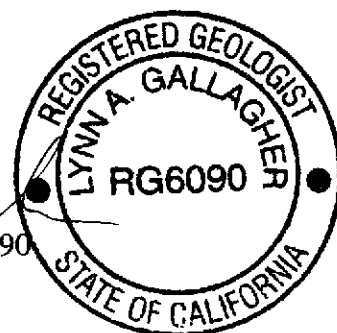
Please call if you have questions.

Sincerely,

EMCON


David Larsen
Project Coordinator


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



Attachments: Table 1 - Groundwater Monitoring Data, Third Quarter 1995
Table 2 - Historical Groundwater Elevation Data
Table 3 - Historical Groundwater Analytical Data, Petroleum Hydrocarbons and Their Constituents
Table 4 - Historical Groundwater Analytical Data, Metals
Table 5 - Historical Groundwater Analytical Data, Volatile and Semivolatile Organic Compounds
Table 6 - Approximate Cumulative Floating Product Recovered, Monitoring Well MW-1
Figure 1 - Site Location
Figure 2 - Groundwater Data, Third Quarter 1995
Appendix A - Field Data Sheets, Third Quarter 1995 Groundwater Monitoring Event
Appendix B - Analytical Results and Chain-of-Custody Documentation, Third Quarter 1995

cc: 
Kevin Graves, RWQCB-SFBR
Mike Bakaldin, SLFD

Table 1
Groundwater Monitoring Data
Third Quarter 1995

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

Date: 11-30-95

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Groundwater Flow Direction	Hydraulic Gradient	Water Sample Field Date	TPHG LUFT Method	Benzene EPA 8020	Toluene EPA 8020	Ethylbenzene EPA 8020	Total Xylenes EPA 8020	MTBE EPA 8020	MTBE EPA 8240	TRPH EPA 418.1	TPHD LUFT Method
		ft-MSL	feet	ft-MSL	feet	MWN	ft/ft		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-1	08-31-95	22.26	8.12	** 14.15	0.01	SSW	0.005	08-31-95	Not sampled: well contained floating product								
MW-2	08-31-95	21.33	7.18	14.15	ND	SSW	0.005	08-31-95	5000	280	18	120	140	<50*	--	--	--
MW-3	08-31-95	20.11	6.60	** 13.52	0.02	SSW	0.005	08-31-95	Not sampled: well contained floating product								
MW-4	08-31-95	20.75	7.75	13.00	ND	SSW	0.005	08-31-95	9000	2000	270	270	1400	<100*	--	--	--
MW-5	08-31-95	20.90	6.80	14.10	ND	SSW	0.005	08-31-95	53000	12000	1600	1000	6000	<500*	--	--	--
MW-6	08-31-95	22.08	7.92	14.16	ND	SSW	0.005	08-31-95	26000	8000	<100*	1900	900	<500*	--	--	--
MW-7	08-31-95	22.89	9.09	13.80	ND	SSW	0.005	08-31-95	<50	<0.5	<0.5	0.6	<0.5	<3	--	--	--
MW-8	08-31-95	20.97	7.35	13.62	ND	SSW	0.005	08-31-95	1400	<3*	<3*	5	<3*	520	--	900	--
MW-9	08-31-95	20.89	8.10	12.79	ND	SSW	0.005	08-31-95	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	--
MW-10	08-31-95	21.12	8.17	12.95	ND	SSW	0.005	08-31-95	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	--
MW-11	08-31-95	22.38	8.18	14.20	ND	SSW	0.005	08-31-95	680	<0.5	<0.5	4	1.8	<3	--	--	--
MW-12	08-31-95	22.77	8.55	14.22	ND	SSW	0.005	08-31-95	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	--
MW-13	08-31-95	22.45	7.58	14.87	ND	SSW	0.005	08-31-95	Not sampled: not scheduled for chemical analysis								
MW-14	08-31-95	22.99	9.05	13.94	ND	SSW	0.005	08-31-95	Not sampled: not scheduled for chemical analysis								
MW-15	08-31-95	19.19	6.18	13.01	ND	SSW	0.005	08-31-95	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	--

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

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

ft/ft: foot per foot

TPHG: total petroleum hydrocarbons as gasoline, California DHS LUFT Method

µg/L: micrograms per liter

EPA: United States Environmental Protection Agency

MTBE: methyl-tert-butyl ether

TRPH: total recoverable petroleum hydrocarbons

TPHD: total petroleum hydrocarbons as diesel, California DHS LUFT Method

** [corrected elevation (Z)] = Z + (h * 0.73) where: Z = measured elevation, h = floating product thickness, 0.73 = density ratio of oil to water

SSW: south-southwest

ND: none detected

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

--: not analyzed

Table 2
Historical Groundwater Elevation Data

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

Date: 11-30-95

Well Designation	Water Level Field Date	Top of Casing Elevation ft-MSL	Depth to Water feet	Groundwater Elevation ft-MSL	Floating Product Thickness feet	Groundwater Flow Direction MWN	Hydraulic Gradient foot/foot
MW-1	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
MW-1	08-31-95	22.26	8.12	** 14.15	0.01	SSW	0.005

Table 2
Historical Groundwater Elevation Data

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

Date: 11-30-95

Well Designation	Water Level Field Date	Top of Casing Elevation ft-MSL	Depth to Water feet	Groundwater Elevation ft-MSL	Floating Product Thickness feet	Groundwater Flow Direction MWN	Hydraulic Gradient foot/foot
MW-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
MW-2	08-31-95	21.33	7.18	14.15	ND	SSW	0.005

Table 2
Historical Groundwater Elevation Data

ARCO Service Station 601

712 Lewelling Boulevard, San Leandro, California

Date: 11-30-95

Well Designation	Water Level Field Date	Top of Casing Elevation ft-MSL	Depth to Water feet	Groundwater Elevation ft-MSL	Floating Product Thickness feet	Groundwater Flow Direction MWN	Hydraulic Gradient foot/foot
MW-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
MW-3	08-31-95	20.11	6.60	** 13.52	0.02	SSW	0.005

Table 2
Historical Groundwater Elevation Data

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

Date: 11-30-95

Well Designation	Water Level Field Date	Top of Casing Elevation ft-MSL	Depth to Water feet	Groundwater Elevation ft-MSL	Floating Product Thickness feet	Groundwater Flow Direction MWN	Hydraulic Gradient foot/foot
MW-4	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
MW-4	08-31-95	20.75	7.75	13.00	ND	SSW	0.005

Table 2
Historical Groundwater Elevation Data

ARCO Service Station 601

712 Lewelling Boulevard, San Leandro, California

Date: 11-30-95

Well Designation	Water Level Field Date	Top of Casing Elevation ft-MSL	Depth to Water feet	Groundwater Elevation ft-MSL	Floating Product Thickness feet	Groundwater Flow Direction MWN	Hydraulic Gradient foot/foot
MW-5	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
MW-5	08-31-95	20.90	6.80	14.10	ND	SSW	0.005

Table 2
Historical Groundwater Elevation Data

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

Date: 11-30-95

Well Designation	Water Level Field Date	Top of Casing Elevation ft-MSL	Depth to Water feet	Groundwater Elevation ft-MSL	Floating Product Thickness feet	Groundwater Flow Direction MWN	Hydraulic Gradient foot/foot
MW-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
MW-6	08-31-95	22.08	7.92	14.16	ND	SSW	0.005

Table 2
Historical Groundwater Elevation Data

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

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Well Designation	Water Level Field Date	Top of Casing Elevation ft-MSL	Depth to Water feet	Groundwater Elevation ft-MSL	Floating Product Thickness feet	Groundwater Flow Direction MWN	Hydraulic Gradient foot/foot
MW-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
MW-7	08-31-95	22.89	9.09	13.80	ND	SSW	0.005

Table 2
Historical Groundwater Elevation Data

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

Date: 11-30-95

Well Designation	Water Level Field Date	Top of Casing Elevation ft-MSL	Depth to Water feet	Groundwater Elevation ft-MSL	Floating Product Thickness feet	Groundwater Flow Direction MWN	Hydraulic Gradient foot/foot
MW-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
MW-8	08-31-95	20.97	7.35	13.62	ND	SSW	0.005

Table 2
Historical Groundwater Elevation Data

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

Date: 11-30-95

Well Designation	Water Level Field Date	Top of Casing Elevation ft-MSL	Depth to Water feet	Groundwater Elevation ft-MSL	Floating Product Thickness feet	Groundwater Flow Direction MWN	Hydraulic Gradient foot/foot
MW-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-9	08-31-95	20.89	8.10	12.79	ND	SSW	0.005
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-10	08-31-95	21.12	8.17	12.95	ND	SSW	0.005
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
MW-11	08-31-95	22.38	8.18	14.20	ND	SSW	0.005

Table 2
Historical Groundwater Elevation Data

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

Date: 11-30-95

Well Designation	Water Level Field Date	Top of Casing Elevation ft-MSL	Depth to Water feet	Groundwater Elevation ft-MSL	Floating Product Thickness feet	Groundwater Flow Direction MWN	Hydraulic Gradient foot/foot
MW-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-12	08-31-95	22.77	8.55	14.22	ND	SSW	0.005
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
MW-13	08-31-95	22.45	7.58	14.87	ND	SSW	0.005

Table 2
Historical Groundwater Elevation Data

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

Date: 11-30-95

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Groundwater Flow Direction	Hydraulic Gradient
		ft-MSL	feet	ft-MSL	feet	MWN	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-14	08-31-95	22.99	9.05	13.94	ND	SSW	0.005
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
MW-15	08-31-95	19.19	6.18	13.01	ND	SSW	0.005

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

SSW: south-southwest

** : [corrected elevation (Z')] = Z + (h * 0.73) where: Z = measured elevation, h = floating product thickness, 0.73 = density ratio of oil to water

