

December 20, 2000

3164 Gold Camp Drive Suite 200 Rancho Cordova, CA 95670-6021 U.S.A. 916/638-2085 FAX: 916/638-8385

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

Subject:

Quarterly Groundwater Monitoring Report, Third Quarter 2000

ARCO Service Station No. 374

6407 Telegraph Avenue

94609 Oakland, California

Delta Project No. D000-302

Dear Mr. Supple:

Delta Environmental Consultants, Inc. is submitting the attached report that presents the results of the third quarter 2000 groundwater monitoring program at ARCO Products Company Service Station No. 374, located at 6407 Telegraph Avenue, Oakland, California. The monitoring program complies with the California Regional Water Quality Control Board requirements regarding underground tank investigations.

The interpretations contained in this report represent our professional opinions and are based, in part, on information supplied by the client. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeological and engineering practices at this time and location. Other than this, no warranty is implied or intended.

If you have any questions concerning this project, please contact Steven W. Meeks at (916) 536-2613.

Sincerely,

DELTA ENVIRONMENTAL CONSULTANTS, INC.

Trevor L. Atkinson Project Engineer

Steyen W. Meeks Project Manager

California Registered Civil Engineer No. C057461

TLA (LRP002.302.doc) **Enclosures** 

cc: Ms. Susan Hugo - Alameda County Health Care Services

Mr. John Kaiser - California Regional Water Quality Control Board, San Francisco Bay Region

Date: December 20, 2000

#### ARCO QUARTERLY GROUNDWATER MONITORING REPORT

Station No.: 374 Address: 6407 Telegraph Avenue, Oakland, CA
ARCO Environmental Engineer/Phone No.:
Consulting Co./Contact Person
Consultant Project No.:
Primary Agency/Regulatory ID No.

Consultant Project No.:
Primary Agency/Regulatory ID No.

6407 Telegraph Avenue, Oakland, CA
Paul Supple 925-299-8891
Delta Environmental Consultants, Inc.
Steven W. Meeks, P.E.

D000-302
California Regional Water Quality Control Board
San Francisco Bay Region

#### **WORK PERFORMED THIS QUARTER**

1. Performed quarterly groundwater monitoring for the third quarter 2000.

# **WORK PROPOSED FOR NEXT QUARTER**

- 1. Prepare and submit quarterly groundwater monitoring report for the third quarter 2000.
- 2. Perform quarterly groundwater monitoring and sampling for the fourth quarter 2000.

#### **QUARTERLY MONITORING:**

Current Phase of Project	Monitoring/Remediation
Frequency of Groundwater Sampling:	Annual (2 <sup>nd</sup> Quarter): MW-1, MW-2, MW-6 Semi-annual (2 <sup>nd</sup> /4 <sup>th</sup> Quarter): MW-3, MW-4
	Quarterly: MW-5
Frequency of Groundwater Monitoring:	Quarterly
Is Free Product (FP) Present On-Site:	No
FP Recovered this Quarter:	None
Cumulative FP Recovered to Date:	None
Bulk Soil Removed This Quarter:	None
Bulk Soil Removed to Date:	None
Current Remediation Techniques:	Intrinsic Bioremediation
Approximate Depth to Groundwater:	7.55 feet
Groundwater Gradient:	0.034 ft/ft toward southwest

#### **DISCUSSION:**

 Oxygen releasing compound replacement currently being evaluated to continue intrinsic bioremediation in MW-3 and MW-4.

#### ATTACHMENTS:

<ul> <li>Table 1</li> </ul>	Groundwater Elevation and Analytical Data
<ul> <li>Table 2</li> </ul>	Groundwater Flow Direction and Gradient
<ul> <li>Figure 1</li> </ul>	Groundwater Analytical Summary Map
• Figure 2	Groundwater Elevation Contour Map
<ul> <li>Appendix A</li> </ul>	Sampling and Analysis Procedures
<ul> <li>Appendix B</li> </ul>	Historical Groundwater Elevation Analytical Data Table
. ,	Groundwater Flow Direction and Gradient Table
	Intrinsic Bioremediation Evaluation and Enhancement Data
<ul> <li>Appendix C</li> </ul>	Certified Analytical Reports with Chain-of-Custody Documentation
<ul> <li>Appendix D</li> </ul>	Field Data Sheet

