EMCON Associates
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November 28, 1994
Project 0C75-005.24

Mr. Michael Whelan
Environmental Engineer
ARCO Products Company
P.O. Box 5811
San Mateo, California 94420

Re: Second quarter 1994 groundwater monitoring program results, retail service station located at 10600 MacArthur Boulevard, Oakland, California. ARCO File No. 0276.

Dear Mr. Whelan:

This letter presents the results of the second quarter 1994 groundwater monitoring program at the retail service station located at 10600 MacArthur Boulevard, Oakland, California (Figure 1). A former truck manufacturing plant was located adjacent to the service station on the property currently owned by Drake Builders and now operated as Foothill Square Shopping Center.

MONITORING PROGRAM RESULTS

The second quarter 1994 groundwater monitoring event was performed by Integrated Wastestream Management, Inc. (IWM) on May 2, 1994. Wells MW-1 through MW-8, RW-1, and WGR-3 are monitored quarterly. Groundwater samples collected during second quarter monitoring were analyzed for total petroleum hydrocarbons as gasoline (TPHG), benzene, toluene, ethylbenzene, and total xylenes (BTEX), and volatile organic compounds (VOCs). Well MW-4 was also analyzed for total recoverable petroleum hydrocarbons (TRPH). Certified analytical reports, chain-of-custody documentation, and field data sheets are presented in Appendix A. Depths to groundwater and analytical data are presented in Table 1. Figure 2 presents the groundwater elevation data along with TPHG and benzene concentrations. Figure 3 presents the tetrachloroethene (PCE) concentrations. The highest PCE concentrations are consistently identified at the former truck manufacturing facility. All analytical concentrations are from the May 2, 1994 monitoring event.

SITE STATUS UPDATE

This update reports site activities performed during the second quarter of 1994 and the anticipated site activities for the third quarter of 1994.

Second Quarter 1994 Activities

- Quarterly groundwater monitoring report for first quarter 1994 prepared and submitted by RESNA Industries Inc.
- IWM performed second quarter 1994 groundwater monitoring event.

Work Anticipated Third Quarter 1994

- Prepare and submit quarterly groundwater monitoring report for second quarter 1994.
- Perform quarterly groundwater monitoring for third quarter 1994.

Please call if you have questions.

Sincerely,

EMCON Associates

John C. Young
Project Manager

Mark Smolley, R.G. #4650
Senior Project Geologist

Attachments: Table 1 - Summary of Groundwater Sample Analyses for ARCO facility A-276
Figure 1 - Site Location
Figure 2 - Site Plan
Figure 3 - Tetrachloroethene (PCE) Concentrations in Groundwater
Appendix A - Certified Analytical Report, Chain-of-Custody Documentation and Field Data Sheets

Table 1

Summary of Ground Water Sample Analyses for ARCO Facility A-276, Oakland, California

WELL NUMBER	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	RW-1	WGR-3
DATE SAMPLED	5/2/94	5/2/94	5/2/94	5/2/94	5/2/94	5/2/94	5/2/94	5/2/94	5/2/94	5/2/94
DEPTH TO WATER	31.66	16.15	32.16	31.60	31.06	37.02	20.51	29.26	31.96	20.06
SHEEN	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
PRODUCT THICKNESS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPHg	ND	3,400	<480 +	<490 +	ND	<860 +	38,000	ND	ND	ND
BTEX										
BENZENE	ND	130	ND	ND	ND	<1 ++	640	ND	ND	ND
TOLUENE	ND	21	ND	ND	ND	<1 ++	600	ND	ND	ND
ETHLYBENZENE	ND	73	ND	ND	ND	<1 ++	930	ND	ND	ND
XYLENES	ND	180	<0.9++	<0.9++	ND	1.3	7,200	ND	ND	ND
EPA 418.1										
PETROLEUM HYDROCARBONS	NA	NA	NA	5,900	NA	NA	NA	NA	NA	NA
EPA 624										
BENZENE	ND	140	<20 *	<20 *	ND	<50 *	440	ND	ND	ND
TOLUENE	ND	21	<20 *	<20 *	ND	<50 *	400	ND	ND	ND
PCE	35	ND	1,600	1,700	35	2,000	<50 *	ND	45	ND
ETHYLBENZENE	ND	79	<20 *	<20 *	ND	<50 *	660	ND	ND	ND
TOTAL XYLENES	ND	190	<100 *	<100 *	ND	<250 *	5,200	ND	ND	ND

FOOTNOTES:

Concentrations reported in ug/L (ppb).

TPHg = Total Purgeable Petroleum Hydrocarbons (USEPA Method 8015 Modified)

BTEX Distinction (USEPA Method 8020)

PCE = Tetrachloroethene (USEPA Method 8010)

* = Well inaccessible

** = Not sampled per consultant request.

+ = Raised MRL due to matrix interference. The sample contains a single non-fuel component eluting in the gasoline range, and quantified as gasoline. The chromatogram does not match the typical gasoline fingerprint.

DCE = cis-1, 2-Dichloroethene (USEPA Method 8010)

TCE = Trichloroethene (USEAP Method 8010)

ND = Not Detected.

NA = Not applicable.

FP = Floating product.

++ = Raised MRL due to matrix interference.

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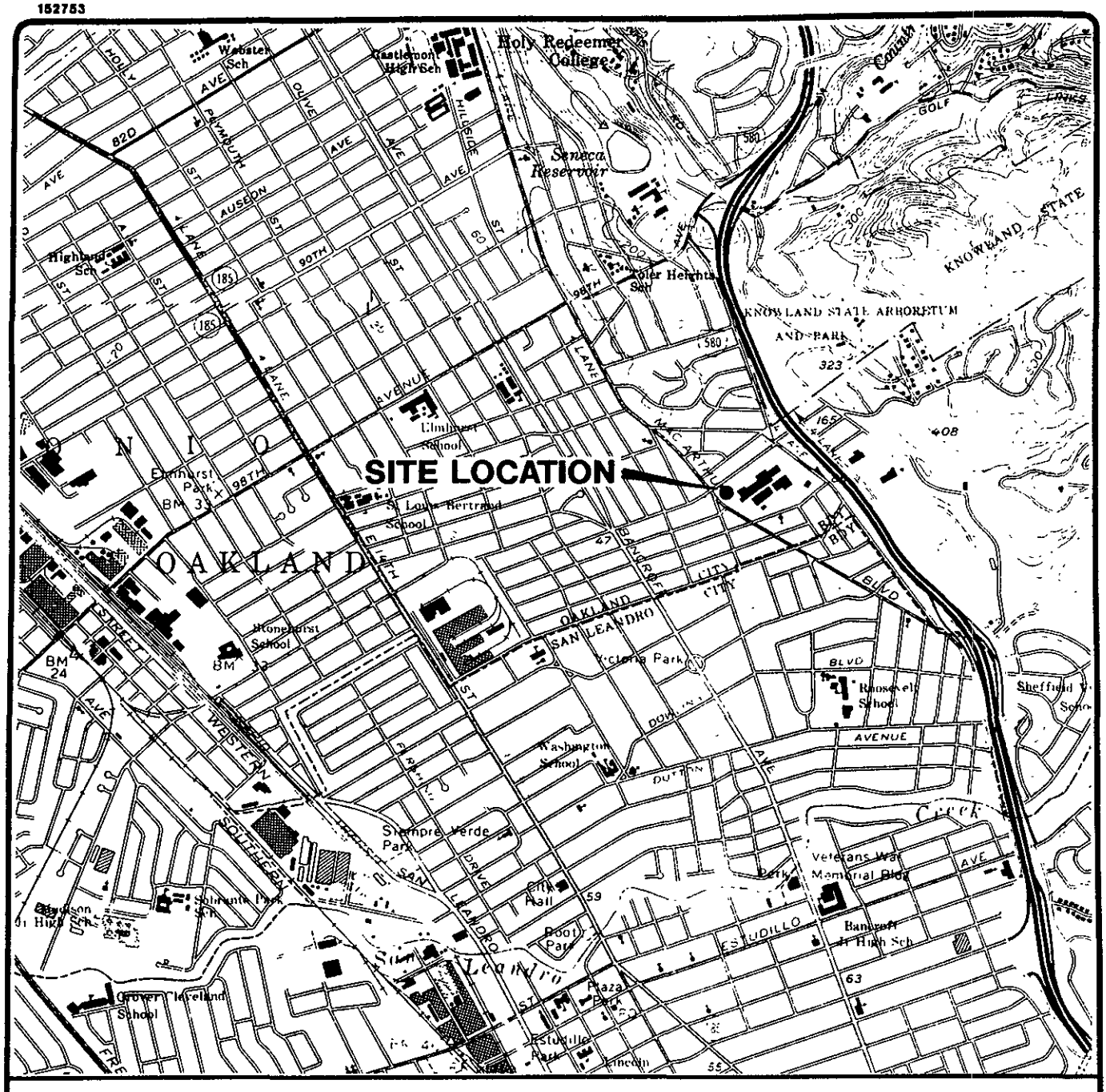