DRY: dry well; groundwater was not detected

Table 3
Historical Groundwater Analytical Data
Petroleum Hydrocarbons and Their Constituents

ARCO Service Station 601

712 Lewelling Boulevard, San Leandro, California

Date: 11-29-95

Well Designation	Water Sample Field Date	TPHG LUFT Method µg/L	Benzene EPA 8020 µg/L	Toluene EPA 8020 µg/L	Ethylbenzene EPA 8020 µg/L	Total Xylenes EPA 8020 µg/L	MTBE EPA 8020 µg/L	MTBE EPA 8240 µg/L	TRPH EPA 418.1 µg/L	TPHD LUFT Method 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	--	--	48000	6200^
MW-1	06-01-95	250000	7100	950	3500	21000	--	--	38000	190000^
MW-1	08-31-95	Not sampled: well contained floating product								
MW-2	07-18-90	35000	3800	2900	690	3600	--	--	<5000	850^
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	--	--	<5000	--
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	--	--	--	--
MW-2	08-31-95	5000	280	18	120	140	<50*	--	--	--

Table 3
Historical Groundwater Analytical Data
Petroleum Hydrocarbons and Their Constituents

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

Date: 11-29-95

Well Designation	Water Sample Field Date	TPHG LUFT Method µg/L	Benzene EPA 8020 µg/L	Toluene EPA 8020 µg/L	Ethylbenzene EPA 8020 µg/L	Total Xylenes EPA 8020 µg/L	MTBE EPA 8020 µg/L	MTBE EPA 8240 µg/L	TPPH EPA 418.1 µg/L	TPHD LUFT Method µg/L
MW-3	07-18-90	--	--	--	--	--	--	--	<5000	--
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-3	08-31-95	Not sampled: well contained floating product								
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	--	--	--	--
MW-4	08-31-95	9000	2000	270	270	1400	<100*	--	--	--

Table 3
Historical Groundwater Analytical Data
Petroleum Hydrocarbons and Their Constituents

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

Date: 11-29-95

Well Designation	Water Sample Field Date	TPHG LUFT Method µg/L	Benzene EPA 8020 µg/L	Toluene EPA 8020 µg/L	Ethylbenzene EPA 8020 µg/L	Total Xylenes EPA 8020 µg/L	MTBE EPA 8020 µg/L	MTBE EPA 8240 µg/L	TRPH EPA 418.1 µg/L	TPHD LUFT Method 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-5	08-31-95	53000	12000	1600	1000	6000	<500*	--	--	--
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	--	--	--	--
MW-6	08-31-95	26000	8000	<100*	1900	900	<500*	--	--	--

Table 3
Historical Groundwater Analytical Data
Petroleum Hydrocarbons and Their Constituents

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

Date: 11-29-95

Well Designation	Water Sample Field Date	TPHG LUFT Method	Benzene EPA 8020	Toluene EPA 8020	Ethylbenzene EPA 8020	Total Xylenes EPA 8020	MTBE EPA 8020	MTBE EPA 8240	TRPH EPA 418.1	TPHD LUFT Method
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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-7	08-31-95	<50	<0.5	<0.5	0.6	<0.5	<3	--	--	--
MW-8	06-10-91	5800	73	7.2	150	21	--	--	<5000	--
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*	--	--	--	460^
MW-8	11-16-92	2600	4	<2.5*	21	5.2	--	--	1200	1100^
MW-8	02-16-93	8700	<5*	<5*	200	<5*	--	--	150000	5300^
MW-8	05-13-93	2300	<5*	<5*	42	<5*	--	--	2000	2300^
MW-8	08-17-93	1700	1.8	<1.3*	16	1.2	--	--	1200	1000^
MW-8	11-08-93	1200	2.4	<1*	19	2.3	--	--	4200	<1000
MW-8	02-14-94	3600	3	<1*	72	<1*	--	--	2000	3900^
MW-8	05-05-94	2100	<2.5*	<2.5*	8.3	<2.5*	--	--	700	440^
MW-8	08-04-94	1200	1.5	<1*	6.7	<1*	--	--	700	<50
MW-8	11-20-94	2300	1.2	1.1	20	2.2	--	--	<500	2100^
MW-8	03-17-95	5400	<5*	<5*	35	<5*	--	--	--	--
MW-8	06-01-95	2600	<2.5*	<2.5*	15	<2.5*	--	--	--	--
MW-8	08-31-95	1400	<3*	<3*	5	<3*	520	--	900	--

Table 3
Historical Groundwater Analytical Data
Petroleum Hydrocarbons and Their Constituents

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

Date: 11-29-95

Well Designation	Water Sample Field Date	TPHC LUFT Method µg/L	Benzene EPA 8020 µg/L	Toluene EPA 8020 µg/L	Ethylbenzene EPA 8020 µg/L	Total Xylenes EPA 8020 µg/L	MTBE EPA 8020 µg/L	MTBE EPA 8240 µg/L	TRPH EPA 418.1 µg/L	TPHD LUFT Method 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-9	08-31-95	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	--
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-10	08-31-95	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	--
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	--	--	--	--
MW-11	08-31-95	680	<0.5	<0.5	4	1.8	<3	--	--	--

Table 3
Historical Groundwater Analytical Data
Petroleum Hydrocarbons and Their Constituents

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

Date: 11-29-95

Well Designation	Water Sample Field Date	TPHG LUFT Method µg/L	Benzene EPA 8020 µg/L	Toluene EPA 8020 µg/L	Ethylbenzene EPA 8020 µg/L	Total Xylenes EPA 8020 µg/L	MTBE EPA 8020 µg/L	MTBE EPA 8240 µg/L	TRPH EPA 418.1 µg/L	TPHD LUFT Method 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-12	08-31-95	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	--
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-13	08-31-95	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								
MW-14	08-31-95	Not sampled: not scheduled for chemical analysis								

Table 3
Historical Groundwater Analytical Data
Petroleum Hydrocarbons and Their Constituents

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

Date: 11-29-95

Well Designation	Water Sample Field Date	TPHG LUFT Method µg/L	Benzene EPA 8020 µg/L	Toluene EPA 8020 µg/L	Ethylbenzene EPA 8020 µg/L	Total Xylenes EPA 8020 µg/L	MTBE EPA 8020 µg/L	MTBE EPA 8240 µg/L	TRPH EPA 418.1 µg/L	TPHD LUFT Method 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								
MW-15	08-31-95	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	--

TPHG: total petroleum hydrocarbons as gasoline, California DHS LUFT Method

µg/L: micrograms per liter

EPA: United States Environmental Protection Agency

MTBE: Methyl-tert-butyl ether

TRPH: total recoverable petroleum hydrocarbons

TPHD: total petroleum hydrocarbons as diesel, California DHS LUFT Method

--: not analyzed

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

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

Table 4
Historical Groundwater Analytical Data
Metals

ARCO Service Station 601

712 Lewelling Boulevard, San Leandro, California

Date: 11-29-95

Well Designation	Water Sample Field Date	Cadmium EPA 6010 µg/L	Chromium EPA 6010 µg/L	Lead EPA 7421 µg/L	Nickel EPA 6010 µg/L	Zinc EPA 6010 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	<5	20	20	<40	60
MW-1	06-01-95	<5	20	22	70	100
MW-1	08-31-95	Not sampled: well contained floating product				
MW-2	07-18-90	<20	<50	50	--	120
MW-2	10-15-90	--	--	--	--	--
MW-2	01-09-91	--	--	--	--	--
MW-2	04-16-91	--	--	--	--	--
MW-2	06-10-91	--	--	--	--	--
MW-2	10-10-91	<10	<10	11	72	91
MW-2	03-23-92	Not analyzed: sampling for additional parameters was discontinued				
MW-3	07-18-90	--	--	--	--	--
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				
MW-4	06-10-91	Not analyzed: sampling for additional parameters was not initiated				

Table 4
Historical Groundwater Analytical Data
Metals

ARCO Service Station 601

712 Leelling Boulevard, San Leandro, California

Date: 11-29-95

Well Designation	Water Sample Field Date	Cadmium EPA 6010 µg/L	Chromium EPA 6010 µg/L	Lead EPA 7421 µg/L	Nickel EPA 6010 µg/L	Zinc EPA 6010 µg/L
MW-5	06-10-91	--	--	--	--	--
MW-5	10-10-91	Not sampled: well contained floating product				
MW-5	03-23-92	--	--	--	--	--
MW-5	06-08-92	Not analyzed: sampling for additional parameters was discontinued				
MW-6	06-10-91	Not analyzed: sampling for additional parameters was not initiated				
MW-7	06-10-91	Not analyzed: sampling for additional parameters was not initiated				
MW-8	06-10-91	--	--	--	--	--
MW-8	10-10-91	--	--	--	--	--
MW-8	03-23-92	--	--	--	--	--
MW-8	06-08-92	--	--	--	--	--
MW-8	09-15-92	ND	59	18	78	128
MW-8	11-16-92	7	42	20	69	123
MW-8	02-16-93	<3	7	4	24	54
MW-8	05-13-93	<3	17	10	31	49
MW-8	08-17-93	<5	16	7	<40	180
MW-8	11-08-93	<5	50	25	60	100
MW-8	02-14-94	<5	<10	4	<40	20
MW-8	05-05-94	<3	<5	4	<20	60
MW-8	08-04-94	<3	6	3	<20	27
MW-8	11-20-94	<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				
MW-8	08-31-95	<5	40	16	50	90
MW-9	06-11-93	Not analyzed: sampling for additional parameters was not initiated				
MW-10	06-11-93	Not analyzed: sampling for additional parameters was not initiated				
MW-11	11-16-92	Not analyzed: sampling for additional parameters was not initiated				
MW-12	11-16-92	Not analyzed: sampling for additional parameters was not initiated				
MW-13	11-16-92	Not analyzed: sampling for additional parameters was not initiated				
MW-14	09-15-92	Not analyzed: sampling for additional parameters was not initiated				
MW-15	05-13-93	Not analyzed: sampling for additional parameters was not initiated				