TABLE 1
GROUNDWATER ANALYTICAL DATA

ARCO Service Station 374 6407 Telegraph Avenue Oakland, California

Well Number	Date Sampled	Top of Riser Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	Benzene (μg/L)	Toluene (µg/L)	Ethyl- benzene (μg/L)	Total Xylenes (μg/L)	TPH as Gasoline (μg/L)	MTBE (µg/L)
MW-1	6/20/00	158.91	6.86	152.05	NS	NS	NS	NS	NS	NS
	9/28/00		7.50	151.41	NS	NS	NS	NS	NS	NS
MW-2	6/20/00	157.92	7.67	150.25	NS	NS	NS	NS	NS	NS
	9/28/00		8.51	149.41	NS	NS	NS	NS	NS	NS
MW-3	6/20/00	153.64	6.42	147.22	<0.5	<0.5	<0.5	<1.0	<50	<10
	9/28/00		7.31	146.33	NS	NS	NS	NS	NS	NS
MW-4	6/20/00	156.53	7.50	149.03	5,100	440	1,000	1,700	20,000	<250
	9/28/00		8.20	148.33	NS	NS	NS	NS	NS	NS
MW-5	6/20/00	151.33	7.84	143.49	<0.5	<0.5	<0.5	<1.0	<50	<10
	9/28/00		8.37	142.96	<0.5	<0.5	<0.5	<0.5	<50	<2.5
MW-6	6/20/00	153.84	4.79	149.05	NS	NS	NS	NS	NS	NS
	9/28/00		5.39	148.45	NS	NS	NS	NS	NS	NS

TPH = Total Petroleum Hydrocarbons

MTBE = Methyl tertiary butyl ether analyzed by EPA Method 8021B unless otherwise noted

μg/L = Micrograms per liter

NM = Not measured

NC = Not calculated

NS = Not sampled

Note: Please Refer to Appendix B for Historical Groundwater Elevation and Analytical Data Tables developed by IT