Base map from USGS 7.5' Quad. Maps:
Oakland East and San Leandro, California.
Photorevised 1980.

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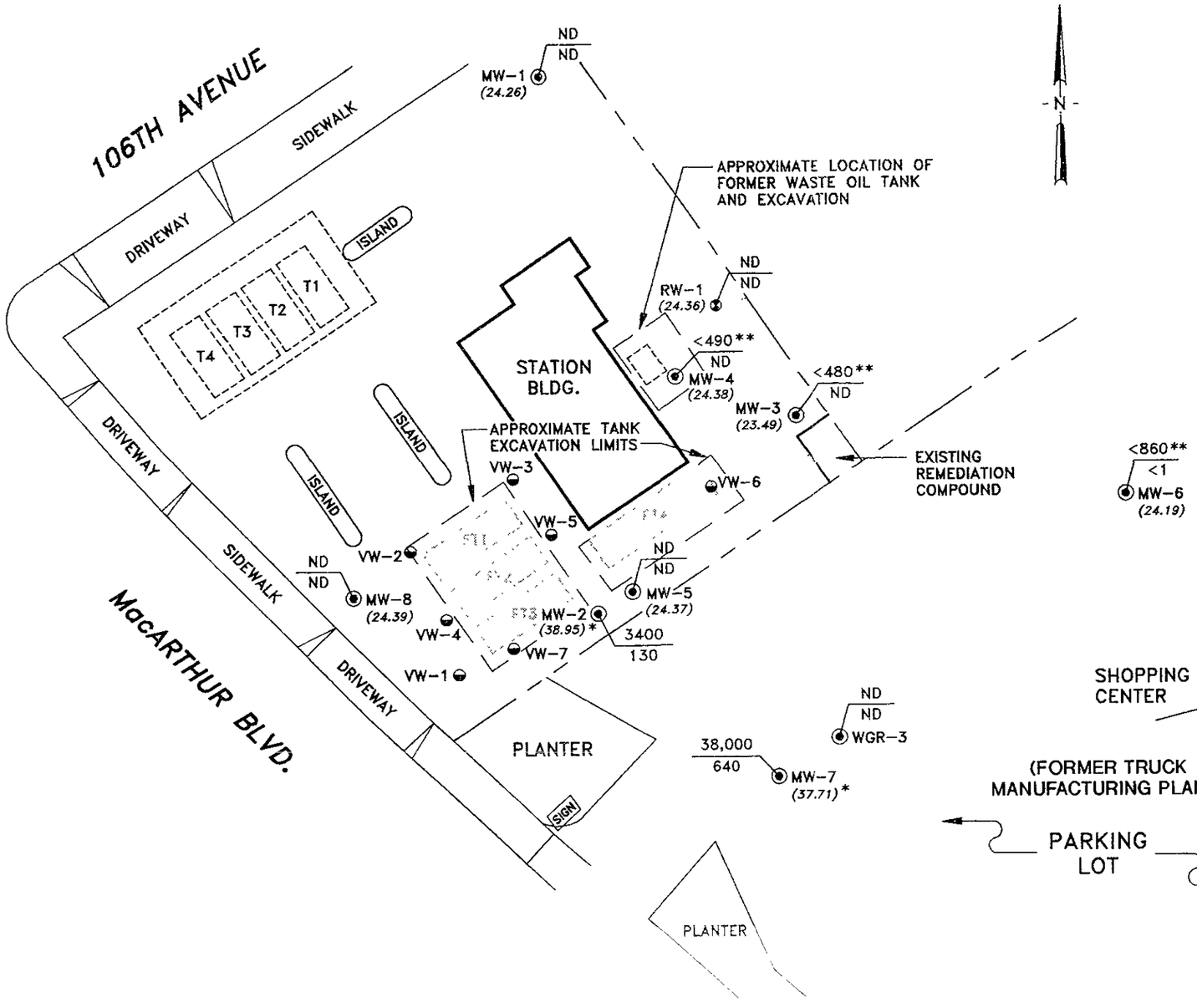
10600 AND 10700 MACARTHUR BLVD.
QUARTERLY GROUNDWATER MONITORING
OAKLAND, CALIFORNIA

SITE LOCATION

FIGURE
1

PROJECT NO.
C75-05.24



EXPLANATION

- Groundwater monitoring well
- Recovery well
- Vapor extraction well
- (24.19) Groundwater elevation (Ft.–MSL); measured 5/2/94
- 3400 / 130 TPHG concentration in groundwater (ppb); sampled 5/2/94 / Benzene concentration in groundwater (ppb); sampled 5/2/94
- ND : Not detected
- Existing underground storage tank
- Former underground storage tank

* Well screened in shallow water–bearing zone.

** The sample contains a single non–fuel component eluting in the gasoline range, and quantified as gasoline. The chromatogram does not match the typical gasoline fingerprint.