EPA: United States Environmental Protection Agency

µg/L: micrograms per liter

-- : not analyzed

ND: none detected at or above the method reporting limit

Table 5
Historical Groundwater Analytical Data
Volatile and Semivolatile Organic Compounds

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

Date: 11-29-95

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 µg/L	1,2-Dichloroethane µg/L	1,1-Dichloroethane µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Total Xylenes µg/L	Naphthalene µg/L	2-Methylnaphthalene µg/L	Bis (2-ethylhexyl) Phthalate µg/L	Phenol µg/L	2,4-Di-methyl-phenol 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	--	--	--	--	--	--	--	1300	730	<50	ND	150
MW-1	06-01-95	--	--	--	--	--	--	--	2200	1700	<100	240	<100
MW-1	08-31-95	Not sampled; well contained floating product											

Table 5
Historical Groundwater Analytical Data
Volatile and Semivolatile Organic Compounds

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

Date: 11-29-95

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 µg/L	1,2-Dichloro-ethane µg/L	1,1-Dichloro-ethane µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Total Xylenes µg/L	Naphthalene µg/L	2-Methyl-naphthalene µg/L	Bis (2-ethylhexyl) Phthalate µg/L	Phenol µg/L	2,4-Di-methyl-phenol µg/L
MW-2	07-18-90	39	ND	ND	3200	2400	270	2900	340	170	ND	ND	ND
MW-2	10-15-90	18	ND	ND	--	--	--	--	--	--	--	--	--
MW-2	01-09-91	ND	6.5	ND	1700	1200	370	2400	--	--	--	--	--
MW-2	04-16-91	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	06-10-91	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	10-10-91	ND	1.7	ND	--	--	--	--	--	--	--	--	--
MW-2	03-23-92	Not analyzed: sampling for additional parameters was discontinued											

Table 5
Historical Groundwater Analytical Data
Volatile and Semivolatile Organic Compounds

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

Date: 11-29-95

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 µg/L	1,2-Dichloro-ethane µg/L	1,1-Dichloro-ethane µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Total Xylenes µg/L	Naphthalene µg/L	2-Methyl-naphthalene µg/L	Bis (2-ethylhexyl) Phthalate µg/L	Phenol µg/L	2,4-Di-methyl-phenol µg/L
MW-8	06-10-91	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	10-10-91	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	03-23-92	ND	ND	ND	23	<5.0*	450	23	--	--	--	--	--
MW-8	06-08-92	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	09-15-92	ND	ND	ND	--	--	--	--	ND	ND	6	ND	ND
MW-8	11-16-92	ND	ND	ND	--	--	--	--	32	ND	ND	ND	ND
MW-8	02-16-93	ND	ND	ND	--	--	--	--	730	130	ND	ND	ND
MW-8	05-13-93	ND	ND	ND	--	--	--	--	97	20	ND	ND	ND
MW-8	08-17-93	ND	ND	ND	--	--	--	--	26	ND	ND	ND	ND
MW-8	11-08-93	ND	ND	ND	--	--	--	--	20	ND	19	ND	ND
MW-8	02-14-94	--	--	--	--	--	--	--	350	65	ND	ND	ND
MW-8	05-05-94	<0.5	<0.5	0.7	--	--	--	--	23	<10	<10	ND	ND
MW-8	08-04-94	--	--	--	--	--	--	--	11	<10	10	ND	ND
MW-8	12-13-94	--	--	--	--	--	--	--	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											
MW-8	08-31-95	--	--	--	--	--	--	--	62	8	<5	<5	<5

EPA: United States Environmental Protection Agency

µg/L: micrograms per liter

-- : not analyzed

ND: not detected at or above the method detection limit

*: 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

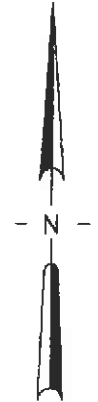
712 Lewelling Boulevard, San Leandro, California

Date: 11-29-95

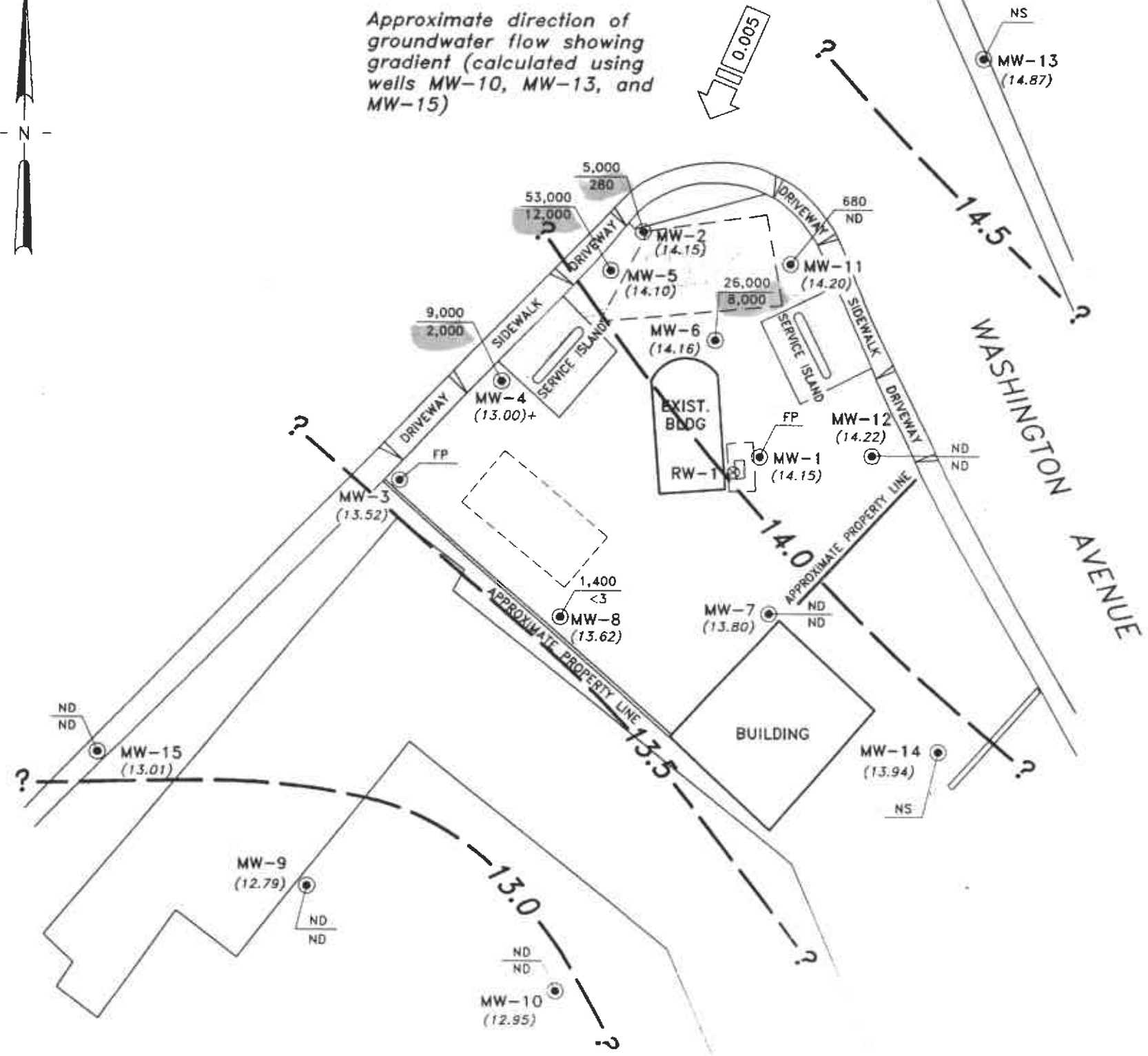
Well Desig- nation	Date	Floating Product Recovered gallons
MW-1	1991	3.43
MW-1	1992	0.02
MW-1	1993	0.00
MW-1	1994	0.00
MW-1	1995	0.00
1991 to 1995 Total:		3.45



G 805-121\000 REV 0 11/28/95 13:20:13 DD DJ



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
- (14.10) Groundwater elevation (Ft.-MSL) measured 8/31/95
- ? — Groundwater elevation contour (Ft.-MSL)
- 53,000
12,000 — TPHG, concentration in groundwater (ug/L); sampled 8/31/95
- Benzene — Benzene concentration in groundwater (ug/L); sampled 8/31/95
- + 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)
- FP Not sampled; well contained floating product
- NS Not sampled; not scheduled for chemical analysis
- <3 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
THIRD QUARTER 1995

FIGURE NO.

2

PROJECT NO.
805-121.02

APPENDIX A

**FIELD DATA SHEETS, THIRD QUARTER 1995
GROUNDWATER MONITORING EVENT**

FIELD REPORT
DEPTH TO WATER / FLOATING PRODUCT SURVEY

PROJECT # : 1775-208.01

STATION ADDRESS : 712 Lewelling Blvd.