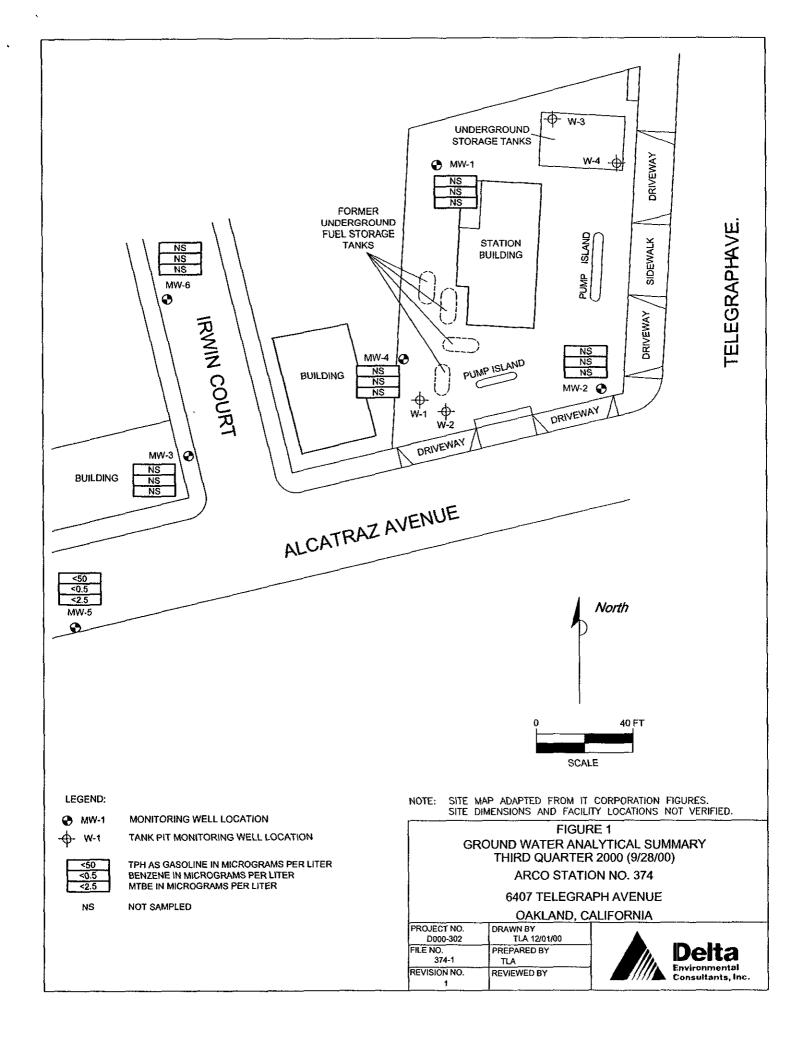
#### **TABLE 2**

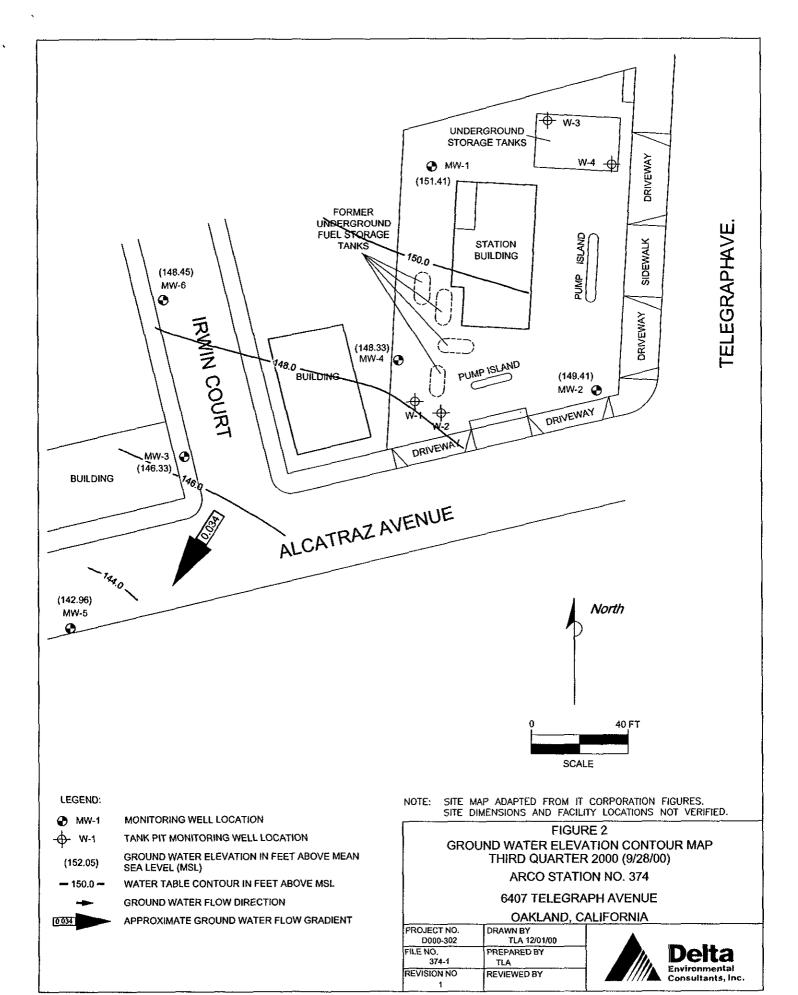
# **GROUNDWATER FLOW DIRECTION AND GRADIENT**

ARCO Service Station No. 374 6407 Telegraph Avenue Oakland, California

Date Measured	Average Flow Direction	Average Hydraulic Gradient
06/20/00	Southwest	0.035
09/28/00	Southwest	0.034

Note: Please refer to Appendix B for Historical Groundwater Elevation and Analytical Data Tables developed by IT Corporation





# APPENDIX A

Sampling and Analysis Procedures

#### FIELD METHODS AND PROCEDURES

# 1.0 GROUND WATER AND LIQUID-PHASE HYDROCARBON DEPTH ASSESSMENT

A water/liquid-phase hydrocarbon (LPH) interface probe was used to assess the thickness of LPH, if present, and a water level indicator was used to measure ground water depth in monitoring wells that did not contain LPH. Depth to ground water was measured from the top of each monitoring well casing. The tip of the water level indicator was subjectively analyzed for LPH sheen. All measurements and physical observations were recorded in the field.

### 2.0 SUBJECTIVE ANALYSIS OF GROUND WATER

Prior to purging, a water sample was collected from the monitoring well for subjective analysis. The sample was retrieved by gently lowering a clean, disposable bailer to approximately one-half the bailer length past the air/liquid interface. The bailer was then retrieved and the sample contained within the bailer was examined for LPH and the appearance of a LPH sheen.