Base map modified from RESNA, 1993

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SCALE: 0 30 60 FEET

10600 AND 10700 MACARTHUR BLVD
QUARTERLY GROUNDWATER MONITORING
OAKLAND, CALIFORNIA

SITE PLAN

FIGURE NO. 2

PROJECT NO. C75–05.24

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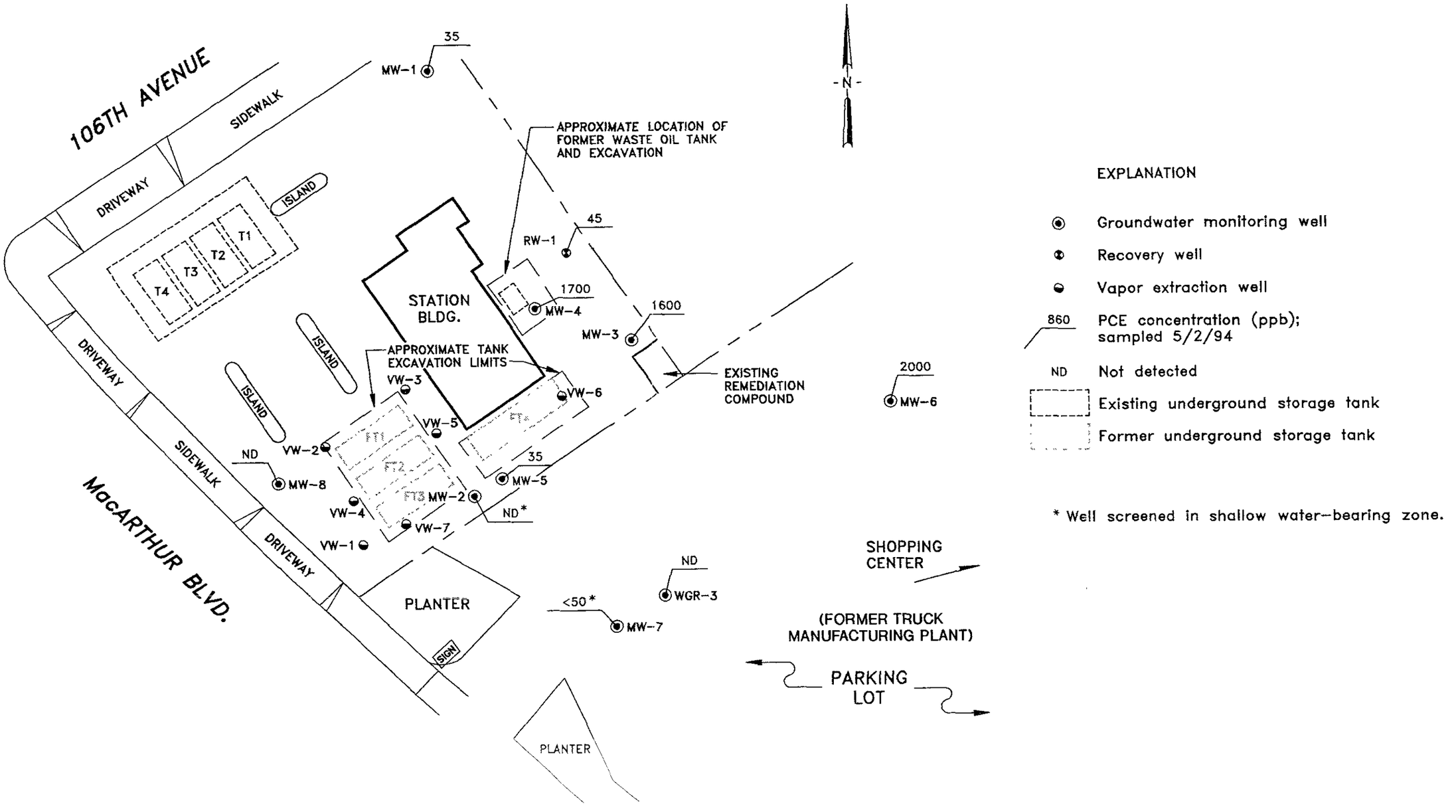

Base map modified from RESNA, 1993

EMCON Associates

SCALE: 0 30 60 FEET

10600 AND 10700 MACARTHUR BLVD
QUARTERLY GROUNDWATER MONITORING
OAKLAND, CALIFORNIA

TETRACHLOROETHENE (PCE) CONCENTRATIONS IN GROUNDWATER

FIGURE NO.
3
PROJECT NO.
C75-05.24

APPENDIX A

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

Columbia Analytical Services inc.

May 24, 1994

Service Request No. SJ940521

Gina Austin
Tom DeLon
IWM
950 Ames Avenue
Milpitas, CA 95035

Re: **ARCO Facility No. 276**

Dear Ms. Austin/Mr. DeLon:

Attached are the results of the water samples submitted to our lab on May 4, 1994. For your reference, these analyses have been assigned our service request number SJ940521.

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

Please call if you have any questions.

Respectfully submitted:

COLUMBIA ANALYTICAL SERVICES, INC.

Carol J Klein for

Keoni A. Murphy
Laboratory Manager

Annelise J. Bazar
Regional QA Coordinator

KAM/ajb

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Acronyms

ASTM	American Society for Testing and Materials
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MRL	Method Reporting Limit
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected at or above the MRL
NR	Not Requested
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	IWM	**Date Collected:**	5/2/94
Project:	ARCO Facility No. 276	**Date Received:**	5/4/94
Sample Matrix:	Water	**Date Extracted:**	5/12/94
		Date Analyzed:	5/13/94
		Service Request:	SJ940521

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

Sample Name	Lab Code	MRL	Result
MW-4 (31.7)	SJ940521-5	0.5	5,900
Method Blank	SJ940512-WMB	0.5	ND

Approved By: Carol J Klein Date: 5-24-94

IAMRL_DE/0415094

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	IWM	**Date Collected:**	5/2/94
Project:	ARCO Facility No. 276	**Date Received:**	5/4/95
Sample Matrix:	Water	**Date Extracted:**	NA
		Service Request:	SJ940521

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

Sample Name:	**MW-1 (33.8)**	**MW-2 (16.5)**	**MW-3 (32.4)**
Lab Code:	SJ940521-2	SJ940521-3	SJ940521-4
Date Analyzed:	5/6/94	5/6/94	5/6/94

Analyte	**MRL**			
Benzene	0.5	ND	130	ND
Toluene	0.5	ND	21	ND
Ethylbenzene	0.5	ND	73	ND
Total Xylenes	0.5	ND	180	<0.9 *
TPH as Gasoline	50	ND	3,400	<480 **

* Raised MRL due to matrix interference.

** Raised MRL due to matrix interference. The sample contains a single non-fuel component eluting in the gasoline range, and quantitated as gasoline. The chromatogram does not match the typical gasoline fingerprint.

Approved By: Carol Klein Date: 5-24-94

3S22/041594

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	IWM	**Date Collected:**	5/2/94
Project:	ARCO Facility No. 276	**Date Received:**	5/4/95
Sample Matrix:	Water	**Date Extracted:**	NA
		Service Request:	SJ940521

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

	Sample Name:	**MW-4 (31.7)**	**MW-5 (33)**	**MW-6 (37)**
	Lab Code:	SJ940521-5	SJ940521-6	SJ940521-7
	Date Analyzed:	5/6/94	5/6/94	5/6/94
Analyte	**MRL**			
Benzene	0.5	ND	ND	<1 *
Toluene	0.5	ND	ND	<1 *
Ethylbenzene	0.5	ND	ND	<1 *
Total Xylenes	0.5	<0.9 *	ND	1.3
TPH as Gasoline	50	<490 **	ND	<860 **

* Raised MRL due to matrix interference.