DATE : 8/31/95

ARCO STATION # : 601

FIELD TECHNICIAN : M. Ross / M. G. Velazquez

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	9.09	9.09	NA	NA	9.5	
2	MW-9	OK	Yes	Yes	Yes	Yes	8.10	8.10	NA	NA	16.2	Water in box
3	MW-10	OK	Yes	Yes	Yes	Yes	8.17	8.17	NA	NA	18.8	
4	MW-12	OK	Yes	Yes	Yes	Yes	8.55	8.55	NA	NA	11.6 ³	
5	MW-13	OK	Yes	Yes	Yes	Yes	7.58	7.58	NA	NA	12.9	
6	MW-14	OK	Yes	Yes	Yes	Yes	9.05	9.05	NA	NA	13.0	
7	MW-15	OK	Yes	Yes	Yes	Yes	6.18	6.18	NA	NA	10.0	
8	MW-11	OK	Yes	Yes	Yes	Yes	8.18	8.18	NA	NA	11.8	
9	MW-8	OK	Yes	Yes	Yes	Yes	7.35	7.35	NA	NA	10.1	
10	MW-2	OK	Yes	Yes	Yes	Yes	7.18	7.18	NA	NA	12.2	
11	MW-4	OK	Yes	Yes	Yes	Yes	7.75	7.75	NA	NA	8.5	
12	MW-6	OK	Yes	Yes	Yes	Yes	7.75 7.92	7.92	NA	NA	8.6	
13	MW-5	OK	Yes	Yes	Yes	Yes	6.80	6.80	NA	NA	10.1	
14	MW-1	OK	Yes	Yes	Yes	Yes	8.12	8.12	NA 8.11	.01	12.0	
15	MW-3	OK	Yes	Yes	Yes	Yes	6.60	6.60	6.58	.02	11.9	

SURVEY POINTS ARE TOP OF WELL CASINGS



EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

Rev. 3, 2/94

PROJECT NO: 1775-208.01

SAMPLE ID: MW-1

PURGED BY: M. Ross / M. Gallegos

CLIENT NAME: ARCO 601

SAMPLED BY: M. Ross / M. Gallegos

LOCATION: San Leandro

TYPE: Ground Water ☒ Surface Water ☐ Treatment Effluent ☐ Other ☐

CASING DIAMETER (inches): 2 ☐ 3 ☐ 4 ☒ 4.5 ☐ 6 ☐ Other ☐

CASING ELEVATION (feet/MSL): NA VOLUME IN CASING (gal.): NA
DEPTH TO WATER (feet): 8 ft NA CALCULATED PURGE (gal.): NA
DEPTH OF WELL (feet): NA ACTUAL PURGE VOL (gal.): NA

DATE PURGED: 8/31/95

Start (2400 Hr) NA

End (2400 Hr) NA

DATE SAMPLED: 8/31/95

Start (2400 Hr) NA

End (2400 Hr) NA

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
	<u>WELL</u>	<u>CONTAINED</u>	<u>PRODUCT</u>	<u>DID</u>	<u>NOT</u>	
	<u>Purge</u>	<u>or</u>	<u>Sample</u>			

D. O. (ppm): NA

ODOR: NA

NA
(COBALT 0 - 500)

NA
(NTU 0 - 200
or 0 - 1000)

Field QC samples collected at this well:

Parameters field filtered at this well:

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

REMARKS: WELL CONTAINED PRODUCT DID NO PURGE OR
SAMPLE

Meter Calibration: Date: 8/31/95 Time: 1145 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: SG

Page 1 of _____



EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

Rev. 3, 2/94

PROJECT NO: 1775-208.21

SAMPLE ID: MW-2 (12) ^{1.96}

PURGED BY: M. Ross / M. Bellows

CLIENT NAME: ARCO 601

SAMPLED BY: M. Ross / M. Bellows

LOCATION: SAN LEANDRO

TYPE: Ground Water ☒ Surface Water ☐ Treatment Effluent ☐ Other ☐

CASING DIAMETER (inches): 2 ☐ 3 ☐ 4 ☒ 4.5 ☐ 6 ☐ Other ☐

CASING ELEVATION (feet/MSL): NA VOLUME IN CASING (gal.): 3.27
DEPTH TO WATER (feet): 7.18 CALCULATED PURGE (gal.): 9.83
DEPTH OF WELL (feet): 12.7 ACTUAL PURGE VOL (gal.): 10.0

DATE PURGED: 8/31/95

Start (2400 Hr) 1408

End (2400 Hr) 1414

DATE SAMPLED: 8/31/95

Start (2400 Hr) 1417

End (2400 Hr) —

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. ($\mu\text{mhos/cm @ } 25^\circ\text{C}$)	TEMPERATURE ($^\circ\text{F}$)	COLOR (visual)	TURBIDITY (visual)
<u>1410</u>	<u>3.5</u>	<u>6.73</u>	<u>1330</u>	<u>76.0</u>	<u>clear</u>	<u>light</u>
<u>1412</u>	<u>7.0</u>	<u>6.82</u>	<u>1565</u>	<u>75.3</u>	<u>"</u>	<u>"</u>
<u>1414</u>	<u>10.0</u>	<u>6.83</u>	<u>1568</u>	<u>74.7</u>	<u>"</u>	<u>"</u>

D. O. (ppm): NA

ODOR: Strong

NA

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

Other:

WELL INTEGRITY: GOOD

LOCK #: ARCO

REMARKS: all samples taken

Meter Calibration: Date: 8/31/95 Time: 1145 Meter Serial #: 8211 Temperature $^\circ\text{F}$:

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

Location of previous calibration: MW-7

Signature: M. Ross

Reviewed By: SJ

Page 2 of



EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

Rev. 3, 2/94

PROJECT NO: 1775-202.01

SAMPLE ID: MW-3

PURGED BY: M. Ross / M. Gallejos

CLIENT NAME: ARCO 601

SAMPLED BY: M. Ross / M. Gallejos

LOCATION: San Leandro

TYPE: Ground Water ☒ Surface Water ☐ Treatment Effluent ☐ Other ☐

CASING DIAMETER (inches): 2 ☐ 3 ☐ 4 ☒ 4.5 ☐ 6 ☐ Other ☐

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

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

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

DATE PURGED: 8/31/95

Start (2400 Hr) NA End (2400 Hr) NA

DATE SAMPLED: 8/31/95

Start (2400 Hr) NA End (2400 Hr) —

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>WELL</u>	<u>CONTAINED</u>	<u>PRODUCT OIL</u>	<u>NOT PURGE or Sample</u>			

D. O. (ppm): NA ODOR: PS NA NA

Field QC samples collected at this well:
NA

Parameters field filtered at this well:
NA

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

PURGING EQUIPMENT

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

Other:

SAMPLING EQUIPMENT

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

Other:

WELL INTEGRITY: GOOD LOCK #: ARCO

REMARKS: DID NO PURGE or Sample well contained Product

Meter Calibration: Date: 8/31/95 Time: 1145 Meter Serial #: 9211 Temperature °F:
 (EC 1000 /) (DI) (pH 7 /) (pH 10 /) (pH 4 /)

Location of previous calibration: MW-7

Signature: M. Ross Reviewed By: SA Page 3 of



EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

Rev. 3, 2/94

1.96

PROJECT NO: 1775-208.01

SAMPLE ID: MW-4 (8')

PURGED BY: M. Ross / M. Guller

CLIENT NAME: ARCO 601

SAMPLED BY: M. Ross / M. Guller

LOCATION: SAN Geronimo

TYPE: Ground Water ☒ Surface Water ☐ Treatment Effluent ☐ Other ☐

CASING DIAMETER (inches): 2 ☐ 3 ☐ 4 ☒ 4.5 ☐ 6 ☐ Other ☐

CASING ELEVATION (feet/MSL): NA VOLUME IN CASING (gal.): .49
DEPTH TO WATER (feet): 7.75 CALCULATED PURGE (gal.): 1.77
DEPTH OF WELL (feet): 8.5 ACTUAL PURGE VOL (gal.): .25

DATE PURGED: 8/31/95 Start (2400 Hr) 1420 End (2400 Hr) 1422
DATE SAMPLED: 8/31/95 Start (2400 Hr) 1428 End (2400 Hr) —

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1421</u>	<u>.5</u>	<u>7.04</u>	<u>1434</u>	<u>73.5</u>	<u>Clear</u>	<u>light</u>
<u>—</u>	<u>1.0</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
<u>—</u>	<u>1.5</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
<u>1428</u>	<u>recharge</u>	<u>7.10</u>	<u>1424</u>	<u>74.2</u>	<u>↓</u>	<u>↓</u>
<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

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

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

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

REMARKS: Well dried at 15 gpm
all samples taken

Meter Calibration: Date: 8/31/95 Time: 1145 Meter Serial #: 921 Temperature °F: —
(EC 1000 — / —) (DI —) (pH 7 — / —) (pH 10 — / —) (pH 4 — / —)
Location of previous calibration: MW-7

Signature: M. Ross Reviewed By: SG Page 4 of —



EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

Rev. 3, 2/94

PROJECT NO: 1775-208-01

SAMPLE ID: MW-5 (10')

PURGED BY: M. ROSS / M. Gallagher

CLIENT NAME: ARCO 601

SAMPLED BY: M. ROSS / M. Gallagher

LOCATION: Savannah

TYPE: Ground Water ☒ Surface Water ☐ Treatment Effluent ☐ Other ☐

CASING DIAMETER (inches): 2 ☐ 3 ☐ 4 ☒ 4.5 ☐ 6 ☐ Other ☐

CASING ELEVATION (feet/MSL): NA VOLUME IN CASING (gal.): 2.15
DEPTH TO WATER (feet): 6.80 CALCULATED PURGE (gal.): 6.46
DEPTH OF WELL (feet): 10.1 ACTUAL PURGE VOL (gal.): 2.0

DATE PURGED: 8/31/95

Start (2400 Hr) 1439

End (2400 Hr) 1442

DATE SAMPLED: 8/31/95

Start (2400 Hr) 1444

End (2400 Hr) —

TIME (2400 Hr)	VOLUME (gal.)	pH (urate)	E.C. (umhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1442</u>	<u>2.0</u>	<u>6.86</u>	<u>1707</u>	<u>73.6</u>	<u>clear</u>	<u>Light</u>
<u>1447</u>	<u>recharge</u>	<u>6.80</u>	<u>1731</u>	<u>75.4</u>	<u>clear</u>	<u>"</u>