#### 3.0 MONITORING WELL PURGING AND SAMPLING

Monitoring wells were purged using a centrifugal pump or disposable bailers until pH, temperature, and conductivity of the purge water had stabilized and a minimum of three to four well volumes of water had been removed. Ground water removed from the wells was stored in 55-gallon barrels at the site. The barrels were labeled with corresponding monitoring well numbers and the date of purging. After purging, ground water levels were allowed to stabilize. A ground water sample was then removed from each of the wells using a dedicated disposable bailer. If the well was purged dry, it was allowed to sufficiently recharge and a sample was collected. Samples were collected in air-tight vials, appropriately labeled, and stored on ice from the time of collection through the time of delivery to the laboratory. A chain-of-custody form was completed to document possession of the samples. Ground water samples were transported to the laboratory and analyzed within the EPA-specified holding times for the requested analyses. Purge water will be collected from the storage barrels in a vacuum truck and transported to an appropriate facility for treatment and/or disposal.

If the depth to groundwater was above the top of screens of the monitoring wells, then the wells were purged. Before sampling occurred, a polyvinyl chloride (PVC) bailer, centrifugal pump, low-flow submersible pump, or Teflon bailer was used to purge standing water in the casing and gravel pack from the monitoring well. Monitoring wells were purged according to the protocol previously stated in the first paragraph of this sub-section. In most monitoring wells, the amount of water purged before sampling was greater than or equal to three casing volumes. Some monitoring wells were expected to be evacuated to dryness after removing fewer than three casing volumes. These low-yield monitoring wells were allowed to recharge for up to 24 hours. Samples were obtained as soon as the monitoring wells recharged to a level sufficient for sample collection. If insufficient water recharged after 24 hours, the monitoring well was recorded as dry for the sampling event.

# **APPENDIX B**

IT Corporation
Historical Groundwater Elevation and Analytical Data Table
Groundwater Flow Direction and Gradient Table
Intrinsic Bioremediation Evaluation and Enhancement Data

# **APPPENDIX C**

Certified Analytical Reports And Chain-of-Custody Documentation



October 16, 2000

Steven Meeks
Delta Environmental Consultants - Rancho Cordova
3164 Gold Camp Drive Ste. 200
Rancho Cordova, CA 95670

ndha RHansa

RE: ARCO 374, Oakland, CA/S010027

Dear Steven Meeks

Enclosed are the results of analyses for sample(s) received by the laboratory on October 2, 2000. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sandra R. Hanson

Client Services Representative

Lito Diaz Vr Laboratory Director

CA ELAP Certificate Number 1624





Delta Environmental Consultants - Rancho Cordova

Project: ARCO 374, Oakland, CA

Sampled: 9/28/00

3164 Gold Camp Drive Ste. 200

Project Number: N/A

Received: 10/2/00

Rancho Cordova, CA 95670

Project Manager: Steven Meeks

Reported: 10/16/00

# **ANALYTICAL REPORT FOR S010027**

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
MW-5-8	S010027-01	Water	9/28/00
ТВ	S010027-02	Water	9/28/00

This analytical report must be reproduced in its entirety.

The results in this report apply to the samples analyzed in accordance with the chain of custody document.



Delta Environmental Consultants - Rancho Cordova Project: ARCO 374, Oakland, CA Sampled: 9/28/00
3164 Gold Camp Drive Ste. 200 Project Number: N/A Received: 10/2/00
Rancho Cordova, CA 95670 Project Manager: Steven Meeks Reported: 10/16/00

# Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT Sequoia Analytical - Sacramento

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
<u>MW-5-8</u>			S0100	<u>27-01</u>			Water	
Purgeable Hydrocarbons	0100132	10/12/00	10/12/00		50.0	ND	ug/l	
Benzene	11	н			0.500	ND	19	
Toluene	n	11	H		0.500	ND	P#	
Ethylbenzene	,,	n	11		0.500	ND	51	
Xylenes (total)	n	10	11		0.500	ND	19	
Methyl tert-butyl ether	n	ŋ	11		2.50	ND	11	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	60.0-140		101	%	
<u>TB</u>			S0100	27-02			Water	
Purgeable Hydrocarbons	0100132	10/12/00	10/12/00	<del></del>	50.0	ND	ug/l	
Benzene	**	"	0		0.500	ND	n	
Toluene	11	11	11		0.500	ND	P7	
Ethylbenzene	11	11	19		0.500	ND	90	
Xylenes (total)	Ħ	17	11		0.500	ND	øy	
Methyl tert-butyl ether	9	H	n		2.50	ND	tr	
Surrogate: a,a,a-Trifluorotoluene	"	"		60.0-140		95.3	%	