** Raised MRL due to matrix interference. The sample contains a single non-fuel component eluting in the gasoline range, and quantitated as gasoline. The chromatogram does not match the typical gasoline fingerprint.

Approved By: Carol Klein Date: 5-24-94

3S22/041594

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	IWM	**Date Collected:**	5/2/94
Project:	ARCO Facility No. 276	**Date Received:**	5/4/95
Sample Matrix:	Water	**Date Extracted:**	NA
		Service Request:	SJ940521

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

Sample Name:	**MW-7 (20.7)**	**MW-8 (31)**	**RW-1 (33)**
Lab Code:	SJ940521-8	SJ940521-9	SJ940521-10
Date Analyzed:	5/6/94	5/6/94	5/6/94

Analyte	**MRL**			
Benzene	0.5	640	ND	ND
Toluene	0.5	600	ND	ND
Ethylbenzene	0.5	930	ND	ND
Total Xylenes	0.5	7,200	ND	ND
TPH as Gasoline	50	38,000	ND	ND

Approved By: Carol Klein Date: 5-24-94

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Analytical Report

Client:	IWM	**Date Collected:**	5/2/94
Project:	ARCO Facility No. 276	**Date Received:**	5/4/95
Sample Matrix:	Water	**Date Extracted:**	NA
		Service Request:	SJ940521

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

	Sample Name:	**WGR-3 (23.8)**	**Method Blank**
	Lab Code:	SJ940521-11	SJ940506-WMB
	Date Analyzed:	5/6/94	5/6/94
Analyte	**MRL**		
Benzene	0.5	ND	ND
Toluene	0.5	ND	ND
Ethylbenzene	0.5	ND	ND
Total Xylenes	0.5	ND	ND
TPH as Gasoline	50	ND	ND

Approved By: Carol Klein Date: 5-24-94

3S22/041594

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Client: IWM
Project: ARCO Facility No. 276
Sample Matrix: Water

Date Collected: 5/2/94
Date Received: 5/4/94
Date Extracted: NA
Service Request: SJ940521

Volatile Organic Compounds
EPA Method 624
Units: µg/L (ppb)

	Sample Name:	MW-1 (33.8)	MW-2 (16.5)	MW-3 (32.4) *
	Lab Code:	SJ940521-2	SJ940521-3	SJ940521-4
	Date Analyzed:	5/10/94	5/10/94	5/10/94
Analyte	**MRL**			
Chloromethane	10	ND	ND	<200
Vinyl Chloride	10	ND	ND	<200
Bromomethane	10	ND	ND	<200
Chloroethane	10	ND	ND	<200
Trichlorofluoromethane (CFC 11)	1	ND	ND	<20
Trichlorotrifluoroethane (CFC 113)	10	ND	ND	<200
1,1-Dichloroethene	1	ND	ND	<20
Acetone	20	ND	ND	<400
Carbon Disulfide	1	ND	ND	<20
Methylene Chloride	10	ND	ND	<200
trans-1,2-Dichloroethene	1	ND	ND	<20
cis-1,2-Dichloroethene	1	ND	ND	<20
2-Butanone (MEK)	10	ND	ND	<200
1,1-Dichloroethane	1	ND	ND	<20
Chloroform	1	ND	ND	<20
1,1,1-Trichloroethane (TCA)	1	ND	ND	<20
Carbon Tetrachloride	1	ND	ND	<20
Benzene	1	ND	140	<20
1,2-Dichloroethane	1	ND	ND	<20
Vinyl Acetate	10	ND	ND	<200
Trichloroethene (TCE)	1	ND	ND	<20
1,2-Dichloropropane	1	ND	ND	<20
Bromodichloromethane	1	ND	ND	<20
2-Chloroethyl Vinyl Ether	10	ND	ND	<200
trans-1,3-Dichloropropene	1	ND	ND	<20
4-Methyl-2-pentanone (MIBK)	10	ND	ND	<200
2-Hexanone	10	ND	ND	<200
Toluene	1	ND	21	<20
cis-1,3-Dichloropropene	1	ND	ND	<20
1,1,2-Trichloroethane	1	ND	ND	<20
Tetrachloroethene (PCE)	1	35	ND	1,600
Dibromochloromethane	1	ND	ND	<20
Chlorobenzene	1	ND	ND	<20
Ethylbenzene	1	ND	79	<20
Styrene	1	ND	ND	<20
Total Xylenes	5	ND	190	<100
Bromoform	1	ND	ND	<20
1,1,2,2-Tetrachloroethane	1	ND	ND	<20
1,3-Dichlorobenzene	1	ND	ND	<20
1,4-Dichlorobenzene	1	ND	ND	<20
1,2-Dichlorobenzene	1	ND	ND	<20

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

Approved By: Carol Klein Date: 5-24-94

3S44/041894

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: IWM
Project: ARCO Facility No. 276
Sample Matrix: Water

Date Collected: 5/2/94
Date Received: 5/4/94
Date Extracted: NA
Service Request: SJ940521

Volatile Organic Compounds
EPA Method 624
Units: µg/L (ppb)

	Sample Name:	MW-4 (31.7)*	MW-5 (33)	MW-6 (37)*
	Lab Code:	SJ940521-5	SJ940521-6	SJ940521-7
	Date Analyzed:	5/10/94	5/10/94	5/10/94
Analyte	**MRL**			
Chloromethane	10	<200	ND	<500
Vinyl Chloride	10	<200	ND	<500
Bromomethane	10	<200	ND	<500
Chloroethane	10	<200	ND	<500
Trichlorofluoromethane (CFC 11)	1	<20	ND	<50
Trichlorotrifluoroethane (CFC 113)	10	<200	ND	<500
1,1-Dichloroethene	1	<20	ND	<50
Acetone	20	<400	ND	<1,000
Carbon Disulfide	1	<20	ND	<50
Methylene Chloride	10	<200	ND	<500
trans-1,2-Dichloroethene	1	<20	ND	<50
cis-1,2-Dichloroethene	1	<20	ND	<50
2-Butanone (MEK)	10	<200	ND	<500
1,1-Dichloroethane	1	<20	ND	<50
Chloroform	1	<20	ND	<50
1,1,1-Trichloroethane (TCA)	1	<20	ND	<50
Carbon Tetrachloride	1	<20	ND	<50
Benzene	1	<20	ND	<50
1,2-Dichloroethane	1	<20	ND	<50
Vinyl Acetate	10	<200	ND	<500
Trichloroethene (TCE)	1	<20	ND	<50
1,2-Dichloropropane	1	<20	ND	<50
Bromodichloromethane	1	<20	ND	<50
2-Chloroethyl Vinyl Ether	10	<200	ND	<500
trans-1,3-Dichloropropene	1	<20	ND	<50
4-Methyl-2-pentanone (MIBK)	10	<200	ND	<500
2-Hexanone	10	<200	ND	<500
Toluene	1	<20	ND	<50
cis-1,3-Dichloropropene	1	<20	ND	<50
1,1,2-Trichloroethane	1	<20	ND	<50
Tetrachloroethene (PCE)	1	1,700	35	2,000
Dibromochloromethane	1	<20	ND	<50
Chlorobenzene	1	<20	ND	<50
Ethylbenzene	1	<20	ND	<50
Styrene	1	<20	ND	<50
Total Xylenes	5	<100	ND	<250
Bromoform	1	<20	ND	<50
1,1,2,2-Tetrachloroethane	1	<20	ND	<50
1,3-Dichlorobenzene	1	<20	ND	<50
1,4-Dichlorobenzene	1	<20	ND	<50
1,2-Dichlorobenzene	1	<20	ND	<50