D. O. (ppm): NA

ODOR: strong

NA

Field QC samples collected at this well:

NA

Parameters field filtered at this well:

NA

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

PURGING EQUIPMENT

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

Other:

SAMPLING EQUIPMENT

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

Other:

WELL INTEGRITY: Good

LOCK #: ARCO

REMARKS: well dried out 2.0 gallons

all sample taken

Meter Calibration: Date: 8/31/95 Time: 1145 Meter Serial #: A011 Temperature °F:

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

Location of previous calibration: MW-7

Signature: M. Ross

Reviewed By: SA

Page 5 of



EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

Rev. 3, 2/94

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

SAMPLE ID: MW-6 (8')
CLIENT NAME: ARIS 601
LOCATION: San Geronimo

TYPE: Ground Water ☒ Surface Water ☐ Treatment Effluent ☐ Other ☐

CASING DIAMETER (inches): 2 ☐ 3 ☐ 4 ☒ 4.5 ☐ 6 ☐ Other ☐

CASING ELEVATION (feet/MSL): NA VOLUME IN CASING (gal.): 0.44
DEPTH TO WATER (feet): 7.92 CALCULATED PURGE (gal.): 1.33
DEPTH OF WELL (feet): 8.6 ACTUAL PURGE VOL (gal.): 1.5

DATE PURGED: 8/31/95 Start (2400 Hr) 1432 End (2400 Hr) 1433
DATE SAMPLED: 8/31/95 Start (2400 Hr) 1436 End (2400 Hr) —

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1433</u>	<u>0.5</u>	<u>6.88</u>	<u>1447</u>	<u>73.7</u>	<u>cloudy</u>	<u>MOD</u>
<u>1436</u>	<u>recharge</u>	<u>6.93</u>	<u>1417</u>	<u>73.4</u>	<u>↓</u>	<u>↓</u>

D. O. (ppm): NA ODOR: Strong NA NA
Field QC samples collected at this well: NA Parameters field filtered at this well: NA
(COBALT 0 - 500) (NTU 0 - 200 or 0 - 1000)

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 #: ARIS

REMARKS: Well dried at 05 gallow
all sample taken

Meter Calibration: Date: 8/31/95 Time: 1145 Meter Serial #: 9211 Temperature °F:
(EC 1000 /) (DI) (pH 7 /) (pH 10 /) (pH 4 /)

Location of previous calibration: MW-7

Signature: M. Ross Reviewed By: SG Page 6 of



EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

Rev. 3, 2/94

PROJECT NO: 1775-208.01

SAMPLE ID: MW-7 (91) 1.96

PURGED BY: M. ROSS / M. Gallegos

CLIENT NAME: ARCO 601

SAMPLED BY: M. ROSS / M. Gallegos

LOCATION: SAN LEANDRO

TYPE: Ground Water ☒ Surface Water ☐ Treatment Effluent ☐ Other ☐

CASING DIAMETER (inches): 2 ☐ 3 ☐ 4 ☒ 4.5 ☐ 6 ☐ Other ☐

CASING ELEVATION (feet/MSL): NA

VOLUME IN CASING (gal.): .26

DEPTH TO WATER (feet): 9.09

CALCULATED PURGE (gal.): .80

DEPTH OF WELL (feet): 9.5

ACTUAL PURGE VOL (gal.): .25

DATE PURGED: 8/31/95

Start (2400 Hr) 1243

End (2400 Hr) 1244

DATE SAMPLED: 8/31/95

Start (2400 Hr) 1250

End (2400 Hr) —

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1244</u>	<u>.25</u>	<u>6.94</u>	<u>1741</u>	<u>71.4</u>	<u>CLEAR</u>	<u>TRACE</u>
<u>well dried at</u>	<u>.25</u>	<u>at</u>	<u>.25</u>			

D. O. (ppm): NA

ODOR: NONE

NA

NA

Field QC samples collected at this well:

NA

Parameters field filtered at this well:

NA

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

Other:

WELL INTEGRITY: Good

LOCK #: ARCO

REMARKS: well dried at .25

all samples from
not enough water for recharge testing

Meter Calibration: Date: 8/31/95

Time: 1145

Meter Serial #: 9211

Temperature °F: 73.8

(EC 1000 222 / 1222) (DI —) (pH 7.03 / 1.722) (pH 10 9.6 / 1.222) (pH 4 3.97 / —)

Location of previous calibration: —

Signature: M. Ross

Reviewed By: GA

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EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

Rev. 3, 2/94

1.96

PROJECT NO: 1775-202.01

SAMPLE ID: MW-8 (10) 96

PURGED BY: M. Ross / M. Galloway

CLIENT NAME: ARCO 601

SAMPLED BY: M. Ross / M. Galloway

LOCATION: SAN GABRIEL

TYPE: Ground Water ☒ Surface Water ☐ Treatment Effluent ☐ Other ☐

CASING DIAMETER (inches): 2 ☐ 3 ☐ 4 ☒ 4.5 ☐ 6 ☐ Other ☐

CASING ELEVATION (feet/MSL): <u>NA</u>	VOLUME IN CASING (gal.): <u>1.79</u>
DEPTH TO WATER (feet): <u>7.35</u>	CALCULATED PURGE (gal.): <u>5.39</u>
DEPTH OF WELL (feet): <u>10.1</u>	ACTUAL PURGE VOL (gal.): <u>2.0</u>

DATE PURGED: <u>8/3/95</u>	Start (2400 Hr) <u>1343</u>	End (2400 Hr) <u>1346</u>
DATE SAMPLED: <u>8/3/95</u>	Start (2400 Hr) <u>1358</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>1346</u>	<u>2.0</u>	<u>6.93</u>	<u>846</u>	<u>72.4</u>	<u>cloudy</u>	<u>heavy</u>
<u>—</u>	<u>4.0</u>	<u>—</u>	<u>—</u>	<u>7</u>	<u>—</u>	<u>—</u>
<u>—</u>	<u>1.5</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
<u>1400</u>	<u>Recharge</u>	<u>6.87</u>	<u>813</u>	<u>73.4</u>	<u>—</u>	<u>—</u>

D. O. (ppm): <u>NA</u>	ODOR: <u>Strong</u>	<u>NA</u>	<u>NA</u>
------------------------	---------------------	-----------	-----------

Field QC samples collected at this well:
NA

Parameters field filtered at this well:
NA

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

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

REMARKS: well dried at 2.0 gallons purge
all samples taken

Meter Calibration: Date: 8/31/95 Time: 1145 Meter Serial #: 9017 Temperature °F: —
(EC 1000 — / —) (DI —) (pH 7 — / —) (pH 10 — / —) (pH 4 — / —)

Location of previous calibration: MW-7

Signature: M. Ross Reviewed By: SG Page 8 of —



EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

Rev. 3, 2/94

PROJECT NO: 1775-202.01

SAMPLE ID: MW-9 (16')⁷⁹

PURGED BY: M. ROSS / M. Gallegos

CLIENT NAME: ARCO 601

SAMPLED BY: M. ROSS / M. Gallegos

LOCATION: SAN LO ANGELES

TYPE: Ground Water ☒ Surface Water ☐ Treatment Effluent ☐ Other ☐

CASING DIAMETER (inches): 2 ☒ 3 ☐ 4 ☐ 4.5 ☐ 6 ☐ Other ☐

CASING ELEVATION (feet/MSL): NA

VOLUME IN CASING (gal.): 1.32

DEPTH TO WATER (feet): 8.10

CALCULATED PURGE (gal.): 3.96

DEPTH OF WELL (feet): 16.2

ACTUAL PURGE VOL (gal.): 4.0

DATE PURGED: 8/31/95

Start (2400 Hr) 1214

End (2400 Hr) 1218

DATE SAMPLED: 8/31/95

Start (2400 Hr) 1220

End (2400 Hr) —

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1215</u>	<u>1.5</u>	<u>7.02</u>	<u>1060</u>	<u>72.2</u>	<u>cloudy</u>	<u>mod</u>
<u>1217</u>	<u>3.0</u>	<u>7.07</u>	<u>1070</u>	<u>71.1</u>	<u>BRI</u>	<u>Heavy</u>
<u>1218</u>	<u>4.0</u>	<u>7.08</u>	<u>1069</u>	<u>70.9</u>	<u>u</u>	<u>u</u>

D. O. (ppm): NA

ODOR: None

NA
(COBALT 0 - 500)

NA
(NTU 0 - 200
or 0 - 1000)

Field QC samples collected at this well:

Parameters field filtered at this well:

PURGING EQUIPMENT

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

Other:

SAMPLING EQUIPMENT

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

Other:

WELL INTEGRITY: Good

LOCK #: ARCO

REMARKS: All Samples taken

Meter Calibration: Date: 8/31/95 Time: 1145 Meter Serial #: 9011 Temperature °F:

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

Location of previous calibration: MW-7

Signature: [Signature]

Reviewed By: [Signature]

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Rev. 3, 2/94

SAMPLE ID: MW-10 (18')

CLIENT NAME: ARLO 601

LOCATION: SAN LEANDRO

CASING DIAMETER (inches): 2 ☒ 3 ☐ 4 ☐ 4.5 ☐ 6 ☐ Other

VOLUME IN CASING (gal.): 1.73

CALCULATED PURGE (gal.): 5.20

ACTUAL PURGE VOL (gal.): 5.5

End (2400 Hr) 1232

End (2400 Hr)

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

(COBALT 0 - 500)

(NTU 0 - 200
or 0 - 1000)