Delta Environmental Consultants - Rancho Cordova

Project: ARCO 374, Oakland, CA

Sampled: 9/28/00

3164 Gold Camp Drive Ste. 200 Rancho Cordova, CA 95670 Project Number: N/A
Project Manager: Steven Meeks

Received: 10/2/00 Reported: 10/16/00

# Total Eurgeable Hydrocai bons (C6-C12), BTEX and MTBE by DHS LUFT/Quality Controls (S.) Sequota Analytical - Sacramento

Batch: 0100132   Date Prepared: 10/12/00		Date	Spike	Sample	QC		Reporting Limit		RPD	RPD	
Blank   0100132-BLK1	Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	<u>%</u>	Limit	%	Notes*
Blank   0100132-BLK1			1 4045	100		1774	Can Makhada ED	A 5020TD	(MaOID		
Purgeable Hydrocarbons   10/12/00   ND   ng/l   50.0				<u>/00</u>		Extrac	ion ivietnoa: EP	A SUSUB	(MeOH)		
Renzence			<u>JKI</u>		2.75	n	<b>70.0</b>				
Server   S	<del>-</del> •										
Ethylbenzene "											
Elly   terr-buty  te											
Methyl tert-butyl ether	Ethylbenzene										
Surrogate: a,a,a-Trifluorotoluene	• • •										
LCS											
Benzene	Surrogate: a,a,a-Trifluorotoluene	"	10.0		10.0	"	60.0-140	100			
Benzene	LCS	0100132-BS	<u>51</u>								
Ethylbenzene " 10.0 10.9 " 70.0-130 109  Xylenes (total) " 30.0 32.3 " 70.0-130 108  Methyl tert-butyl ether " 10.0 11.4 " 70.0-130 114  Surrogate: a,a,a-Trifluorotoluene " 10.0 ND 10.7 ug/l 60.0-140 99.6   Matrix Spike Benzene 10/12/00 10.0 ND 10.5 " 60.0-140 105  Ethylbenzene " 10.0 ND 11.0 " 60.0-140 105  Ethylbenzene " 10.0 ND 11.0 " 60.0-140 110  Xylenes (total) " 30.0 ND 32.7 " 60.0-140 109  Methyl tert-butyl ether " 10.0 ND 11.3 " 60.0-140 113  Surrogate: a,a,a-Trifluorotoluene " 10.0 ND 11.3 " 60.0-140 102   Matrix Spike Dup  Benzene 10/12/00 10.0 ND 11.8 ug/l 60.0-140 102  Matrix Spike Dup  Benzene 10/12/00 10.0 ND 11.8 ug/l 60.0-140 118 25.0 9.78  Toluene " 10.0 ND 11.8 " 60.0-140 118 25.0 11.7  Ethylbenzene " 10.0 ND 11.8 " 60.0-140 115 25.0 4.44  Xylenes (total) " 30.0 ND 34.5 " 60.0-140 115 25.0 5.36  Methyl tert-butyl ether " 10.0 ND 14.1 " 60.0-140 115 25.0 5.36  Methyl tert-butyl ether " 10.0 ND 14.1 " 60.0-140 115 25.0 5.36		10/12/00	10.0		10.7	ug/l	70.0-130				
Xylenes (total)	Toluene	16	10.0		10.5	**	70.0-130				
Xylenes (total)	Ethylbenzene	0	10.0		10.9	**	70.0-130	109			
Methyl tert-butyl ether         "         10.0         11.4         "         70.0-130         114           Surrogate: a,a,a-Trifluorotoluene         "         10.0         9.96         "         60.0-140         99.6           Matrix Spike         0100132-MS1         S010011-02         S010011	-	n	30.0		32.3	19	70.0-130	108			
Matrix Spike         0100132-MS1         S010011-02           Benzene         10/12/00         10.0         ND         10.7         ug/l         60.0-140         107           Toluene         "         10.0         ND         10.5         "         60.0-140         105           Ethylbenzene         "         10.0         ND         11.0         "         60.0-140         110           Xylenes (total)         "         30.0         ND         32.7         "         60.0-140         109           Methyl tert-butyl ether         "         10.0         ND         11.3         "         60.0-140         102           Matrix Spike Dup         0100132-MSD1         S010011-02         <		11	10.0		11.4	17	70.0-130	114			
Benzene   10/12/00   10.0   ND   10.7   ug/l   60.0-140   107     Toluene   "   10.0   ND   10.5   "   60.0-140   105     Ethylbenzene   "   10.0   ND   11.0   "   60.0-140   110     Xylenes (total)   "   30.0   ND   32.7   "   60.0-140   109     Methyl tert-butyl ether   "   10.0   ND   11.3   "   60.0-140   113     Surrogate: a,a,a-Trifluorotoluene   "   10.0   ND   11.3   "   60.0-140   102      Matrix Spike Dup		"	10.0		9.96	"	60.0-140	99.6			
Benzene   10/12/00   10.0   ND   10.7   ug/l   60.0-140   107	Matrix Spike	0100132-M	<u>S1 S</u>	010011-02							
Toluene " 10.0 ND 10.5 " 60.0-140 105 Ethylbenzene " 10.0 ND 11.0 " 60.0-140 110 Xylenes (total) " 30.0 ND 32.7 " 60.0-140 109 Methyl tert-butyl ether " 10.0 ND 11.3 " 60.0-140 113 Surrogate: a,a,a-Trifluorotoluene " 10.0 ND 11.3 " 60.0-140 102  Matrix Spike Dup  0100132-MSD1 S010011-02 Benzene 10/12/00 10.0 ND 11.8 ug/l 60.0-140 118 25.0 9.78 Toluene " 10.0 ND 11.8 " 60.0-140 118 25.0 11.7 Ethylbenzene " 10.0 ND 11.5 " 60.0-140 115 25.0 4.44 Xylenes (total) " 30.0 ND 34.5 " 60.0-140 115 25.0 5.36 Methyl tert-butyl ether " 10.0 ND 14.1 " 60.0-140 141 25.0 22.0 1		10/12/00	10.0	ND	10.7	ug/l	60.0-140	107			