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

Approved By: Carol Klein Date: 5-24-94

3S44/041894

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: IWM
Project: ARCO Facility No. 276
Sample Matrix: Water

Date Collected: 5/2/94
Date Received: 5/4/94
Date Extracted: NA
Service Request: SJ940521

Volatile Organic Compounds
EPA Method 624
Units: µg/L (ppb)

	Sample Name:	MW-7 (20.7) *	MW-8 (31)	RW-1 (33)
	Lab Code:	SJ940521-8	SJ940521-9	SJ940521-10
	Date Analyzed:	5/10/94	5/10/94	5/11/94
Analyte	**MRL**			
Chloromethane	10	<500	ND	ND
Vinyl Chloride	10	<500	ND	ND
Bromomethane	10	<500	ND	ND
Chloroethane	10	<500	ND	ND
Trichlorofluoromethane (CFC 11)	1	<50	ND	ND
Trichlorotrifluoroethane (CFC 113)	10	<500	ND	ND
1,1-Dichloroethene	1	<50	ND	ND
Acetone	20	<1,000	ND	ND
Carbon Disulfide	1	<50	ND	ND
Methylene Chloride	10	<500	ND	ND
trans-1,2-Dichloroethene	1	<50	ND	ND
cis-1,2-Dichloroethene	1	<50	ND	ND
2-Butanone (MEK)	10	<500	ND	ND
1,1-Dichloroethane	1	<50	ND	ND
Chloroform	1	<50	ND	ND
1,1,1-Trichloroethane (TCA)	1	<50	ND	ND
Carbon Tetrachloride	1	<50	ND	ND
Benzene	1	440	ND	ND
1,2-Dichloroethane	1	<50	ND	ND
Vinyl Acetate	10	<500	ND	ND
Trichloroethene (TCE)	1	<50	ND	ND
1,2-Dichloropropane	1	<50	ND	ND
Bromodichloromethane	1	<50	ND	ND
2-Chloroethyl Vinyl Ether	10	<500	ND	ND
trans-1,3-Dichloropropene	1	<50	ND	ND
4-Methyl-2-pentanone (MIBK)	10	<500	ND	ND
2-Hexanone	10	<500	ND	ND
Toluene	1	400	ND	ND
cis-1,3-Dichloropropene	1	<50	ND	ND
1,1,2-Trichloroethane	1	<50	ND	ND
Tetrachloroethene (PCE)	1	<50	ND	45
Dibromochloromethane	1	<50	ND	ND
Chlorobenzene	1	<50	ND	ND
Ethylbenzene	1	660	ND	ND
Styrene	1	<50	ND	ND
Total Xylenes	5	5,200	ND	ND
Bromoform	1	<50	ND	ND
1,1,2,2-Tetrachloroethane	1	<50	ND	ND
1,3-Dichlorobenzene	1	<50	ND	ND
1,4-Dichlorobenzene	1	<50	ND	ND
1,2-Dichlorobenzene	1	<50	ND	ND

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

Approved By: Carol Klein Date: 5-24-94

3S44/041894

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	IWM	**Date Collected:**	5/2/94
Project:	ARCO Facility No. 276	**Date Received:**	5/4/94
Sample Matrix:	Water	**Date Extracted:**	NA
		Service Request:	SJ940521

Volatile Organic Compounds
EPA Method 624
Units: µg/L (ppb)

		Sample Name:	**WGR-3 (23.8)**	**Method Blank**	**Method Blank**
		Lab Code:	SJ940521-11	SJ940510-WMB	SJ940511-WMB
		Date Analyzed:	5/10/94	5/10/94	5/11/94
Analyte	**MRL**				
Chloromethane	10		ND	ND	ND
Vinyl Chloride	10		ND	ND	ND
Bromomethane	10		ND	ND	ND
Chloroethane	10		ND	ND	ND
Trichlorofluoromethane (CFC 11)	1		ND	ND	ND
Trichlorotrifluoroethane (CFC 113)	10		ND	ND	ND
1,1-Dichloroethene	1		ND	ND	ND
Acetone	20		ND	ND	ND
Carbon Disulfide	1		ND	ND	ND
Methylene Chloride	10		ND	ND	ND
trans-1,2-Dichloroethene	1		ND	ND	ND
cis-1,2-Dichloroethene	1		ND	ND	ND
2-Butanone (MEK)	10		ND	ND	ND
1,1-Dichloroethane	1		ND	ND	ND
Chloroform	1		ND	ND	ND
1,1,1-Trichloroethane (TCA)	1		ND	ND	ND
Carbon Tetrachloride	1		ND	ND	ND
Benzene	1		ND	ND	ND
1,2-Dichloroethane	1		ND	ND	ND
Vinyl Acetate	10		ND	ND	ND
Trichloroethene (TCE)	1		ND	ND	ND
1,2-Dichloropropane	1		ND	ND	ND
Bromodichloromethane	1		ND	ND	ND
2-Chloroethyl Vinyl Ether	10		ND	ND	ND
trans-1,3-Dichloropropene	1		ND	ND	ND
4-Methyl-2-pentanone (MIBK)	10		ND	ND	ND
2-Hexanone	10		ND	ND	ND
Toluene	1		ND	ND	ND
cis-1,3-Dichloropropene	1		ND	ND	ND
1,1,2-Trichloroethane	1		ND	ND	ND
Tetrachloroethene (PCE)	1		ND	ND	ND
Dibromochloromethane	1		ND	ND	ND
Chlorobenzene	1		ND	ND	ND
Ethylbenzene	1		ND	ND	ND
Styrene	1		ND	ND	ND
Total Xylenes	5		ND	ND	ND
Bromoform	1		ND	ND	ND
1,1,2,2-Tetrachloroethane	1		ND	ND	ND
1,3-Dichlorobenzene	1		ND	ND	ND
1,4-Dichlorobenzene	1		ND	ND	ND
1,2-Dichlorobenzene	1		ND	ND	ND

Approved By: Carol Klein Date: 5-24-94

3S44/041894

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APPENDIX A

LABORATORY QC RESULTS

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

QA/QC Report

Client: IWM
Project: ARCO Facility No. 276

Date Analyzed: 5/13/94
Service Request: SJ940521

Initial Calibration Verification (ICV) Summary
Total Recoverable Petroleum Hydrocarbons
EPA Method 418.1
Units: ppm

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
Hydrocarbon Mixture	40	39	98	90-110

Approved By: Carol Klein Date: 5-24-94

ICV24/041594

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	IWM	**Date Collected:**	5/2/94
Project:	ARCO Facility No. 276	**Date Received:**	5/4/94
Sample Matrix:	Water	**Date Extracted:**	5/12/94
		Date Analyzed:	5/13/94
		Service Request:	SJ940521

Matrix Spike/Duplicate Matrix Spike Summary
Total Recoverable Petroleum Hydrocarbons
EPA Method 418.1
Units: mg/L (ppm)