SAMPLING EQUIPMENT

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

Other: _____

WELL INTEGRITY: Good Lock #: Area

REMARKS: P. 11 Sample taken

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

Location of previous calibration: *MW-7*

Signature: Mike Rose Reviewed By: SAH Page 10 of

Reviewed By: 3/1 Page 10 of

EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

Rev. 3, 2/94

1.96

PROJECT NO: 1775-208.01SAMPLE ID: MW-11 (11)PURGED BY: M. ROSS / M. GallowayCLIENT NAME: ARCO 601SAMPLED BY: M. ROSS / M. GallowayLOCATION: San LeandroTYPE: Ground Water ☒ Surface Water ☐ Treatment Effluent ☐ Other ☐CASING DIAMETER (inches): 2 ☐ 3 ☐ 4 ☒ 4.5 ☐ 6 ☐ Other ☐CASING ELEVATION (feet/MSL): NAVOLUME IN CASING (gal.): 2.36DEPTH TO WATER (feet): 8.18CALCULATED PURGE (gal.): 7.29DEPTH OF WELL (feet): 11.8ACTUAL PURGE VOL (gal.): 7.5DATE PURGED: 8/31/95Start (2400 Hr) 1323End (2400 Hr) 1327DATE SAMPLED: 8/31/95Start (2400 Hr) 1330End (2400 Hr) —

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (Visual)	TURBIDITY (Visual)
<u>1324</u>	<u>2.5</u>	<u>6.93</u>	<u>1574</u>	<u>73.5</u>	<u>BRN</u>	<u>Heavy</u>
<u>1325</u>	<u>5.0</u>	<u>6.97</u>	<u>1606</u>	<u>74.7</u>	<u>↓</u>	<u>↓</u>
<u>1327</u>	<u>7.5</u>	<u>6.97</u>	<u>1614</u>	<u>75.7</u>	<u>↓</u>	<u>↓</u>
—	—	—	—	—	—	—
—	—	—	—	—	—	—

D. O. (ppm): N/AODOR: ModerateN/AN/A

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

Other: —WELL INTEGRITY: GoodLOCK #: ARCOREMARKS: All samples takenMeter Calibration: Date: 8/31/95 Time: 1145 Meter Serial #: 9211 Temperature °F: —(EC 1000 — / —) (DI —) (pH 7 — / —) (pH 10 — / —) (pH 4 — / —)Location of previous calibration: MW-7Signature: M. RossReviewed By: SAPage 11 of —



EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

Rev. 3, 2/94

1.96

PROJECT NO: 1775-208.01

SAMPLE ID: MW-12 (11)

PURGED BY: M. Ross

CLIENT NAME: ARCO 601

SAMPLED BY: M. Ross

LOCATION: SAN LEANDRO

TYPE: Ground Water ☒ Surface Water ☐ Treatment Effluent ☐ Other ☐

CASING DIAMETER (inches): 2 ☐ 3 ☐ 4 ☒ 4.5 ☐ 6 ☐ Other ☐

CASING ELEVATION (feet/MSL): NA VOLUME IN CASING (gal.): 1.99

DEPTH TO WATER (feet): 8.55 CALCULATED PURGE (gal.): 597

DEPTH OF WELL (feet): 11.6 ACTUAL PURGE VOL (gal.): 6.0

DATE PURGED: 8/31/95

Start (2400 Hr) 1252

End (2400 Hr) 1257

DATE SAMPLED: 8/31/95

Start (2400 Hr) 1300

End (2400 Hr) —

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1254</u>	<u>2.0</u>	<u>6.92</u>	<u>1503</u>	<u>72.8</u>	<u>cloudy</u>	<u>MOD</u>
<u>1255</u>	<u>4.0</u>	<u>6.96</u>	<u>1519</u>	<u>73.3</u>	<u>"</u>	<u>"</u>
<u>1257</u>	<u>6.0</u>	<u>6.98</u>	<u>1515</u>	<u>73.5</u>	<u>"</u>	<u>"</u>

D. O. (ppm): NA

ODOR: none

NA
(COBALT 0 - 500)

NA
(NTU 0 - 200
or 0 - 1000)

Field QC samples collected at this well:
NA

Parameters field filtered at this well:
NO

PURGING EQUIPMENT

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

Other:

SAMPLING EQUIPMENT

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

Other:

WELL INTEGRITY: GOOD

LOCK #: ARCO

REMARKS: all samples taken

Meter Calibration: Date: 8/31/95 Time: 1145 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: SA

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EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

149

PROJECT NO: 1775-202.01SAMPLE ID: MW-15 (10')PURGED BY: M. Ross / M. GallegosCLIENT NAME: ARCO 601SAMPLED BY: M. Ross / M. GallegosLOCATION: San. LeandroTYPE: Ground Water ☒ Surface Water ☐ Treatment Effluent ☐ Other ☐CASING DIAMETER (inches): 2 ☒ 3 ☐ 4 ☐ 4.5 ☐ 6 ☐ Other ☐CASING ELEVATION (feet/MSL): NAVOLUME IN CASING (gal.): 0.62DEPTH TO WATER (feet): 6.18CALCULATED PURGE (gal.): 1.87DEPTH OF WELL (feet): 10.0ACTUAL PURGE VOL (gal.): 2.0DATE PURGED: 8/31/95Start (2400 Hr) 1311End (2400 Hr) 1315DATE SAMPLED: 8/31/95Start (2400 Hr) 1316End (2400 Hr) —

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	EC. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1312</u>	<u>1.0</u>	<u>7.22</u>	<u>892</u>	<u>70.8</u>	<u>BLEN</u>	<u>Heard</u>
<u>1313</u>	<u>1.5</u>	<u>7.24</u>	<u>897</u>	<u>71.2</u>	<u>↓</u>	<u>↓</u>
<u>1315</u>	<u>2.0</u>	<u>7.26</u>	<u>897</u>	<u>71.2</u>	<u>↓</u>	<u>↓</u>
—	—	—	—	—	—	—
—	—	—	—	—	—	—

D. O. (ppm): NAODOR: NoneNA
(COBALT 0 - 500)NA
(NTU 0 - 200
or 0 - 1000)

Field QC samples collected at this well:

NA

Parameters field filtered at this well:

NA

PURGING EQUIPMENT

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

Other: —

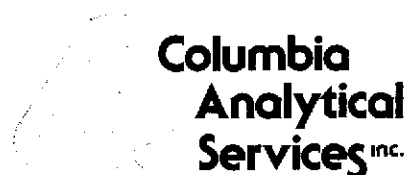
SAMPLING EQUIPMENT

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

Other: —WELL INTEGRITY: GoodLOCK #: ARCOREMARKS: All samples takenMeter Calibration: Date: 8/31/95 Time: 1145 Meter Serial #: 9011 Temperature °F: —(EC 1000 — / —) (DI —) (pH 7 — / —) (pH 10 — / —) (pH 4 — / —)Location of previous calibration: MW-7Signature: Mit RossReviewed By: SAPage 13 of —

APPENDIX B

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



September 25, 1995

Service Request No: S951088

John Young
EMCON
1921 Ringwood Avenue
San Jose, CA 95131

Re: 0805-121.02 / TO# 17075.00 / 601 San Leandro

Dear Mr. Young:

The following pages contain analytical results for sample(s) received by the laboratory on August 31, 1995. Results of sample analyses are followed by Appendix A which contains sample custody documentation and quality assurance deliverables requested for this project. The work requested has been assigned the Service Request No. listed above - to help expedite our service please refer to this number when contacting the laboratory.

Analytical results were produced by procedures consistent with Columbia Analytical Services' (CAS) Quality Assurance Manual (with any deviations noted). Signature of this CAS Analytical Report below confirms that pages 2 through 7, following, have been thoroughly reviewed and approved for release in accord with CAS Standard Operating Procedure ADM-DatRev3.

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

Sincerely:

A handwritten signature in black ink, appearing to read "SLG/jb", written over the printed name.

Steven L. Green
Project Chemist

A handwritten signature in black ink, appearing to read "Annelise J. Bazar", written over the printed name.

Annelise J. Bazar
Regional QA Coordinator

SLG/ajb

COLUMBIA ANALYTICAL SERVICES, Inc.

Acronyms

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

ACRONLST.DOC 7/14/95

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: ARCO Products Company
Project: 0805-121.02/TO# 17075.00/ 601 San Leandro
Sample Matrix: Water

Service Request: S951088
Date Collected: 8/31/95
Date Received: 8/31/95
Date Extracted: ND

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

Sample Name:	MW-9 (16)	MW-10 (18)	Method Blank
Lab Code:	S951088-002	S951088-003	S950911-WB
Date Analyzed:	9/11/95	9/11/95	9/11/95

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

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 0805-121.02/TO# 17075.00/ 601 San Leandro
Sample Matrix: Water

Service Request: S951088
Date Collected: 8/31/95
Date Received: 8/31/95
Date Extracted: ND
Date Analyzed: 9/11/95

Surrogate Recovery Summary
BTEX, MTBE 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)	S951088-002	96
MW-10 (18)	S951088-003	97
MS	S951088-001MS	96
DMS	S951088-001DMS	97
Method Blank	S950911-WB	92

CAS Acceptance Limits: 69-116

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 0805-121.02/TO# 17075.00/ 601 San Leandro

Service Request: S951088
Date Analyzed: 9/11/95

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

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
Benzene	25	24.4	98	85-115
Toluene	25	24.3	97	85-115
Ethylbenzene	25	24.0	96	85-115
Xylenes, Total	75	72.6	97	85-115
Gasoline	250	248	99	90-110
Methyl-tert-butyl Ether	50	50.6	101	85-115

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 0805-121.02/TO# 17075.00/ 601 San Leandro
Sample Matrix: Water

Service Request: S951088
Date Collected: 8/31/95
Date Received: 8/31/95
Date Extracted: ND
Date Analyzed: 9/11-14/95

Matrix Spike/Duplicate Matrix Spike Summary

BTE

EPA Methods 5030/8020

Units: ug/L (ppb)

Sample Name: Batch QC
Lab Code: S951088-001

Analyte	Spike Level		Sample Result	Spike Result		Percent Recovery				Relative Percent Difference
	MS	DMS		MS	DMS	CAS		Acceptance Limits		
						MS	DMS			
Benzene	25	25	ND	24.7	24.8	99	99	75-135	<1	
Toluene	25	25	ND	24.6	24.6	98	98	73-136	<1	
Ethylbenzene	25	25	ND	24.3	24.6	97	98	69-142	1	

ARCO Products Company

Division of AtlanticRichfield Company

Task Order No. 17075.00

Chain of Custody

ARCO Facility no. 601	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	Contract number
Consultant name EMCON	Address (Consultant) 1921 Ringwood Ave San Jose, CA 95131		Method of shipment Sampler will deliver
			Special detection Limit/reporting Lowest possible
			Special QA/QC As Normal
			Remarks 2-40ml HCL VOA
			1 Liter NP Glass
			2 500ml HNO₃ LPE
			2 1 Liter HCL Glass
			MW-1 or 8
			Add MRE by 800
			#0805-121.02
			Lab number 295 335/
			S9501088
			Turnaround time
			Priority Rush ☐
			1 Business Day ☐
			Rush ☐
			2 Business Days ☐
			Expedited ☐
			5 Business Days ☐
			Standard ☒
			10 Business Days

Sample I.D.	Lab no.	Container no.	Matrix			Preservation		Sampling date	Sampling time	BTEX 802EPA 8020	TEXTH EPA 8010/8011	TPH Modified BQS Gas ☒ Diesel ☒	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 410.1/410.2	EPA 8010/8010	EPA 8240/8240	EPA 8250/8250	TCMP Metals ☐ VOA ☐	CAM Metals EPA 8210/8210 TLC ☐ STL ☐	Lead Pb, JHS ☐ Lead Pb, JHS ☐ 7420/7420	Total Metals (Cd, Cr, Zn, Ni)
			Soil	Water	Other	Ice	Acid														
1 MW-7(9)		2		X		X	HCL	8/31/95	1250		X										
2 MW-9(14)		2		X		X	HCL		1220		X										
3 MW-10(9)		2		X		X	HCL		1235		X										
4 MW-12(11)		2		X		X	HCL		1300		X										
5 MW-15(10)		2		X		X	HCL		1316		X										
6 MW-11(11)		2		X		X	HCL		1330		X										
7 MW-8(10)		10		X		X	HCL		1358		X	X		X					X	X	
8 MW-2(12)		2		X		X	HCL		1417		X										
9 MW-4(8)		2		X		X	HCL		1428		X										
10 MW-6(8)		2		X		X	HCL		1436		X										
11 MW-5(10)		2		X		X	HCL		1446		X										
MW-11				X		X	HCL				X										
MW-3(1)				X		X	HCL				X										
											NO SAMPLES TAKEN WELL CONTAINED PRODUCT										
											NO SAMPLES TAKEN WELL CONTAINED PRODUCT										

Condition of sample: ok Intact.	Temperature received: cool cool.
Relinquished by sampler Mike R...	Date 8/31/95 Time 1625
Relinquished by John Brown	Date 9-1-95 Time 900am
Relinquished by John Brown	Date 9-1-95 Time 900am

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

APPC-3292 (2-91)

CAS-5: GBTX TPH-D

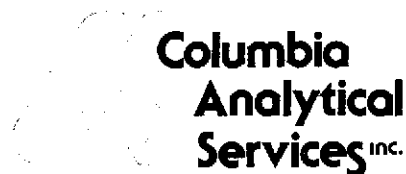
CAS-L: 418.1, 820, PA/GFAA, 10P-4

Due 9/15

09/13/95 10:14 FAX

GOLDEN STATE/CAS *** CAS SAN JOSE

004/004



September 21, 1995

Service Request No: S951088

John Young
EMCON
1921 Ringwood Avenue
San Jose, CA 95131

Re: 0805-121.02 / TO# 17075.00 / 601 San Leandro

Dear Mr. Young:

The following pages contain analytical results for sample(s) received by the laboratory on August 31, 1995. Results of sample analyses are followed by Appendix A which contains sample custody documentation and quality assurance deliverables requested for this project. The work requested has been assigned the Service Request No. listed above - to help expedite our service please refer to this number when contacting the laboratory.

Analytical results were produced by procedures consistent with Columbia Analytical Services' (CAS) Quality Assurance Manual (with any deviations noted). Signature of this CAS Analytical Report below confirms that pages 2 through 23, following, have been thoroughly reviewed and approved for release in accord with CAS Standard Operating Procedure ADM-DatRev3.

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

Sincerely:

A handwritten signature in black ink, appearing to read "SLG" followed by a flourish.

Steven L. Green
Project Chemist

SLG/ajb

A handwritten signature in black ink, appearing to read "Annelise J. Bazar" in a cursive style.

Annelise J. Bazar
Regional QA Coordinator

COLUMBIA ANALYTICAL SERVICES, Inc.

Acronyms

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

ACRONLST.DOC 7/14/95

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: ARCO Products Company
Project: 0805-121.02/TO# 17075.00/ 601 San Leandro
Sample Matrix: Water

Service Request: S951088
Date Collected: 8/31/95
Date Received: 8/31/95
Date Extracted: ND

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

Sample Name: MW-7 (9)
Lab Code: S951088-001
Date Analyzed: 9/11/95

Analyte	MRL	
TPH as Gasoline	50	ND
Benzene	0.5	ND
Toluene	0.5	ND
Ethylbenzene	0.5	0.6
Total Xylenes	0.5	ND
Methyl-tert-butyl ether	3	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: ARCO Products Company
Project: 0805-121.02/TO# 17075.00/ 601 San Leandro
Sample Matrix: Water

Service Request: S951088
Date Collected: 8/31/95
Date Received: 8/31/95
Date Extracted: ND

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

Sample Name:	MW-12 (11)	MW-15 (10)	MW-11 (11)
Lab Code:	S951088-004	S951088-005	S951088-006
Date Analyzed:	9/11/95	9/11/95	9/11/95

Analyte	MRL			
TPH as Gasoline	50	ND	ND	680
Benzene	0.5	ND	ND	ND
Toluene	0.5	ND	ND	ND
Ethylbenzene	0.5	ND	ND	4.0
Total Xylenes	0.5	ND	ND	1.8
Methyl-tert-butyl ether	3	ND	ND	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: ARCO Products Company
Project: 0805-121.02/TO# 17075.00/ 601 San Leandro
Sample Matrix: Water

Service Request: S951088
Date Collected: 8/31/95
Date Received: 8/31/95
Date Extracted: ND

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

Sample Name:	MW-8 (10)	MW-2 (12)	MW-4 (8)
Lab Code:	S951088-007	S951088-008	S951088-009
Date Analyzed:	9/12/95	9/12/95	9/14/95

Analyte	MRL			
TPH as Gasoline	50	1,400	5,000	9,000
Benzene	0.5	<3 *	280	2,000
Toluene	0.5	<3 *	18	270
Ethylbenzene	0.5	5	120	270
Total Xylenes	0.5	<3 *	140	1,400
Methyl-tert-butyl ether	3	520	<50 *	<100 *

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

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: ARCO Products Company
Project: 0805-121.02/TO# 17075.00/ 601 San Leandro
Sample Matrix: Water

Service Request: S951088
Date Collected: 8/31/95
Date Received: 8/31/95
Date Extracted: ND

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

Sample Name:	MW-6 (8)	MW-5 (10)	Method Blank
Lab Code:	S951088-010	S951088-011	S950911-WB
Date Analyzed:	9/12/95	9/11/95	9/11/95

Analyte	MRL			
TPH as Gasoline	50	26,000	53,000	ND
Benzene	0.5	8,000	12,000	ND
Toluene	0.5	<100 *	1,600	ND
Ethylbenzene	0.5	1,900	1,000	ND
Total Xylenes	0.5	900	6,000	ND
Methyl-tert-butyl ether	3	<500 *	<500 *	ND

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

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: ARCO Products Company
Project: 0805-121.02/TO# 17075.00/ 601 San Leandro
Sample Matrix: Water

Service Request: S951088
Date Collected: 8/31/95
Date Received: 8/31/95
Date Extracted: ND

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

Sample Name:	Method Blank	Method Blank
Lab Code:	S950912-WB	S950914-WB
Date Analyzed:	9/12/95	9/14/95

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

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

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: ARCO Products Company
 Project: 0805-121.02/TO# 17075.00/ 601 San Leandro
 Sample Matrix: Water

Service Request: L953351
 Date Collected: 8/31/95
 Date Received: 8/31/95
 Date Extracted: 9/5/95

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

Sample Name:	MW-8 (10)	Method Blank
Lab Code:	L953351-001	L953351-MB
Date Analyzed:	9/7/95	9/7/95

Base Neutral Analyte	MRL		
N-Nitrosodimethylamine	5	ND	ND
Aniline	5	ND	ND
Bis(2-chloroethyl) Ether	5	ND	ND
1,2-Dichlorobenzene	5	ND	ND
1,3-Dichlorobenzene	5	ND	ND
1,4-Dichlorobenzene	5	ND	ND
Bis(2-chloroisopropyl) Ether	5	ND	ND
N-Nitrosodi-n-propylamine	5	ND	ND
Hexachloroethane	5	ND	ND
Nitrobenzene	5	ND	ND
Isophorone	5	ND	ND
Bis(2-chloroethoxy)methane	5	ND	ND
1,2,4-Trichlorobenzene	5	ND	ND
Naphthalene	5	62	ND
4-Chloroaniline	5	ND	ND
Hexachlorobutadiene	5	ND	ND
2-Methylnaphthalene	5	8	ND
Hexachlorocyclopentadiene	10	ND	ND
2-Chloronaphthalene	5	ND	ND
2-Nitroaniline	20	ND	ND
Dimethyl Phthalate	5	ND	ND
Acenaphthylene	5	ND	ND
3-Nitroaniline	20	ND	ND
Acenaphthene	5	ND	ND
Dibenzofuran	5	ND	ND
2,4-Dinitrotoluene	5	ND	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: ARCO Products Company #601/#0805-121.02
Sample Matrix: Water

Service Request: L953351
Date Collected: 8/31/95
Date Received: 8/31/95
Date Extracted: 9/5/95

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

Sample Name:	MW-8 (10)	Method Blank
Lab Code:	L953351-001	L953351-MB
Date Analyzed:	9/7/95	9/7/95

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

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: ARCO Products Company #601/#0805-121.02
Sample Matrix: Water

Service Request: L953351
Date Collected: 8/31/95
Date Received: 8/31/95
Date Extracted: 9/5/95

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

Sample Name:	MW-8 (10)	Method Blank
Lab Code:	L953351-001	L953351-MB
Date Analyzed:	9/7/95	9/7/95

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

^a Quantified as 4-Methylphenol.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: ARCO Products Company #601/#0805-121.02
Sample Matrix: Water

Service Request: L953351
Date Collected: 8/31/95
Date Received: 8/31/95
Date Extracted: 9/7/95
Date Analyzed: 9/7/95

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

Sample Name	Lab Code	MRL	Result
MW-8 (10)	L953351-001	0.5	0.9
Method Blank	L953351-MB	0.5	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: ARCO Products Company #601/#0805-121.02
Sample Matrix: Water

Service Request: L953351
Date Collected: 8/31/95
Date Received: 8/31/95
Date Extracted: NA

Total Metals
Units: mg/L (ppm)

Sample Name: MW-8 (10) **Method Blank**
Lab Code: L953351-001 L953351-MB
Date Analyzed: 9/5/95 9/5/95

Analyte	EPA Method	MRL		
Cadmium	3010/6010	0.005	ND	ND
Chromium	3010/6010	0.01	0.04	ND
Lead	3020/7421	0.002	0.016	ND
Nickel	3010/6010	0.04	0.05	ND
Zinc	3010/6010	0.01	0.09	ND

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 0805-121.02/TO# 17075.00/ 601 San Leandro
Sample Matrix: Water

Service Request: S951088
Date Collected: 8/31/95
Date Received: 8/31/95
Date Extracted: ND
Date Analyzed: 9/11-14/95

Surrogate Recovery Summary
BTEX, MTBE 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)	S951088-001	96
MW-12 (11)	S951088-004	95
MW-15 (10)	S951088-005	98
MW-11 (11)	S951088-006	105
MW-8 (10)	S951088-007	101
MW-2 (12)	S951088-008	106
MW-4 (8)	S951088-009	94
MW-6 (8)	S951088-010	99
MW-5 (10)	S951088-011	95
MW-7 (9) MS	S951088-001MS	96
MW-7 (9) DMS	S951088-001DMS	97
Method Blank	S950911-WB	98
Method Blank	S950912-WB	97
Method Blank	S950914-WB	92

CAS Acceptance Limits: 69-116

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 0805-121.02/TO# 17075.00/ 601 San Leandro

Service Request: S951088
Date Analyzed: 9/11/95

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

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
Benzene	25	24.4	98	85-115
Toluene	25	24.3	97	85-115
Ethylbenzene	25	24.0	96	85-115
Xylenes, Total	75	72.6	97	85-115
Gasoline	250	248	99	90-110
Methyl-tert-butyl Ether	50	50.6	101	85-115

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 0805-121.02/TO# 17075.00/ 601 San Leandro
Sample Matrix: Water

Service Request: S951088
Date Collected: 8/31/95
Date Received: 8/31/95
Date Extracted: ND
Date Analyzed: 9/11-14/95

Matrix Spike/Duplicate Matrix Spike Summary

BTE

EPA Methods 5030/8020

Units: ug/L (ppb)

Sample Name: MW-7 (9)
Lab Code: S951088-001

Analyte	Spike Level		Sample Result	Spike Result		Percent Recovery				Relative Percent Difference
	MS	DMS		MS	DMS	MS	DMS	CAS		
								Acceptance Limits		
Benzene	25	25	ND	24.7	24.8	99	99	75-135	<1	
Toluene	25	25	ND	24.6	24.6	98	98	73-136	<1	
Ethylbenzene	25	25	ND	24.3	24.6	97	98	69-142	1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON
Project: ARCO Products Company #601/#0805-121.02
Sample Matrix: Water

Service Request: L953351
Date Collected: NA
Date Received: NA
Date Extracted: 9/5/95
Date Analyzed: 9/7/95

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-8 (10)	L953351-001	57	36	70	71	89	98
Method Blank	L953351-MB	63	40	72	94	91	132
Matrix Spike	L953351-IMS	60	43	76	86	85	90
Duplicate Matrix Spike	L953351-IDMS	60	37	86	90	92	98

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

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON
Project: ARCO Products Company #601/#0805-121.02
Sample Matrix: Water

Service Request: L953351
Date Collected: NA
Date Received: NA
Date Extracted: 9/5/95
Date Analyzed: 9/7/95

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

Sample Name: MW-8 (10)
Lab Code: L953351-001

Analyte	Spike Level		Sample Result	Spike Result		Percent Recovery			Relative Percent Difference
	MS	DMS		MS	DMS	MS	DMS	CAS Acceptance Limits	
Phenol	50.0	50.0	ND	20.5	21.6	41	43	12-89	5
2-Chlorophenol	50.0	50.0	ND	44.0	47.0	88	94	27-123	7
1,4-Dichlorobenzene	50.0	50.0	ND	39.7	43.7	79	87	36-97	10
N-Nitrosodi-n-propylamine	50.0	50.0	ND	45.9	48.7	92	97	41-116	6
1,2,4-Trichlorobenzene	50.0	50.0	ND	39.3	43.6	79	87	39-98	10
4-Chloro-3-methylphenol	50.0	50.0	ND	44.5	46.3	89	93	23-97	4
Acenaphthene	50.0	50.0	ND	39.1	42.8	78	86	46-118	9
4-Nitrophenol	50.0	50.0	ND	30.2	32.8	60	66	10-80	8
2,4-Dinitrotoluene	50.0	50.0	ND	38.8	43.7	78	87	24-96	12
Pentachlorophenol	50.0	50.0	ND	42.3	43.6	85	87	9-103	3
Pyrene	50.0	50.0	ND	45.8	48.2	92	96	26-127	5

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON
Project: ARCO Products Company #601/#0805-121.02
LCS Matrix: Water

Service Request: L953351
Date Collected: NA
Date Received: NA
Date Extracted: 9/5/95
Date Analyzed: 9/7/95

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	22.4	45	5-112
2-Chlorophenol	50.0	47.5	95	23-134
1,4-Dichlorobenzene	50.0	43.9	88	20-124
N-Nitrosodi-n-propylamine	50.0	48.3	97	D-230
1,2,4-Trichlorobenzene	50.0	44.0	88	44-142
4-Chloro-3-methylphenol	50.0	46.8	94	22-147
Acenaphthene	50.0	43.6	87	47-145
4-Nitrophenol	50.0	20.0	40	D-132
2,4-Dinitrotoluene	50.0	43.8	88	39-139
Pentachlorophenol	50.0	34.6	69	14-176
Pyrene	50.0	50.2	100	52-115

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON
Project: ARCO Products Company #601/#0805-121.02
LCS Matrix: Water

Service Request: L953351
Date Collected: NA
Date Received: NA
Date Analyzed: 9/5/95

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

Analyte	EPA Method	True Value	Result	Percent Recovery	CAS
					Percent Recovery Acceptance Limits
Cadmium	3010/6010	0.100	0.094	94	75-125
Chromium	3010/6010	0.500	0.489	98	75-125
Lead	3020/7421	0.0400	0.0405	101	75-125
Nickel	3010/6010	0.500	0.492	98	75-125
Zinc	3010/6010	0.500	0.475	95	75-125

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON
Project: ARCO Products Company #601/#0805-121.02
Sample Matrix: Water

Service Request: L953351
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: 9/5/95

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

Sample Name: Batch QC
Lab Code: L953347-001

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	0.091	0.088	91	88	75-125	3
Chromium	0.01	0.500	ND	0.485	0.469	97	94	75-125	3
Nickel	0.04	0.500	ND	0.474	0.462	95	92	75-125	3
Zinc	0.01	0.500	0.021	0.484	0.468	93	89	75-125	3

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON
Project: ARCO Products Company #601/#0805-121.02
Sample Matrix: Water

Service Request: L953351
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: 9/5/95

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

Sample Name: Batch QC
Lab Code: L953371-001

Analyte	MRL	Spike Level	Sample Result	Spike Result		Percent Recovery		CAS Acceptance Limits	Relative Percent Difference
				MS	DMS	MS	DMS		
Lead	0.002	0.0400	ND	0.0379	0.0382	95	96	75-125	<1

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON
Project: ARCO Products Company #601/#0805-121.02
LCS Matrix: Water

Service Request: L953351
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: 9/7/95

Laboratory Control Sample/Duplicate Laboratory Control Sample Summary*
Total Recoverable Petroleum Hydrocarbons
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	2.03	2.03	1.68	1.75	83	86	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.