Xylenes (total)   "   30.0   ND   32.7   "   60.0-140   109		n	10.0	ND	10.5		60.0-140	105			
Xylenes (total)         "         30.0         ND         32.7         "         60.0-140         109           Methyl tert-butyl ether         "         10.0         ND         11.3         "         60.0-140         113           Surrogate: a,a,a-Trifluorotoluene         "         10.0         10.2         "         60.0-140         102           Matrix Spike Dup         0100132-MSD1         S010011-02         S01001	Ethylbenzene	11	10.0	ND	11.0	19	60.0-140	110			
Methyl tert-butyl ether         "         10.0         ND         11.3         "         60.0-140         113           Surrogate: a,a,a-Trifluorotoluene         "         10.0         10.2         "         60.0-140         102           Matrix Spike Dup         0100132-MSD1         S010011-02         S010011-02<	•	n	30.0	ND	32.7	**	60.0-140	109			
Matrix Spike Dup         0100132-MSD1         S010011-02           Benzene         10/12/00         10.0         ND         11.8         ug/l         60.0-140         118         25.0         9.78           Toluene         "         10.0         ND         11.8         "         60.0-140         118         25.0         9.78           Ethylbenzene         "         10.0         ND         11.5         "         60.0-140         118         25.0         11.7           Ethylbenzene         "         10.0         ND         11.5         "         60.0-140         115         25.0         4.44           Xylenes (total)         "         30.0         ND         34.5         "         60.0-140         115         25.0         5.36           Methyl tert-butyl ether         "         10.0         ND         14.1         "         60.0-140         141         25.0         22.0         1		n	10.0	ND	11.3	12	60.0-140	113			
Benzene         10/12/00         10.0         ND         11.8         ug/l         60.0-140         118         25.0         9.78           Toluene         "         10.0         ND         11.8         "         60.0-140         118         25.0         11.7           Ethylbenzene         "         10.0         ND         11.5         "         60.0-140         115         25.0         4.44           Xylenes (total)         "         30.0         ND         34.5         "         60.0-140         115         25.0         5.36           Methyl tert-butyl ether         "         10.0         ND         14.1         "         60.0-140         141         25.0         22.0         1		77	10.0		10.2	"	60.0-140	102			
Benzene         10/12/00         10.0         ND         11.8         ug/l         60.0-140         118         25.0         9.78           Toluene         "         10.0         ND         11.8         "         60.0-140         118         25.0         11.7           Ethylbenzene         "         10.0         ND         11.5         "         60.0-140         115         25.0         4.44           Xylenes (total)         "         30.0         ND         34.5         "         60.0-140         115         25.0         5.36           Methyl tert-butyl ether         "         10.0         ND         14.1         "         60.0-140         141         25.0         22.0         1	Matrix Spike Dun	0100132-M	SD1 S	010011-02							
Toluene " 10.0 ND 11.8 " 60.0-140 118 25.0 11.7 Ethylbenzene " 10.0 ND 11.5 " 60.0-140 115 25.0 4.44  Xylenes (total) " 30.0 ND 34.5 " 60.0-140 115 25.0 5.36  Methyl tert-butyl ether " 10.0 ND 14.1 " 60.0-140 141 25.0 22.0 1					11.8	ug/l	60.0-140	118	25.0	9.78	
Ethylbenzene " 10.0 ND 11.5 " 60.0-140 115 25.0 4.44  Xylenes (total) " 30.0 ND 34.5 " 60.0-140 115 25.0 5.36  Methyl tert-butyl ether " 10.0 ND 14.1 " 60.0-140 141 25.0 22.0 1							60.0-140	118	25.0	11.7	
Xylenes (total) " 30.0 ND 34.5 " 60.0-140 115 25.0 5.36 Methyl tert-butyl ether " 10.0 ND 14.1 " 60.0-140 141 25.0 22.0 1	<del>-</del>	n				H	60.0-140	115	25.0	4.44	
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Delta Environmental Consultants - Rancho Cordova Project: ARCO 374, Oakland, CA Sampled: 9/28/00 3164 Gold Camp Drive Ste. 200 Project Number: N/A Received: 10/2/00 Rancho Cordova, CA 95670 Project Manager: Steven Meeks Reported: 10/16/00