Sample Name: Batch QC
Lab Code: SJ940518-1

	Spike Level		Sample	Spike Result		Percent Recovery		CAS Acceptance	Relative Percent
Analyte	MS	DMS	**Result**	MS	DMS	MS	DMS	Limits	**Difference**
Hydrocarbon Mix	8.0	8.0	2.0	10.0	9.6	100	95	57-127	4

Approved By: Carol Klein Date: 5-24-94

DMS1S/041594

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	IWM	**Date Collected:**	5/2/94
Project:	ARCO Facility No. 276	**Date Received:**	5/4/94
Sample Matrix:	Water	**Date Extracted:**	NA
		Date Analyzed:	5/6/94
		Service Request:	SJ940521

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

Sample Name	**Lab Code**	**Percent Recovery** α,α,α-Trifluorotolulene
MW-1 (33.8)	SJ940521-2	108
MW-2 (16.5)	SJ940521-3	116
MW-3 (32.4)	SJ940521-4	108
MW-4 (31.7)	SJ940521-5	110
MW-5 (33)	SJ940521-6	106
MW-6 (37)	SJ940521-7	110
MW-7 (20.7)	SJ940521-8	110
MW-8 (31)	SJ940521-9	101
RW-1 (33)	SJ940521-10	101
WGR-3 (23.8)	SJ940521-11	106
MW-1 (33.8) MS	SJ940521-2MS	110
MW-1 (33.8) DMS	SJ940521-2DMS	108
Method Blank	SJ940506-WMB	106

CAS Acceptance Limits: 69-116

Approved By: Carol Klein Date: 5-24-94

SUR1/041594

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Client:	IWM	**Date Analyzed:**	5/6/94
Project:	ARCO Facility No. 276	**Service Request:**	SJ940521

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

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
Benzene	25	24.9	100	85-115
Toluene	25	24.9	100	85-115
Ethylbenzene	25	24.6	98	85-115
Total Xylenes	75	75.3	100	85-115
TPH as Gasoline	250	253	101	90-110

Approved By: Carol Klein Date: 5-24-94

ICV24/041594

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	IWM	**Date Collected:**	5/2/94
Project:	ARCO Facility No. 276	**Date Received:**	5/4/94
Sample Matrix:	Water	**Date Extracted:**	NA
		Date Analyzed:	5/6/94
		Service Request:	SJ940521

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

Sample Name: MW-1 (33.8)
Lab Code: SJ940521-2

	Spike Level		Sample	Spike Result		Percent Recovery		CAS Acceptance	Relative Percent
Analyte	MS	DMS	**Result**	MS	DMS	MS	DMS	Limits	**Difference**
TPH as Gasoline	250	250	ND	253	251	101	100	67-121	<1

Approved By: Carol Klein Date: 5-24-94

DMS1S/041594

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: IWM
Project: ARCO Facility No. 276
Sample Matrix: Water

Date Collected: 5/2/94
Date Received: 5/4/94
Date Extracted: NA
Date Analyzed: 5/10,11/94
Service Request: SJ940521

Surrogate Recovery Summary
Volatile Organic Compounds
EPA Method 624

		Percent Recovery		
Sample Name	**Lab Code**	1,2-Dichloroethane-D_4	Toluene-D_8	4-Bromofluorobenzene
MW-1 (33.8)	SJ940521-2	101	99	101
MW-2 (16.5)	SJ940521-3	101	99	102
MW-3 (32.4)	SJ940521-4	102	100	101
MW-4 (31.7)	SJ940521-5	102	101	101
MW-5 (33)	SJ940521-6	101	99	102
MW-6 (37)	SJ940521-7	102	99	101
MW-7 (20.7)	SJ940521-8	102	100	102
MW-8 (31)	SJ940521-9	107	100	104
RW-1 (33)	SJ940521-10	101	100	102
WGR-3 (23.8)	SJ940521-11	101	99	100
MW-3 (32.4) MS	SJ940521-4MS	102	100	100
MW-3 (32.4) DMS	SJ940521-4DMS	101	99	100
Method Blank	SJ940510-WMB	101	99	102
Method Blank	SJ940511-WMB	101	102	102
EPA Acceptance Limits:		76-114	88-110	86-115

Approved By: Carol J Klein Date: 5-24-94

SUR3/041594

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Client: IWM
Project: ARCO Facility No. 276

Date Analyzed: 5/5/94
Service Request: SJ940521

Initial Calibration Verification (ICV) Summary
Volatile Organic Compounds
EPA Method 8240
Units: µg/L (ppb)

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
Chloromethane	50	50.5	101	70-130
Vinyl Chloride	50	54.1	108	70-130
Bromomethane	50	59.0	118	70-130
Chloroethane	50	49.8	100	70-130
Acetone	50	44.9	90	70-130
1,1-Dichloroethene	50	45.6	91	70-130
Carbon Disulfide	50	42.4	85	70-130
Methylene Chloride	50	47.9	96	70-130
trans-1,2-Dichloroethene	50	46.0	92	70-130
cis-1,2-Dichloroethene	50	46.8	94	70-130
1,1-Dichloroethane	50	48.5	97	70-130
Vinyl Acetate	50	54.3 *	109	70-130
2-Butanone (MEK)	50	46.4	93	70-130
Chloroform	50	48.9	98	70-130
1,1,1-Trichloroethane (TCA)	50	50.3	101	70-130
Carbon Tetrachloride	50	50.0	100	70-130
Benzene	50	46.5	93	70-130
1,2-Dichloroethane	50	48.9	98	70-130
Trichloroethene (TCE)	50	47.7	95	70-130
1,2-Dichloropropane	50	48.7	97	70-130
Bromodichloromethane	50	48.8	98	70-130
2-Chloroethyl Vinyl Ether	50	39.8	80	70-130
2-Hexanone	50	49.5	99	70-130
trans-1,3-Dichloropropene	50	44.0	88	70-130
Toluene	50	46.4	93	70-130
cis-1,3-Dichloropropene	50	46.3	93	70-130
1,1,2-Trichloroethane	50	49.5	99	70-130
Tetrachloroethene (PCE)	50	47.0	94	70-130
Dibromochloromethane	50	48.5	97	70-130
Chlorobenzene	50	45.9	92	70-130
Ethylbenzene	50	46.6	93	70-130
o- Xylene	50	44.9	90	70-130
Styrene	50	44.7	89	70-130
Bromoform	50	50.9	102	70-130
1,1,2,2-Tetrachloroethane	50	51.6	103	70-130

* Vinyl Acetate recovery is from a continuing calibration run analyzed on May 10, 1994.

Approved By: Carol J Klein Date: 5-24-94

ICV41/041594

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	IWM	**Date Collected:**	5/2/94
Project:	ARCO Facility No. 276	**Date Received:**	5/4/94
Sample Matrix:	Water	**Date Extracted:**	NA
		Date Analyzed:	5/10/94
		Service Request:	SJ940521

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

Sample Name: MW-3 (32.4)
Lab Code: SJ940521-4

	Spike Level		Sample	Spike Result		Percent Recovery		CAS Acceptance	Relative Percent
Analyte	MS	DMS	**Result**	MS	DMS	MS	DMS	Limits	**Difference**
1,1-Dichloroethene	1,000	1,000	ND	1,080	1,070	108	107	61-145	<1
Trichloroethene	1,000	1,000	ND	1,040	1,020	104	102	71-120	2
Chlorobenzene	1,000	1,000	ND	1,000	1,000	100	100	75-130	<1
Toluene	1,000	1,000	ND	998	984	100	98	76-125	1
Benzene	1,000	1,000	ND	992	976	99	98	76-127	2

Approved By: Carol J Klein Date: 5-24-94

DMS1S/041594

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APPENDIX B

CHAIN OF CUSTODY

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

ARCO Products Company Division of AtlanticRichfieldCompany

Task Order No. IWM-94-5CC

Chain of Custody

ARCO Facility no.	A 276
City (Facility)	OAKLAND
Project manager (Consultant)	TOM Do Jon / Jhon Young
Laboratory name	Columbia
ARCO engineer	Kyle Christie
Telephone no. (ARCO)	415 571 2434
Telephone no. (Consultant)	408 / 942 8955
Fax no. (Consultant)	408 / 942 1499
Contract number	07077
Consultant name	IWM - RESNA
Address (Consultant)	950 Ames av. Milp Ca 95035
Method of shipment	CAS COURIER

	Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid HCL	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH EPA M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	~~TPH~~ TOG EPA 418.1/~~SM503E~~	EPA 601/8010	EPA 624/~~8240~~	EPA 625/8270	TCLP Metals ☐ VOA ☐ Semi VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐		
	FB-1	1	2		✓		✓	✓	5-2-94	645		✓	✓				✓						
33.8	MW-1	2	4		✓		✓	✓	"	915		✓	✓				✓						
6.5	MW-2	3	4		✓		✓	✓	"	1100		✓	✓				✓						
32.4	MW-3	4	4		✓		✓	✓	"	940		✓	✓				✓						
31.7	MW-4	5	6		✓		✓	✓	"	1020		✓	✓		✓		✓						
V.V. 33	MW-5	6	4		✓		✓	✓	"	1330 V.V.		✓	✓				✓						
37	MW-6	7	4		✓		✓	✓	"	1420		✓	✓				✓						
20.7	MW-7	8	4		✓		✓	✓	"	1240		✓	✓				✓						
31	MW-8	9	4		✓		✓	✓	"	1139		✓	✓				✓						
33	RW-1	10	4		✓		✓	✓	"	1414		✓	✓				✓						
23.8	WGR-3	11	4		✓		✓	✓	"	1318		✓	✓				✓						

Special detection Limit/reporting

Special QA/QC

Remarks: Hold on FB-1

Lab number: SJ94-0521

Condition of sample: Ok

Temperature received: cool

	Date	Time	Received by	Date	Time
Relinquished by sampler: [signature]	5/4/94	1000AM	Received by: [signature]		
Relinquished by: [signature]	5-4-94	11:00	Received by: [signature]	5-4-94	11:00
Relinquished by			Received by laboratory		

Turnaround time

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

Distribution: White copy — Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant
APPC-3292 (2-91)

I NTEGRATED
W ASTESTREAM
M ANAGEMENT, INC.

June 3, 1994

Mr. John Young
RESNA Industries
3315 Almaden Expressway, Suite 34
San Jose, CA 95118

Dear Mr. Young:

Attached are the field data sheets and analytical results for quarterly ground water sampling at ARCO Facility No. A-276 in Oakland, California. Integrated Wastestream Management measured the depth to water and collected samples from wells at this site on May 2, 1994.

Sampling was carried out in accordance with the protocols described in the "Request for Bid for Quarterly Sampling at ARCO Facilities in Northern California".

Please call us if you have any questions.

Sincerely,
Integrated Wastestream Management

Tom DeLon
Project Manager

Walter H. Howe
Registered Geologist

REGISTERED GEOLOGIST
WALTER H. HOWE
No. 730
Exp. 6/1/94
STATE OF CALIFORNIA

950 AMES AVENUE MILPITAS, CA. 95035 (408) 942-8955

INTEGRATED
WASTESTREAM
MANAGEMENT

Summary of Ground Water Sample Analyses for ARCO Facility A-276, Oakland, California

WELL NUMBER	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	RW-1	WGR-3
DATE SAMPLED	5/2/94	5/2/94	5/2/94	5/2/94	5/2/94	5/2/94	5/2/94	5/2/94	5/2/94	5/2/94
DEPTH TO WATER	31.66	16.15	32.16	31.60	31.06	37.02	20.51	29.26	31.96	20.06
SHEEN	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
PRODUCT THICKNESS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPHg	ND	3,400	<480 +	<490 +	ND	<860 +	38,000	ND	ND	ND
BTEX										
BENZENE	ND	130	ND	ND	ND	<1 ++	640	ND	ND	ND
TOLUENE	ND	21	ND	ND	ND	<1 ++	600	ND	ND	ND
ETHLYBENZENE	ND	73	ND	ND	ND	<1 ++	930	ND	ND	ND
XYLENES	ND	180	<0.9 ++	<0.9 ++	ND	1.3	7,200	ND	ND	ND
EPA 418.1										
PETROLEUM HYDROCARBONS	NA	NA	NA	5,900	NA	NA	NA	NA	NA	NA
EPA 624										
BENZENE	ND	140	<20 #	<20 #	ND	<50 #	440	ND	ND	ND
TOLUENE	ND	21	<20 #	<20 #	ND	<50 #	400	ND	ND	ND
PCE	35	ND	1,600	1,700	35	2,000	<50 #	ND	45	ND
ETHYLBENZENE	ND	79	<20 #	<20 #	ND	<50 #	660	ND	ND	ND
TOTAL XYLENES	ND	190	<100 #	<100 #	ND	<250 #	5,200	ND	ND	ND

FOOTNOTES:

Concentrations reported in ug/L (ppb).

TPHg = Total Purgeable Petroleum Hydrocarbons (USEPA Method 8015 Modified)

BTEX Distinction (USEPA Method 8020)

PCE = Tetrachloroethene (USEPA Method 8010)

* = Well inaccessible

** = Not sampled per consultant request.

DCE = cis-1, 2-Dichloroethene (USEPA Method 8010)

TCE = Trichloroethene (USEAP Method 8010)

ND = Not Detected.

NA = Not applicable.

FP = Floating product.