# **Notes and Definitions**

#	Note
1	The RPD and/or spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
đry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

ARCO	Prod	ucts	Comp	pany	<b>⇔</b>		<del></del>	Task Or	rder No.	2	59	89	90									Chain of Custo	dy
ARCO Facili	ty no.	37	P	Cit (F	ty acility) (	DAK	ANd	4		Project (Consu	l manaç itant)	$\mathcal{E}_{Bt}$	, + e	. V -e	M	ec	<b>₹</b> 5					Laboratory name	_
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i				Matrix		Prese	evation				0 € (A)							 ₹	0000			Method of shipment	
Sample I.D.	Lab no.	Container no.	Soil	Water	Other	lce	Acid	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEXTPH LATO E EPA MG02/8020/8015	TPH Modified 8015 Gas [] Diesel []	Oil and Grease 413.1 U 413.2 U	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Semi	CAM Marate EPA 6010/7000	Lead Org/DHS   7420/7421			
MW-5-8		4		X		X	×	9-28-00	1106		X						DICX			2)		Special detection Limit/reporting	
TB		2		X		X	×	9-28-M	800		X								=	03			
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																						Priority Rush 1 Business Day	
Condition of Relinquished	•			<del></del>			Date		Time	1	erature ved by	/ecelve	d:	<del>-,-</del>				···				Rush	
	200	کلی	NO	1-			16-2-	-00	1046			61	- Je	ruck	0							2 Business Days	
Rejinquished	The	1620	cer				Date /0 - Z	-00		Receiv	M	911	KCO	2_(	H	'Ser	DM	į(	1210	0 [	35	Expedited 5 Business Days	
Relineuished	i by	<i>!</i>					Date		Time	Receiv	red by	laborato	угу		,	<b>7</b>	ate			Time		Standard 10 Business Days	28

# APPENDIX D

Field Data Sheets



3164 Gold Camp Drive, Suite 200 Rancho Cordova, California 95670 Direct: (916) 638-2085 Fax: (916) 638-8385

Arco Site Address:	6407 Telegraph Avenue	Arco Site Number:	374	
	Oakland, California	Delta Project No.:	D000-302	
Arco Project Manager:	Paul Supple	Delta Project PM:	Steven W. Meeks	
Site Sampled By:	Doulos Environmental	Date Sampled:	09/28/00	

Site Contact & Phone Number:

										,								
		Water Le	vel Data			Purge Volume Calculations					Sampling Analytes					Sample Record		
Well ID	Time	Depth to Water (feet)	Top of Screen Interval (feet)	Total Depth of Well (feet)	Check if Purge Not Required	Casing Water Column (A)	Well Diameter (inches)	Multiplier Value (B)	Three Casing Volumes (gallons)	Actual Water Purged (gallons)	BTEX (8020) VOA	TPH-g (8015M) VOA	MTBE (8020) VOA	Other	Dissolved Oxygen (mg/L)	Sample Freqency (A, S, Q)	Sample I.D.	Sample Time
MW-1	9:45	7.50	7.0	26.3		18.81	4 inch	2.0	37.6	N/A					NM	A/2		
MW-2	9:49	8.51	7.0	25.9		17.37	4 inch	2.0	34.7	N/A					NM	A/2		1
MW-3	9:55	7.31	7.0	26.5		19.14	4 inch	2.0	38.3	N/A					NM	S/5,11		
MW-4	10:00	8.20	7.0	26.6		18.36	4 inch	2.0	36.7	N/A					NM	S/5,11		
MW-5	10:05	8.37	10.0	22.7		14.31	4 inch	2.0	28.6	28	V	V	<b>\</b>		0.81	Q/2,5,8,11	MW-5	
MW-6	10:10	5.39	5.0	14.5		9.11	4 inch	2.0	18.2	N/A					NM	A/2		
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(A)-Casing Water Column: Depth to Bottom - Depth to Water (B)-Multiplier Values: (2" Well: 0.5) (4" Well: 2.0) (6" Well: 4.4)

Sampling Sequence: Annual: MW-1, MW-2, MW-3; Semi-Annual: MW-3, MW-4

Quarterly: MW-5

Sampling Notes:

List depth of Sample on C.O.C. [I.e. MW-1(30)]. Make Sure to Note on C.O.C. "Provide Lowest Reporting Limit Available."

Original Copies of Field Sampling Sheets are Located in Project File

If the water level is below the top of the screen, take a grab sample and check box for NO PURGE (NP). If the water level is above the screen, purge as normal.



Site Contact & Phone Number:

3164 Gold Camp Drive, Suite 200 Rancho Cordova, California 95670 Direct: (916) 638-2085 Fax: (916) 638-8385

rco Site Address:	6407	Telegraph	Avenue
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374 D000-302

Arco Project Manager:

Oakland, California Delta Project No.:

Paul Supple Delta Project PM:

M: Steven W. Meeks

Site Sampled By: Doulos Environmental

Date Sampled: 09/28/00

Well ID	Time	Temp °C	pH Units	Sp. Cond.	Volume	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Volume	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Volume
MW-1																	
Well ID														<u></u>			
						, ,	····										
		Tama 90	-11 Unito	Sa Cand	Volume	Well ID	Time	Temp °C	n Ll I Inita	Sp. Cond.	Volumo	Well ID	Time	Temp °C	n∐ Unite	Sp. Cond.	Volume
	Time	Temp C	pn units	Sp. Cond.	volume	VVeil ID	ime	Temp C	ph Olius	Sp. Cona.	Volume	AAGII ID	TITLE	Temp C	pri Onits	Sp. Cond.	Volume
MW-2																	
						ļ <b>i</b>			_				<del></del>				
Well ID	Time	Temp °C	pH Units	Sp. Cond.	Volume	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Volume	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Volume
MW-3																	
			><			İ											
															<u> </u>		
Well ID	Time	Temp °C	nH I Inits	Sp. Cond.	Volume	Well ID	Time	Temp °C	nH Units	Sp. Cond.	Volume	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Volume
MW-4	11110	Temp 0	priorito	ор. ооны.	VOIGITIO	71015	11110	T	priome	j opi odila.			,		<b>F</b>		
					_			<u> </u>									
Well ID	Time	Temp °C		Sp. Cond.	Volume	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Volume	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Volume
MW-5	10:45	22.6	7.01	588	1											:	
	10:47	22.1	6.96	573	2												
	10:49	21.8	6.91	570	3												
Well ID	Time	Temp °C	pH Units	Sp. Cond.	Volume	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Volume	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Volume
MW-6																-	
						· \								<u> </u>			
NA/-H ID	T:	T %		Co Count	Valuma	Well ID	Time	Town °C	nti Unito	Sp. Cond.	Volumo	Wall ID	Time	Temp °C	nH Unite	Sp. Cond.	Volume
Well ID	Time	remp C	pri Units	Sp. Cond.	Volume	AAGII ID	THITIE	renib C	PEI OING	Sp. Cond.	volume	AACII ID	11116	Temp C	j pri Omits	Op. Cond.	Volume
				_										<del> </del>			
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			<u> </u>			<b>!</b>						_					

Notes: NP = NO PURGE

Original Copies of Field Sampling Sheets are Located in Project File

TLA (Arco 0374-GW Sampling.XLS) (Page 2 of 2) Last Printed: 12/4/00