950 AMES AVENUE MILPITAS, CA 95035 (408) 942-8955

FIELD REPORT

Depth To Water / Floating Product Survey

New TD's taken 5-2-94

Site Arrival Time: 630
Site Departure Time: 1415
Weather Conditions: Sunny clear

DTW: Well Box or Well Casing (circle one) — Well Casing circled

Project No.:
Location: 10600 MacArthur blvd.
Date: May 2, 1994
Client / Station#: Arco 276
Field Technician: Vince / Cisco
Day of Week: Monday

DTW ORDER	WELL ID	SURFACE SEAL	LID SECURE	GASKET	LOCK	EXPANDING CAP	TOTAL DEPTH (Feet)	FIRST DEPTH TO WATER (Feet)	SECOND DEPTH TO WATER (Feet)	DEPTH TO FLOATING PRODUCT (Feet)	FLOATING PRODUCT THICKNESS (Feet)	SHEEN (Y = YES, N = NO)	COMMENTS	MATERIALS
2	MW-1	OK	yes	OK	OK	OK	39.03	31.66-	31.66-	N/A	N/A	N	2"	Hole · N Box
8	MW-2	OK	yes	OK	none	none	26.04	16.15	16.15	N/A	N/A	N	4"	Arcoaool
4	MW-3	OK	yes	OK	OK	OK	39.00	32.16+	32.16+	N/A	N/A	N	2"	9/16
5	MW-4	OK	yes	OK	OK	OK	48.78	31.60+	31.60+	N/A	N/A	N	2"	9/16
3	MW-5	OK	yes	OK	OK	OK	47.54	31.06-	31.06-	N/A	N/A	N	4"	Allen hole in box
7	MW-6	OK	yes	OK	OK	OK	53.61	37.02+	37.02+	N/A	N/A	N	2"	15/16
9	MW-7	OK	yes	OK	OK	OK	37.40	20.51+	20.51+	N/A	N/A	N	2"	15/16
1	MW-8	OK	yes	OK	none	none	49.0	29.26	29.26	N/A	N/A	N	4"	Allen
6	RW-1	OK	yes	OK	none	none	49.26	31.96	31.96	N/A	N/A	N	6"	Allen
10	WGR-3	OK	yes	OK	OK	OK	27.50	20.06	20.06	N/A	N/A	N	4"	Screw-D

PAGE 2 OF 4 DATE: 5-2-94 CLIENT/STATION #: ARCO 276 ADDRESS: 10600 MacArthur Blvd Oak.

WELL ID: MW-8 TD 49.0 - DTW 29.26 x Gal./Linear Ft. 0.66 x Casing Volume 3 = Calculated Purge 39.08 (11.35)

DATE PURGED: 5-2-94 START (2400 HR): 1044 END (2400 HR) ~~1058~~ 1135

DATE SAMPLED: 5-2-94 TIME (2400 HR): 1139 DTW: 31

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
1053	6	7.81	0.53	66.4	clear
1112	20	7.07	0.50	67.5	cloudy
1125	30	6.98	0.52	67.3	cloudy
1135	40	6.95	0.50	66.9	cloudy

Total purge: 40

PURGING EQUIP.: Centrifugal Pump / Bailer Disp. SAMPLING EQUIP: Bailer Disp.

REMARKS:

WELL ID: MW-5 TD 47.54 DTW 31.04 - Gal./Linear Ft. 0.66 x Casing Volume 3 = Calculated Purge 32.63

DATE PURGED: 5-2-94 START (2400 HR): 1241 END (2400 HR) 1327

DATE SAMPLED: 5-2-94 TIME (2400 HR): 1330 DTW: 33

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
1251	6	7.25	045	69.8	clear
1306	20	6.67	0.42	68.0	clear
1322	30	6.66	0.40	67.5	cloudy
1327	34	6.63	0.39	67.3	cloudy

Total purge: 34

PURGING EQUIP.: Centrifugal Pump / Bailer Disp. SAMPLING EQUIP: Bailer Disp.

REMARKS:

WELL ID: RW-1 TD 49.26 DTW 31.96 x Gal./Linear Ft. 1.5 x Casing Volume 3 = Calculated Purge 41.85

DATE PURGED: 5-2-94 START (2400 HR): 1354 END (2400 HR) 1411

DATE SAMPLED: 5-2-94 TIME (2400 HR): 1414 DTW: 33

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
1357	5	6.43	1.38	68.3	clear
1401	20	6.65	1.38	68.5	clear
1406	33	6.77	1.40	68.0	clear
1411	45	6.79	1.44	67.8	clear

Total purge: 45

PURGING EQUIP.: Centrifugal Pump / Bailer Disp. SAMPLING EQUIP: Bailer Disp.

REMARKS:

WELL ID: ____ TD ____ - DTW ____ x Gal./Linear Ft. ____ x Casing Volume ____ = Calculated Purge ____

DATE PURGED: ____ START (2400 HR): ____ END (2400 HR) ____

DATE SAMPLED: ____ TIME (2400 HR): ____ DTW: ____

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)

Total purge: ____

PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP: Bailer Disp.

REMARKS:

PRINT NAME: Vince Valdez SIGNATURE: Vince Valdez

CASING DIAMETER (inches): 2 3 4 6 8 12 Other: ____

GALLON/LINEAR FOOT: 0.17 0.38 0.66 1.5 2.6 5.8 Other: ____

PAGE 2 OF 4 DATE: 5-2-94 CLIENT/STATION #: ARCO 276 ADDRESS: 10600 MacArthur Blvd. OAK.

WELL ID: MW-7 TD 37.40 - DTW 20.51 x Gal./Linear Ft. 0.17 x Casing Volume 3 = Calculated Purge 8.61

DATE PURGED: 5-2-94 START (2400 HR): 1230 END (2400 HR) 1234
DATE SAMPLED: 5-2-94 TIME (2400 HR): 1240 DTW: 20.7

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	E.C. (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
1231	1.5	6.96	0.52	76.8	CLEAR
1232	3	6.81	0.49	75.9	CLEAR
1233	6	6.71	0.47	75.4	CLEAR
1234	9	6.77	0.49	75.3	CLEAR
Total purge:	9				

PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP.: Bailer Disp.
REMARKS:

WELL ID: MW-6 TD 53.64 - DTW 37.02 x Gal./Linear Ft. 0.17 x Casing Volume 3 = Calculated Purge 8.47

DATE PURGED: 5-2-94 START (2400 HR): 1334 END (2400 HR) 1412
DATE SAMPLED: 5-2-94 TIME (2400 HR): 1420 DTW: 37

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	E.C. (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
1339	2	6.29	1.57	72.9	CLOUDY
1358	4	6.75	1.62	69.0	CLOUDY
1404	6	6.73	1.49	67.9	CLOUDY
1412	9	6.76	1.54	67.8	CLOUDY
Total purge:	9				

PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP: Bailer Disp.
REMARKS:

WELL ID: WBR-3 TD 27.50 - DTW 20.06 x Gal./Linear Ft. 0.66 x Casing Volume 3 = Calculated Purge 1.73

DATE PURGED: 5-2-94 START (2400 HR): 1256 END (2400 HR) 1302
DATE SAMPLED: 5-2-94 TIME (2400 HR): 1318 DTW: 23.8

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	E.C. (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
1259	2	6.54	0.32	74.3	CLEAR
1300	7	6.37	0.36	74.1	CLEAR
1302	11	6.29	0.36	73.8	CLEAR
Total purge:	11				

PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP: Bailer Disp.
REMARKS: WELL PUMPED DRY AT 11 GALLONS.

WELL ID: TD - DTW x Gal./Linear Ft. x Casing Volume = Calculated Purge

DATE PURGED: START (2400 HR): END (2400 HR)
DATE SAMPLED: TIME (2400 HR): DTW:

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	E.C. (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
Total purge:					

PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP: Bailer Disp.
REMARKS:

PRINT NAME: FRANCISCO ALBARRAN SIGNATURE: Francisco Albarran

CASING DIAMETER (inches): 2 3 4 6 8 12 Other:
GALLON/LINEAR FOOT: 0.17 0.38 0.66 1.5 2.6 5.8 Other: