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September 24, 2001

R0760

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

Subject: *Quarterly Groundwater Monitoring Report, Second Quarter 2001*
ARCO Service Station No. 4931
Oakland, California
Project No. D000-313

Dear Mr. Supple:

Delta Environmental Consultants, Inc. is submitting the attached report that presents the results of the second quarter 2001 groundwater monitoring program at ARCO Products Company Service Station No. 4931, located at 731 West MacArthur Boulevard, Oakland, California. The monitoring program complies with the Alameda County Health Care Services Agency 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.

Brett Bardsley For
Trevor L. Atkinson
Project Engineer

Steven W. Meeks, P.E.
Project Manager
California Registered Civil Engineer No. C057461

9/24/01

TLA (Lrp00.313.doc)
Enclosures

cc: Ms. Susan Hugo – Alameda County Health Care Services Agency
Mr. John Kaiser – California Regional Water Quality Control Board, San Francisco Bay Region

Date: September 24, 2001

ARCO QUARTERLY GROUNDWATER MONITORING REPORT

Station No.: 4931 Address:	731 West MacArthur Boulevard, Oakland, CA
ARCO Environmental Engineer/Phone No.:	Paul Supple 925-299-8891
Consulting Co./Contact Person	Delta Environmental Consultants, Inc. Steven W. Meeks, P.E.
Consultant Project No.:	D000-313
Primary Agency/Regulatory ID No.	Alameda County Health Care Services Agency

WORK PERFORMED THIS QUARTER

1. Performed quarterly groundwater monitoring for the second quarter 2001.
2. Prepared quarterly groundwater monitoring for the first quarter 2001.

WORK PROPOSED FOR NEXT QUARTER

1. Prepare and submit quarterly groundwater monitoring report for second quarter 2001.
2. Perform quarterly groundwater monitoring and sampling for third quarter 2001.

QUARTERLY MONITORING:

Current Phase of Project	Monitoring
Frequency of Groundwater Sampling:	Annual (2nd Quarter): A-7, A-13 Semi-Annual (2nd/4th Quarter): A-3, A-5, A-11, A-12 Quarterly: A-2, A-4, A-6, A-8, A-9
Frequency of Groundwater Monitoring:	Quarterly
Is Free Product (FP) Present On–Site:	No
FP Recovered this Quarter:	N/A
Cumulative FP Recovered to Date:	Unknown
Bulk Soil Removed This Quarter:	None
Bulk Soil Removed to Date:	Unknown
Current Remediation Techniques:	Intrinsic Bioremediation Enhancement using ORC
Approximate Depth to Groundwater:	9.48 feet
Groundwater Gradient:	0.014 ft/ft West
Cumulative TPHg/Benzene Removed:	0.45/0.06 gallons

DISCUSSION:

- Bioremediation enhancement is ongoing using oxygen release compound (ORC) in wells A-4, A-8, A-9 and AR-1.
- A-13 was not sampled since the well appears to have been paved over.

ATTACHMENTS:

- Table 1 Groundwater Elevation and Analytical Data
- Table 2 Groundwater Flow Direction and Gradient
- Figure 1 Groundwater Analytical Summary Map
- Figure 2 Groundwater Elevation Contour Map
- Appendix A Sampling and Analysis Procedures
- Appendix B Historical Data Tables (IT Corporation)
- Appendix C Certified Analytical Reports with Chain–of–Custody Documentation
- Appendix D Remedial System Performance Summary
- Appendix E Field Sample Data

TABLE 1

GROUNDWATER ANALYTICAL DATA

ARCO Service Station No. 4931
731 West Macarthur Boulevard
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)
A-2	06/21/00	55.48	6.85	48.63	<0.5	<0.5	<0.5	<1.0	<50	<3.0
	09/20/00		10.45	45.03	< 0.5	< 0.5	<0.5	<0.5	<50	<2.5
	12/26/00		6.27	49.21	< 0.5	< 0.5	< 0.5	<0.5	< 50	<2.5
	03/20/01		4.57	50.91	< 0.5	< 0.5	< 0.5	<0.5	< 50	<2.5
	06/12/01		9.27	46.21	< 0.5	< 0.5	< 0.5	<0.5	< 50	<2.5
A-3	06/21/00	54.66	9.48	45.18	<0.5	<0.5	<0.5	<1.0	<50	46
	09/20/00		10.24	44.42	< 0.5	< 0.5	<0.5	<0.5	<50	89.6
	12/26/00		9.58	45.08	< 0.5	< 0.5	< 0.5	<0.5	< 50	7.11
	03/20/01		6.34	48.32	NS	NS	NS	NS	NS	NS
	06/12/01		9.76	44.9	< 0.5	< 0.5	< 0.5	<0.5	< 50	86
A-4	06/21/00	54.73	9.49	45.24	110	2.1	11	5.9	2,100	2,000
	09/20/00		10.33	44.4	127	<5.0	9.07	7.42	1,540	1,940
	12/26/00		9.34	45.39	42.7	<5.0	11	10.9	1,550	1,210
	03/20/01		7.56	47.17	40.9	<5.0	15.5	14.6	913	<25
	06/12/01		9.83	44.9	230	<20	21	<20	2,000	4,700
A-5	06/21/00	54.17	9.29	44.88	<0.5	<0.5	<0.5	<1.0	980	2,000
	09/20/00		10.23	43.94	NS	NS	NS	NS	NS	NS
	12/26/00		9.65	44.52	<0.5	<0.5	<0.5	<0.5	525	1,200
	03/20/01		8.05	46.12	NS	NS	NS	NS	NS	NS
	06/12/01		9.81	44.36	<5.0	<5.0	<5.0	<5.0	830	3,200
A-6	06/21/00	55.17	8.67	46.50	<0.5	<0.5	<0.5	<1.0	<50	<3.0
	09/20/00		9.34	45.83	< 0.5	< 0.5	<0.5	<0.5	<50	<2.5
	12/26/00		8.65	46.52	< 0.5	< 0.5	< 0.5	<0.5	< 50	<2.5

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ARCO Service Station No. 4931
731 West Macarthur Boulevard
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)
A-6 (Cont.)	03/20/01		6.84	48.33	< 0.5	< 0.5	< 0.5	<0.5	< 50	<2.5
	06/12/01		8.93	46.24	< 0.5	< 0.5	< 0.5	<0.5	< 50	7
A-7	06/21/00	54.71	8.58	46.13	<0.5	<0.5	<0.5	<1.0	<50	<3.0
	09/20/00		9.19	45.52	NS	NS	NS	NS	NS	NS
	12/26/00		8.50	46.21	NS	NS	NS	NS	NS	NS
	03/20/01		6.75	47.96	NS	NS	NS	NS	NS	NS
	06/12/01		8.80	45.91	< 0.5	< 0.5	< 0.5	<0.5	< 50	<2.5
A-8	06/21/00	53.77	9.07	44.70	<0.5	<0.5	<0.5	810	810	1,500
	09/20/00		9.72	44.05	2,680	46	439	370	10,800	4,410
	12/26/00		9.20	44.57	1,440	<50	202	106	7,700	2,230
	03/20/01		7.51	46.26	1,280	<50	53.9	<50	<5,000	2,880
	06/12/01		9.53	44.24	1,700	<50	61	54	5,600	2,900
A-9	06/21/00	53.04	8.56	44.48	<0.5	<0.5	<0.5	<1.0	<50	5.0
	09/20/00		9.05	43.99	< 0.5	< 0.5	<0.5	<0.5	<50	<2.5
	12/26/00		8.49	44.55	< 0.5	< 0.5	< 0.5	<0.5	< 50	<2.5
	03/20/01		6.95	46.09	< 0.5	< 0.5	< 0.5	<0.5	< 50	<2.5
	06/12/01		8.67	44.37	< 0.5	< 0.5	< 0.5	<0.5	< 50	4.8
A-10	06/21/00	54.26	10.47	43.79	NS	NS	NS	NS	NS	NS
	09/20/00		10.76	43.50	NS	NS	NS	NS	NS	NS
	12/26/00		NM	NC	NS	NS	NS	NS	NS	NS
	03/20/01		NM	NC	NS	NS	NS	NS	NS	NS

TABLE 1

GROUNDWATER ANALYTICAL DATA

ARCO Service Station No. 4931
731 West Macarthur Boulevard
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)
A-11	06/21/00	53.74	9.54	44.20	<0.5	<0.5	<0.5	<1.0	<50	4.0
	09/20/00		10.62	43.12	NS	NS	NS	NS	NS	NS
	12/26/00		10.03	43.71	< 0.5	< 0.5	< 0.5	<0.5	< 50	<2.5
	03/20/01		8.49	45.25	NS	NS	NS	NS	NS	NS
	06/12/01		10.21	43.53	< 0.5	< 0.5	< 0.5	<0.5	< 50	<2.5
A-12	06/21/00	52.05	9.28	42.77	<0.5	<0.5	<0.5	<1.0	<50	18
	09/20/00		9.55	42.50	NS	NS	NS	NS	NS	NS
	12/26/00		9.05	43.00	< 0.5	< 0.5	< 0.5	<0.5	< 50	17.3
	03/20/01		7.92	44.13	NS	NS	NS	NS	NS	NS
	06/12/01		9.26	42.79	< 0.5	< 0.5	< 0.5	<0.5	< 50	25
A-13	06/21/00	55.11	NM	NC	NS	NS	NS	NS	NS	NS
	09/20/00		NM	NC	NS	NS	NS	NS	NS	NS
	12/26/00		NM	NC	NS	NS	NS	NS	NS	NS
	03/20/01		NM	NC	NS	NS	NS	NS	NS	NS
	06/12/01		NM	NC	NS	NS	NS	NS	NS	NS
AR-1	06/21/00	54.72	NM	NC	NS	NS	NS	NS	NS	NS
	09/20/00		NM	NC	NS	NS	NS	NS	NS	NS
	12/26/00		9.95	44.77	NS	NS	NS	NS	NS	NS
	03/20/01		8.34	46.38	NS	NS	NS	NS	NS	NS
	06/12/01		10.17	44.55	NS	NS	NS	NS	NS	NS

TABLE 1

GROUNDWATER ANALYTICAL DATA

ARCO Service Station No. 4931
731 West Macarthur Boulevard
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)
AR-2	06/21/00	54.77	NM	NC	NS	NS	NS	NS	NS	NS
	09/20/00		NM	NC	NS	NS	NS	NS	NS	NS
	12/26/00		NM	NC	NS	NS	NS	NS	NS	NS
	03/20/01		3.13	51.64	NS	NS	NS	NS	NS	NS
	06/12/01		4.51	50.26	NS	NS	NS	NS	NS	NS
AR-3	06/21/00	54.19	NM	NC	NS	NS	NS	NS	NS	NS
	09/20/00		NM	NC	NS	NS	NS	NS	NS	NS
	12/26/00		9.70	44.49	NS	NS	NS	NS	NS	NS
	03/20/01		NM	NC	NS	NS	NS	NS	NS	NS
	06/12/01		NM	NC	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 Corporation

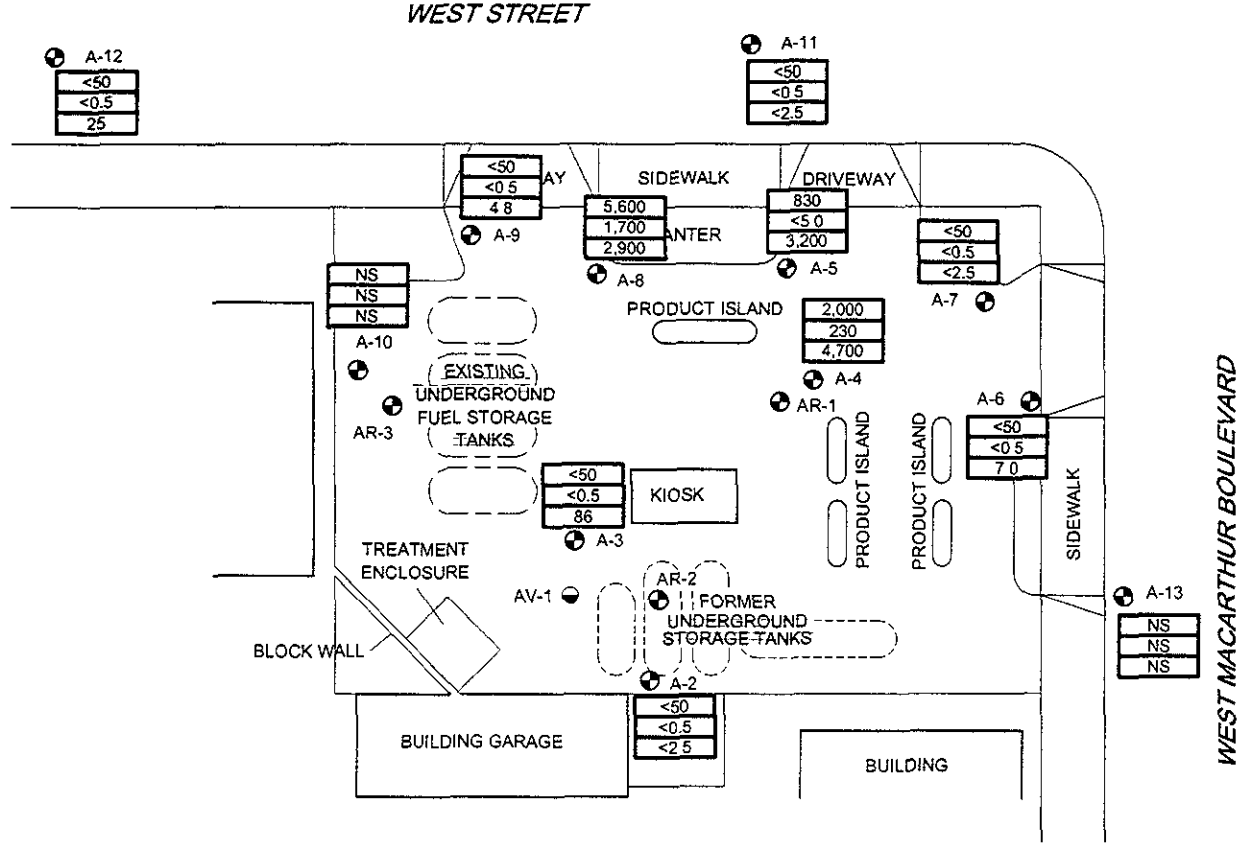
TABLE 2

FLOW DIRECTION AND GRADIENT

ARCO Service Station No. 4931
731 West Macarthur Boulevard
Oakland, California

Date Measured	Average Flow Direction	Average Hydraulic Gradient
06/21/00	West-Southwest	0.031
09/20/00	Southwest	0.013
12/26/00	West	0.028
03/20/01	West	0.046
06/12/01	West	0.014

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



LEGEND:

A-2	MONITORING WELL LOCATION
AV-1	SOIL VAPOR EXTRACTION WELL LOCATION
<50 <0.5 <2.5	TPH AS GASOLINE IN MICROGRAMS PER LITER BENZENE IN MICROGRAMS PER LITER MTBE IN MICROGRAMS PER LITER
NS	NOT SAMPLED

North

0 40 FT

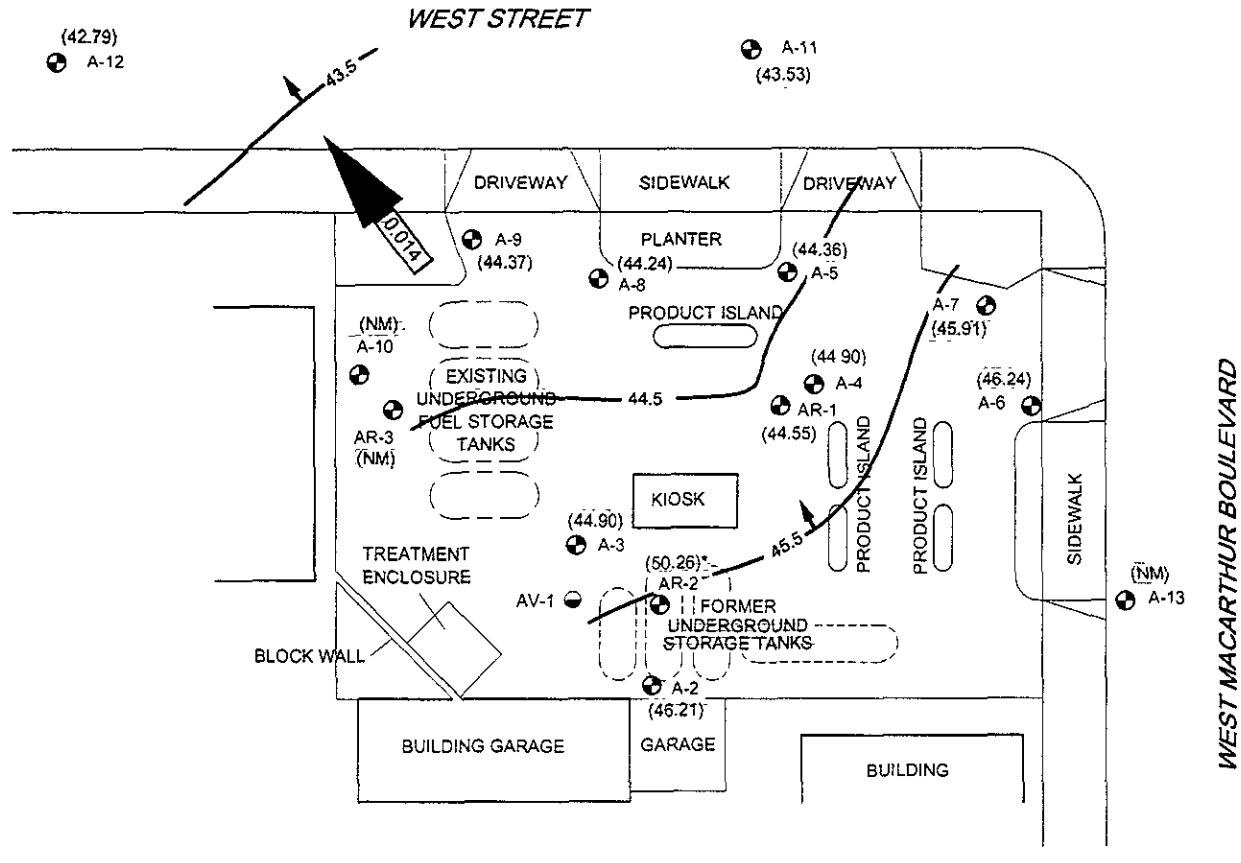
SCALE

NOTE SITE MAP ADAPTED FROM IT CORPORATION FIGURES
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED

FIGURE 1
GROUND WATER ANALYTICAL SUMMARY
SECOND QUARTER 2001 (6/12/01)
ARCO STATION NO. 4931
731 WEST MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

PROJECT NO. D000-313	DRAWN BY TLA 7/16/01
FILE NO 4931-1	PREPARED BY TLA
REVISION NO 1	REVIEWED BY

Delta Environmental Consultants, Inc.



NOTE. SITE MAP ADAPTED FROM IT CORPORATION FIGURES.
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

LEGEND:

A-2	MONITORING WELL LOCATION
AV-1	SOIL VAPOR EXTRACTION WELL LOCATION
(46.21)	GROUND WATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (MSL)
44.5	WATER TABLE CONTOUR IN FEET ABOVE MSL
	GROUND WATER FLOW DIRECTION
0.014	APPROXIMATE GROUND WATER FLOW GRADIENT
*	WELL(S) NOT USED IN CONTOUR MAP CONSTRUCTION

North

0 40 FT

SCALE

FIGURE 2
GROUND WATER ELEVATION CONTOUR MAP
SECOND QUARTER 2001 (6/12/01)
ARCO STATION NO. 4931
731 WEST MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

PROJECT NO D000-313	DRAWN BY TLA 7/16/01
FILE NO 4931-1	PREPARED BY TLA
REVISION NO 1	REVIEWED BY

Delta Environmental Consultants, Inc.

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

Historical Data Tables

IT Corporation

Table 1
Groundwater Elevation and Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, and MTBE)

ARCO Service Station 4931
731 West MacArthur Boulevard, Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
A-2	03/26/96	55.48	5.37	50.11	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM	
A-2	05/22/96	55.48	5.25	50.23	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM	
A-2	08/22/96	55.48	10.45	45.03	<50	1.1	1.8	<0.5	1.3	<2.5	NA	NM	
A-2	12/19/96	55.48	5.53	49.95	<50	<0.5	<0.5	<0.5	<0.5	2.7	NA	NM	
A-2	04/01/97	55.48	8.77	46.71	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NM	
A-2	05/27/97	55.48	9.87	45.61	<50	<0.5	<0.5	<0.5	<0.5	4.6	NA	NM	
A-2	08/12/97	55.48	11.11	44.37	<50	<0.5	<0.5	<0.5	<0.5	5.6	NA	NM	
A-2	11/14/97	55.48	10.63	44.85	<50	0.9	2.8	<0.5	2.4	27	NA	2.6	
A-2	03/18/98	55.48	3.58	51.90	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	NM	
A-2	05/19/98	55.48	4.82	50.66	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.30	P
A-2	07/29/98	55.48	8.94	46.54	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.2	NP
A-2	10/09/98	55.48	10.82	44.66	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	0.5	NP
A-2	02/19/99	55.48	4.46	51.02	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	3.0	P
A-2	06/02/99	55.48	5.59	49.89	<50	<0.5	0.6	<0.5	<0.5	<3	NA	5.35	NP
A-2	08/26/99	55.48	10.67	44.81	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	0.79	NP
A-2	10/26/99	55.48	4.61	50.87	<50	<0.5	<0.5	<0.5	<1	<3	NA	2.14	P
A-2	02/25/00	55.48	3.10	52.38	<50	<0.5	<0.5	<0.5	<1	<3	NA	4.21	NP
A-3	03/26/96	54.66	7.20	47.46	Not Sampled: Well Sampled Semiannually								
A-3	05/22/96	54.66	7.70	46.96	<50	1.2	1.9	0.7	1.3	NA	NA	NM	
A-3	08/22/96	54.66	10.88	43.78	Not Sampled: Well Sampled Semiannually								
A-3	12/19/96	54.66	7.70	46.96	5,900	<25	<25	<25	<25	NA	5,300	NM	
A-3	04/01/97	54.66	9.78	44.88	Not Sampled: Well Sampled Semiannually								
A-3	05/27/97	54.66	10.55	44.11	2,300	<20	<20	<20	<20	3,800	NA	NM	
A-3	08/12/97	54.66	11.12	43.54	Not Sampled: Well Sampled Semiannually								
A-3	11/14/97	54.66	8.24	46.42	<1,000	<10	<10	<10	<10	1,500	NA	3.8	
A-3	03/18/98	54.66	5.05	49.61	Not Sampled: Well Sampled Semiannually								
A-3	05/19/98	54.66	9.00	45.66	<250	<2.5	<2.5	<2.5	<2.5	220	NA	4.60	P
A-3	07/29/98	54.66	9.86	44.80	Not Sampled: Well Sampled Semiannually								
A-3	10/09/98	54.66	11.36	43.30	<250	<2.5	<2.5	<2.5	<2.5	260	NA	1.0	NP
A-3	02/19/99	54.66	6.19	48.47	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	2.5	NP
A-3	06/02/99	54.66	10.82	43.84	120	<1	<1	<1	<1	160	NA	2.78	NP

Table 1
Groundwater Elevation and Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, and MTBE)

ARCO Service Station 4931
731 West MacArthur Boulevard, Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
A-3	08/26/99	54.66	10.73	43.93	Not Sampled: Well Sampled Semiannually							0.95	
A-3	10/26/99	54.66	6.58	48.08	<50	<0.5	<0.5	<0.5	<1	32	NA	2.06	NP
A-3	02/25/00	54.66	5.41	49.25	Not Sampled: Well Sampled Semiannually								
A-4	03/26/96	54.73	7.95	46.78	8,900	1,200	21	200	220	NA	NA	NM	
A-4	05/22/96	54.73	8.35	46.38	5,300	700	<10	170	130	NA	NA	NM	
A-4	08/22/96	54.73	11.03	43.70	3,000	480	<5.0	75	26	150	NA	NM	
A-4	12/19/96	54.73	8.67	46.06	<2,000	<20	<20	<20	<20	NA	15,000	NM	
A-4	04/01/97	54.73	11.95	42.78	8,900	1,700	22	310	260	6,900	NA	NM	
A-4	05/27/97	54.73	10.80	43.93	7,100	960	<20	150	74	7,900	NA	NM	
A-4	08/12/97	54.73	11.38	43.35	4,300	670	12	51	27	2,800	NA	NM	
A-4	11/14/97	54.73	7.74	46.99	<20,000	300	500	<200	<200	27,000	NA	2.2	
A-4	03/18/98	54.73	6.80	47.93	4,700	600	<20	99	94	1,200	NA	1.0	
A-4	05/19/98	54.73	9.06	45.67	<2000	<20	<20	<20	720	2,000	NA	1.28	P
A-4	07/29/98	54.73	10.05	44.68	8,400	1,300	<20	290	130	1,800	NA	0.7	NP
A-4	10/09/98	54.73	11.20	43.53	3,500	400	<20	54	<20	1,700	NA	1.0	NP
A-4	02/19/99	54.73	6.85	47.88	<1,000	<10	<10	<10	12	650	NA	0.1	NP
A-4	06/02/99	54.73	11.00	43.73	6,100	760	16	260	89	2,300	NA	1.12	NP
A-4	08/26/99	54.73	10.80	43.93	1,100	68	5	8	4	1,400	NA	1.15	NP
A-4	10/26/99	54.73	10.11	44.62	1,500	39	2.3	9.0	5	1,700	NA	10.12	NP
A-4	02/25/00	54.73	5.90	48.83	870	53	1.1	4.6	20	600	NA	1.72	NP
A-5	03/26/96	54.17	7.93	46.24	Not Sampled: Well Sampled Semiannually								
A-5	05/22/96	54.17	8.20	45.97	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM	
A-5	08/22/96	54.17	10.70	43.47	Not Sampled: Well Sampled Semiannually								
A-5	12/19/96	54.17	8.39	45.78	9,900	1,100	330	230	700	NA	24	NM	
A-5	04/01/97	54.17	10.83	43.34	Not Sampled: Well Sampled Semiannually								
A-5	05/27/97	54.17	10.65	43.52	100	<0.5	<0.5	<0.5	<0.5	120	NA	NM	
A-5	08/12/97	54.17	11.05	43.12	Not Sampled: Well Sampled Semiannually								
A-5	11/14/97	54.17	10.51	43.66	<50	<0.5	<0.5	<0.5	<0.5	41	NA	4.8	
A-5	03/18/98	54.17	8.10	46.07	Not Sampled: Well Sampled Semiannually								
A-5	05/19/98	54.17	9.31	44.86	590	<5	<5	<5	<5	710	NA	2.48	P

Table 1
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(TPPH as Gasoline, BTEX Compounds, and MTBE)

ARCO Service Station 4931
731 West MacArthur Boulevard, Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
A-5	07/29/98	54.17	9.89	44.28	Not Sampled: Well Sampled Semiannually								
A-5	10/09/98	54.17	11.02	43.15	690	<5	<5	<5	<5	710	NA	1.0	NP
A-5	02/19/99	54.17	6.82	47.35	<2,000	<20	<20	<20	<20	2,300	NA	0.6	NP
A-5	06/02/99	54.17	10.82	43.35	1,500	<0.5	2.3	<0.5	<0.5	2,400	NA	2.81	NP
A-5	08/26/99	54.17	10.65	43.52	Not Sampled: Well Sampled Semiannually							0.49	
A-5	10/26/99	54.17	10.35	43.82	380	<0.5	<0.5	<0.5	<1	440	NA	1.55	NP
A-5	02/25/00	54.17	6.89	47.28	Not Sampled: Well Sampled Semiannually								
A-6	03/26/96	55.17	7.15	48.02	52	2.7	<0.5	1.1	2.0	NA	NA	NM	
A-6	05/22/96	55.17	7.35	47.82	<50	2.4	<0.5	0.88	1.7	NA	NA	NM	
A-6	08/22/96	55.17	10.12	45.05	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NM	
A-6	12/19/96	55.17	7.43	47.74	<50	1.7	<0.5	0.78	1.5	<2.5	NA	NM	
A-6	04/01/97	55.17	9.97	45.20	<50	4.7	<0.5	1.9	3.2	<2.5	NA	NM	
A-6	05/27/97	55.17	9.66	45.51	<50	0.69	<0.5	<0.5	<0.5	<2.5	NA	NM	
A-6	08/12/97	55.17	10.43	44.74	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NM	
A-6	11/14/97	55.17	9.76	45.41	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	<1.0	
A-6	03/18/98	55.17	7.00	48.17	<50	6.2	0.5	2.3	2.6	<3	NA	3.0	
A-6	05/19/98	55.17	8.27	46.90	<50	<0.5	<0.5	1.3	4.7	<3	NA	2.16	P
A-6	07/29/98	55.17	8.96	46.21	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	0.8	NP
A-6	10/09/98	55.17	10.23	44.94	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.0	NP
A-6	02/19/99	55.17	5.79	49.38	<50	<0.5	<0.5	<0.5	<0.5	5	NA	0.4	NP
A-6	06/02/99	55.17	9.71	45.46	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	2.00	NP
A-6	08/26/99	55.17	9.79	45.38	<50	<0.5	<0.5	<0.5	0.7	<3	NA	0.66	NP
A-6	10/26/99	55.17	9.70	45.47	<50	<0.5	<0.5	<0.5	<1	<3	NA	1.66	NP
A-6	02/25/00	55.17	5.68	49.49	<50	<0.5	<0.5	<0.5	<1	<3	NA	1.22	NP
A-7	03/26/96	54.71	6.90	47.81	Not Sampled: Well Sampled Semiannually								
A-7	05/22/96	54.71	8.27	46.44	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM	
A-7	08/22/96	54.71	9.80	44.91	Not Sampled: Well Sampled Semiannually								
A-7	12/19/96	54.71	7.19	47.52	Not Sampled: Well Sampled Annually								
A-7	04/01/97	54.71	9.63	45.08	Not Sampled: Well Sampled Annually								
A-7	05/27/97	54.71	9.34	45.37	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NM	

Table 1
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ARCO Service Station 4931
731 West MacArthur Boulevard, Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
A-7	08/12/97	54.71	10.10	44.61	Not Sampled: Well Sampled Annually								
A-7	11/14/97	54.71	9.35	45.36	Not Sampled: Well Sampled Annually								
A-7	03/18/98	54.71	6.75	47.96	Not Sampled: Well Sampled Annually								
A-7	05/19/98	54.71	8.85	45.86	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.82	P
A-7	07/29/98	54.71	8.84	45.87	Not Sampled: Well Sampled Annually								
A-7	10/09/98	54.71	10.05	44.66	Not Sampled: Well Sampled Annually								
A-7	02/19/99	54.71	5.57	49.14	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	4.7	NP
A-7	06/02/99	54.71	9.56	45.15	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	2.17	NP
A-7	08/26/99	54.71	9.66	45.05	Not Sampled: Well Sampled Annually							0.49	
A-7	10/26/99	54.71	9.54	45.17	Not Sampled: Well Sampled Annually							1.26	
A-7	02/25/00	54.71	5.60	49.11	Not Sampled: Well Sampled Annually								
A-8	03/26/96	53.77	7.10	46.67	48,000	2,600	<100	650	1,100	NA	NA	NM	
A-8	05/22/96	53.77	7.20	46.57	14,000	2,800	160	320	190	NA	NA	NM	
A-8	08/22/96	53.77	11.57	42.20	8,000	1,000	76	150	96	4,300	NA	NM	
A-8	12/19/96	53.77	8.04	45.73	12,000	450	110	210	230	<500	NA	NM	
A-8	04/01/97	53.77	9.98	43.79	Not Sampled: Well Sampled Semiannually								
A-8	05/27/97	53.77	11.45	42.32	11,000	1,600	100	220	210	2,300	NA	NM	
A-8	08/12/97	53.77	11.59	42.18	Not Sampled: Well Sampled Semiannually								
A-8	11/14/97	53.77	9.85	43.92	26,000	2,300	<200	400	400	4,100	NA	2.2	
A-8	03/18/98	53.77	7.80	45.97	Not Sampled: Well Sampled Semiannually								
A-8	05/19/98	53.77	8.78	44.99	88,000	4,200	150	640	600	6,700	NA	1.36	P
A-8	07/29/98	53.77	9.59	44.18	46,000	4,900	160	620	580	13,000	NA	0.5	NP
A-8	10/09/98	53.77	11.23	42.54	130,000	3,700	110	500	770	7,300	NA	1.0	NP
A-8	02/19/99	53.77	6.51	47.26	<1,000	39	<10	<10	<10	840	NA	0.2	NP
A-8	06/02/99	53.77	10.68	43.09	8,500	1,300	32	180	110	6,700	NA	1.31	NP
A-8	08/26/99	53.77	10.43	43.34	6,200	870	17	64	60	3,700	NA	0.69	NP
A-8	10/26/99	53.77	10.23	43.54	15,000	2,800	140	370	360	480	NA	0.62	NP
A-8	02/25/00	53.77	5.93	47.84	2,600	330	6.6	18	26	1,100	NA	1.43	NP
A-9	03/26/96	53.04	7.05	45.99	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM	
A-9	05/22/96	53.04	7.20	45.84	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM	

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Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
A-9	08/22/96	53.04	9.68	43.36	<50	<0.5	<0.5	<0.5	<0.5	8.5	NA	NM	
A-9	12/19/96	53.04	7.43	45.61	<50	<0.5	<0.5	<0.5	<0.5	2.6	NA	NM	
A-9	04/01/97	53.04	9.95	43.09	Not Sampled: Well Sampled Semiannually								
A-9	05/27/97	53.04	9.56	43.48	<50	2.3	<0.5	<0.5	<0.5	45	NA	NM	
A-9	08/12/97	53.04	10.15	42.89	Not Sampled: Well Sampled Semiannually								
A-9	11/14/97	53.04	8.64	44.40	<200	<2.0	<2.0	<2.0	<2.0	190	NA	9.6	
A-9	03/18/98	53.04	6.45	46.59	Not Sampled: Well Sampled Semiannually								
A-9	05/19/98	53.04	8.35	44.69	<50	<0.5	<0.5	<0.5	<0.5	7	NA	1.27	P
A-9	07/29/98	53.04	8.74	44.30	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	0.99	NP
A-9	10/09/98	53.04	10.05	42.99	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.0	NP
A-9	02/19/99	53.04	6.91	46.13	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	2.0	NP
A-9	06/02/99	53.04	9.72	43.32	<50	<0.5	<0.5	<0.5	<0.5	16	NA	2.32	NP
A-9	08/26/99	53.04	9.48	43.56	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	0.71	NP
A-9	10/26/99	53.04	9.17	43.87	1,500	6.2	0.7	78	11	91	NA	2.15	NP
A-9	02/25/00	53.04	5.84	47.20	<50	<0.5	<0.5	<0.5	<1	<3	NA	1.55	NP
A-10	03/26/96	54.26	8.28	45.98	Not Sampled: Well Removed from Sampling Program								
A-10	05/22/96	54.26	8.60	45.66	Not Sampled: Well Removed from Sampling Program								
A-10	08/22/96	54.26	10.98	43.28	Not Sampled: Well Removed from Sampling Program								
A-10	12/19/96	54.26	8.80	45.46	Not Sampled: Well Removed from Sampling Program								
A-10	04/01/97	54.26	11.15	43.11	Not Sampled: Well Removed from Sampling Program								
A-10	05/27/97	54.26	10.90	43.36	Not Sampled: Well Removed from Sampling Program								
A-10	08/12/97	54.26	11.30	42.96	Not Sampled: Well Removed from Sampling Program								
A-10	11/14/97	54.26	10.80	43.46	Not Sampled: Well Removed from Sampling Program								
A-10	03/18/98		---------- Well Removed from Survey Program ----------										
A-11	03/26/96	53.74	8.10	45.64	Not Sampled: Well Sampled Semiannually								
A-11	05/22/96	53.74	8.25	45.49	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM	
A-11	08/22/96	53.74	10.58	43.16	Not Sampled: Well Sampled Semiannually								
A-11	12/19/96	53.74	8.37	45.37	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NM	
A-11	04/01/97	53.74	10.95	42.79	Not Sampled: Well Sampled Semiannually								
A-11	05/27/97	53.74	10.60	43.14	<50	<0.5	<0.5	<0.5	<0.5	3.1	NA	NM	

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Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
A-11	08/12/97	53.74	11.07	42.67	Not Sampled: Well Sampled Semiannually								
A-11	11/14/97	53.74	10.58	43.16	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.6	
A-11	03/18/98	53.74	8.14	45.60	Not Sampled: Well Sampled Semiannually								
A-11	05/19/98	53.74	9.40	44.34	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.13	P
A-11	07/29/98	53.74	10.32	43.42	Not Sampled: Well Sampled Semiannually								
A-11	10/09/98	53.74	10.91	42.83	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	2.0	NP
A-11	02/19/99	53.74	6.77	46.97	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.8	NP
A-11	06/02/99	53.74	10.95	42.79	<50	<0.5	<0.5	<0.5	<0.5	6	NA	1.38	NP
A-11	08/26/99	53.74	11.05	42.69	Not Sampled: Well Sampled Semiannually							0.49	
A-11	10/26/99	53.74	10.81	42.93	<50	<0.5	<0.5	<0.5	<1	4	NA	1.27	NP
A-11	02/25/00	53.74	6.70	47.04	Not Sampled: Well Sampled Semiannually								
A-12	03/26/96	52.05	7.83	44.22	Not Sampled: Well Sampled Semiannually								
A-12	05/22/96	52.05	7.80	44.25	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM	
A-12	08/22/96	52.05	9.97	42.08	Not Sampled: Well Sampled Semiannually								
A-12	12/19/96	52.05	8.18	43.87	85	<0.5	<0.5	<0.5	<0.5	170	NA	NM	
A-12	04/01/97	52.05	10.30	41.75	Not Sampled: Well Sampled Semiannually								
A-12	05/27/97	52.05	10.05	42.00	50	12	<0.5	<0.5	<0.5	96	NA	NM	
A-12	08/12/97	52.05	10.46	41.59	Not Sampled: Well Sampled Semiannually								
A-12	11/14/97	52.05	9.70	42.35	<50	<0.5	<0.5	<0.5	<0.5	75	NA	7.0	
A-12	03/18/98	52.05	8.15	43.90	Not Sampled: Well Sampled Semiannually								
A-12	05/19/98	52.05	9.15	42.90	<50	<0.5	<0.5	<0.5	<0.5	29	NA	1.47	P
A-12	07/29/98	52.05	9.38	42.67	Not Sampled: Well Sampled Semiannually								
A-12	10/09/98	52.05	10.21	41.84	<50	<0.5	<0.5	<0.5	<0.5	7	NA	2.0	NP
A-12	02/19/99	52.05	6.96	45.09	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	5.2	NP
A-12	06/02/99	52.05	10.25	41.80	<50	<0.5	<0.5	<0.5	<0.5	7	NA	1.38	NP
A-12	08/26/99	52.05	9.91	42.14	Not Sampled: Well Sampled Semiannually							0.51	
A-12	10/26/99	52.05	9.73	42.32	<50	<0.5	<0.5	<0.5	<1	12	NA	1.09	NP
A-12	02/25/00	52.05	6.97	45.08	Not Sampled: Well Sampled Semiannually								
A-13	03/26/96	55.11			Well Inaccessible								
A-13	05/22/96	55.11			Well Inaccessible								

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Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
A-13	08/22/96	55.11			Well Inaccessible								
A-13	12/19/96	55.11			Well Inaccessible								
A-13	04/01/97	55.11			Well Inaccessible								
A-13	05/27/97	55.11			Well Inaccessible								
A-13	08/12/97	55.11			Well Inaccessible								
A-13	11/14/97	55.11			Well Inaccessible								
A-13	03/18/98	55.11			Well Inaccessible								
A-13	05/19/98	55.11			Well Inaccessible								
A-13	07/29/98	55.11			Well Inaccessible								
A-13	10/09/98	55.11			Well Inaccessible								
A-13	02/19/99	55.11			Well Inaccessible								
A-13	06/02/99	55.11			Well Inaccessible								
A-13	08/26/99	55.11			Well Inaccessible								
A-13	10/26/99	55.11			Well Inaccessible								
A-13	02/25/00	55.11			Well Inaccessible								
AR-1	03/26/96	54.72	8.13	46.59	6,200	110	64	38	520	NA	NA	NM	
AR-1	05/22/96	54.72	8.57	46.15	NS	NS	NS	NS	NS	NS	NS	NM	
AR-1	08/22/96	54.72	10.97	43.75	5,600	100	28	29	310	960	NA	NM	
AR-1	12/19/96	54.72	8.93	45.79	Not Sampled: Well Removed from Sampling Program								
AR-1	04/01/97	54.72	11.78	42.94	Not Sampled: Well Removed from Sampling Program								
AR-1	05/27/97	54.72	10.76	43.96	Not Sampled: Well Removed from Sampling Program								
AR-1	08/12/97	54.72	11.40	43.32	Not Sampled: Well Removed from Sampling Program								
AR-1	11/14/97	54.72	10.80	43.92	Not Sampled: Well Removed from Sampling Program								
AR-1	03/18/98	54.72	NM	NM	Not Sampled: Well Removed from Sampling Program								
AR-1	05/19/98	54.72	NM	NM	Not Sampled: Well Removed from Sampling Program								
AR-1	07/29/98	54.72	10.17	44.55	Not Sampled: Well Removed from Sampling Program								
AR-1	10/09/98	54.72	11.25	43.47	Not Sampled: Well Removed from Sampling Program								
AR-1	02/19/99	54.72	7.02	47.70	Not Sampled: Well Removed from Sampling Program								
AR-1	06/02/99	54.72	11.00	43.72	Not Sampled: Well Removed from Sampling Program								
AR-1	08/26/99	54.72	10.96	43.76	Not Sampled: Well Removed from Sampling Program							0.39	
AR-1	10/26/99	54.72	10.68	44.04	Not Sampled: Well Removed from Sampling Program							1.39	

Table 1
Groundwater Elevation and Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, and MTBE)

ARCO Service Station 4931
731 West MacArthur Boulevard, Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
AR-1	02/25/00	54.72	7.15	47.57	Not Sampled: Well Removed from Sampling Program								
AR-2	03/26/96	54.77	4.93	49.84	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM	
AR-2	05/22/96	54.77	5.65	49.12	NS	NS	NS	NS	NS	NS	NS	NM	
AR-2	08/22/96	54.77	7.27	47.50	<50	<0.5	<0.5	<0.5	<0.5	200	NA	NM	
AR-2	12/19/96	54.77	7.78	46.99	Not Sampled: Well Removed from Sampling Program								
AR-2	04/01/97	54.77	6.80	47.97	Not Sampled: Well Removed from Sampling Program								
AR-2	05/27/97	54.77	6.32	48.45	Not Sampled: Well Removed from Sampling Program								
AR-2	08/12/97	54.77	7.43	47.34	Not Sampled: Well Removed from Sampling Program								
AR-2	11/14/97	54.77	8.95	45.82	Not Sampled: Well Removed from Sampling Program								
AR-2	03/18/98	54.77	NM	NM	Not Sampled: Well Removed from Sampling Program								
AR-2	05/19/98	54.77	NM	NM	Not Sampled: Well Removed from Sampling Program								
AR-2	07/29/98	54.77	4.47	50.30	Not Sampled: Well Removed from Sampling Program								
AR-2	10/09/98	54.77	6.90	47.87	Not Sampled: Well Removed from Sampling Program								
AR-2	02/19/99	54.77	3.80	50.97	Not Sampled: Well Removed from Sampling Program								
AR-2	06/02/99	54.77	4.61	50.16	Not Sampled: Well Removed from Sampling Program								
AR-2	08/26/99	54.77	5.22	49.55	Not Sampled: Well Removed from Sampling Program							0.44	
AR-2	10/26/99	54.77	3.20	51.57	Not Sampled: Well Removed from Sampling Program							1.79	
AR-2	02/25/00	54.77	2.33	52.44	Not Sampled: Well Removed from Sampling Program								
AR-3	03/26/96	54.19	7.95	46.24	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM	
AR-3	05/22/96	54.19	8.30	45.89	NS	NS	NS	NS	NS	NS	NS	NM	
AR-3	08/22/96	54.19	10.84	43.35	Not Sampled: Well Removed from Sampling Program								
AR-3	12/19/96	54.19	8.56	45.63	Not Sampled: Well Removed from Sampling Program								
AR-3	04/01/97	54.19	11.24	42.95	Not Sampled: Well Removed from Sampling Program								
AR-3	05/27/97	54.19	10.67	43.52	Not Sampled: Well Removed from Sampling Program								
AR-3	08/12/97	54.19	11.10	43.09	Not Sampled: Well Removed from Sampling Program								
AR-3	11/14/97	54.19	10.60	43.59	Not Sampled: Well Removed from Sampling Program								
AR-3	03/18/98	54.19	NM	NM	Not Sampled: Well Removed from Sampling Program								
AR-3	05/19/98	54.19	NM	NM	Not Sampled: Well Removed from Sampling Program								
AR-3	07/29/98	54.19	9.95	44.24	Not Sampled: Well Removed from Sampling Program								
AR-3	10/09/98	54.19	11.20	42.99	Not Sampled: Well Removed from Sampling Program								

Table 1
Groundwater Elevation and Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, and MTBE)

ARCO Service Station 4931
731 West MacArthur Boulevard, Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
AR-3	02/19/99	54.19	6.98	47.21	Not Sampled: Well Removed from Sampling Program								
AR-3	06/02/99	54.19	10.80	43.39	Not Sampled: Well Removed from Sampling Program								
AR-3	08/26/99	54.19	10.69	43.50	Not Sampled: Well Removed from Sampling Program							0.40	
AR-3	10/26/99	54.19	NM	NM	Not Sampled: Well Removed from Sampling Program								
AR-3	02/25/00	54.19	7.21	46.98	Not Sampled: Well Removed from Sampling Program								

TPH = Total petroleum hydrocarbons by modified EPA method 8015
BTEX = Benzene, toluene, ethylbenzene, total xylenes by EPA method 8021B. (EPA method 8020 prior to 10/26/99).
MTBE = Methyl tert-butyl ether
* = EPA method 8020 prior to 10/26/99
MSL = Mean sea level
TOB = Top of box
ppb = Parts per billion
ppm = Parts per million
< = Less than laboratory detection limit stated to the right
NA = Not analyzed
NM = Not measured
NS = Not sampled

Table 2
Groundwater Flow Direction and Gradient

ARCO Service Station 4931
731 West MacArthur Boulevard, Oakland, California

Date Measured	Average Flow Direction	Average Hydraulic Gradient
03/26/96	Southwest	0.03
05/22/96	Southwest	0.04
08/22/96	Southwest	0.02
12/19/96	Southwest	0.03
04/01/97	Southwest	0.03
05/27/97	Southwest	0.04
08/12/97	Southwest	0.02
11/14/97	Southwest	0.02
03/18/98	West	0.03
05/19/98	West-Southwest	0.02
07/29/98	West-Southwest	0.02
10/09/98	Southwest	0.007
02/19/99	Southwest	0.04
06/02/99	West	0.04
08/26/99	West-Southwest	0.02
10/26/99	West-Northwest	0.13
02/25/00	**West-Southwest**	**0.05**

APPPENDIX C

Certified Analytical Reports
And
Chain-of-Custody Documentation

Sequoia Analytical

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22 June, 2001

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

RE: ARCO 4931, Oakland, CA
Sequoia Report: S106186

Enclosed are the results of analyses for samples received by the laboratory on 06/12/01 12:17. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ron Chew
Client Services Representative

Lito Diaz
Laboratory Director

CA ELAP Certificate #1624

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Delta Environmental Consultants(Rancho Cordova	Project: ARCO 4931, Oakland, CA	
3164 Gold Camp Drive Ste. 200	Project Number: N/A	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	06/22/01 15:26

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
A-2-9	S106186-01	Water	06/12/01 08:40	06/12/01 12:17
A-3-9	S106186-02	Water	06/12/01 08:50	06/12/01 12:17
A-4-9	S106186-03	Water	06/12/01 09:10	06/12/01 12:17
A-5-9	S106186-04	Water	06/12/01 08:17	06/12/01 12:17
A-6-8	S106186-05	Water	06/12/01 08:32	06/12/01 12:17
A-7-8	S106186-06	Water	06/12/01 08:25	06/12/01 12:17
A-8-9	S106186-07	Water	06/12/01 08:09	06/12/01 12:17
A-9-8	S106186-08	Water	06/12/01 09:36	06/12/01 12:17
A-11-10	S106186-09	Water	06/12/01 08:00	06/12/01 12:17
A-12-9	S106186-10	Water	06/12/01 07:52	06/12/01 12:17

Sequoia Analytical - Sacramento

Ron Chew, Client Services Representative

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Delta Environmental Consultants(Rancho Cordova	Project: ARCO 4931, Oakland, CA	
3164 Gold Camp Drive Ste. 200	Project Number: N/A	**Reported:**
Rancho Cordova CA, 95670	Project Manager. Steven Meeks	06/22/01 15:26

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
A-2-9 (S106186-01) Water Sampled: 06/12/01 08:40 Received: 06/12/01 12:17									
Purgeable Hydrocarbons	ND	50	ug/l	1	1060143	06/18/01	06/18/01	DHS LUFT	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	2.5	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*104 %*	*60-140*		"	"	"	"	
A-3-9 (S106186-02) Water Sampled: 06/12/01 08:50 Received: 06/12/01 12:17									
Purgeable Hydrocarbons	ND	50	ug/l	1	1060143	06/18/01	06/18/01	DHS LUFT	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	**86**	2.5	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*107 %*	*60-140*		"	"	"	"	
A-4-9 (S106186-03) Water Sampled: 06/12/01 09:10 Received: 06/12/01 12:17									
Purgeable Hydrocarbons	**2000**	2000	ug/l	40	1060143	06/18/01	06/18/01	DHS LUFT	zP-02
Benzene	**230**	20	"	"	"	"	"	"	
Toluene	ND	20	"	"	"	"	"	"	
Ethylbenzene	**21**	20	"	"	"	"	"	"	
Xylenes (total)	ND	20	"	"	"	"	"	"	
Methyl tert-butyl ether	**4700**	100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*97.3 %*	*60-140*		"	"	"	"	

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Delta Environmental Consultants(Rancho Cordova	Project: ARCO 4931, Oakland, CA	
3164 Gold Camp Drive Ste. 200	Project Number: N/A	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	06/22/01 15:26

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
A-5-9 (S106186-04) Water Sampled: 06/12/01 08:17 Received: 06/12/01 12:17									
Purgeable Hydrocarbons	**830**	500	ug/l	10	1060143	06/18/01	06/18/01	DHS LUFT	
Benzene	ND	5.0	"	"	"	"	"	"	zR-05
Toluene	ND	5.0	"	"	"	"	"	"	zR-05
Ethylbenzene	ND	5.0	"	"	"	"	"	"	zR-05
Xylenes (total)	ND	5.0	"	"	"	"	"	"	zR-05
Surrogate: a,a,a-Trifluorotoluene		*92.1 %*		*60-140*		"	"	"	
A-5-9 (S106186-04RE1) Water Sampled: 06/12/01 08:17 Received: 06/12/01 12:17									
Methyl tert-butyl ether	**3200**	250	ug/l	100	1060143	06/18/01	06/18/01	DHS LUFT	
Surrogate: a,a,a-Trifluorotoluene		*106 %*		*60-140*		"	"	"	
A-6-8 (S106186-05) Water Sampled: 06/12/01 08:32 Received: 06/12/01 12:17									
Purgeable Hydrocarbons	ND	50	ug/l	1	1060143	06/18/01	06/18/01	DHS LUFT	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	**7.0**	2.5	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*98.0 %*		*60-140*		"	"	"	
A-7-8 (S106186-06) Water Sampled: 06/12/01 08:25 Received: 06/12/01 12:17									
Purgeable Hydrocarbons	ND	50	ug/l	1	1060142	06/18/01	06/18/01	DHS LUFT	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	2.5	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*97.0 %*		*60-140*		"	"	"	

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3164 Gold Camp Drive Ste. 200	Project Number: N/A	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	06/22/01 15:26

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
A-8-9 (S106186-07) Water Sampled: 06/12/01 08:09 Received: 06/12/01 12:17									
Purgeable Hydrocarbons	**5600**	5000	ug/l	100	1060142	06/18/01	06/18/01	DHS LUFT	zP-02
Benzene	**1700**	50	"	"	"	"	"	"	
Toluene	ND	50	"	"	"	"	"	"	
Ethylbenzene	**61**	50	"	"	"	"	"	"	
Xylenes (total)	**54**	50	"	"	"	"	"	"	
Methyl tert-butyl ether	**2900**	250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*110 %*		*60-140*		"	"	"	
A-9-8 (S106186-08) Water Sampled: 06/12/01 09:36 Received: 06/12/01 12:17									
Purgeable Hydrocarbons	ND	50	ug/l	1	1060142	06/18/01	06/18/01	DHS LUFT	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	**4.8**	2.5	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*93.1 %*		*60-140*		"	"	"	
A-11-10 (S106186-09) Water Sampled: 06/12/01 08:00 Received: 06/12/01 12:17									
Purgeable Hydrocarbons	ND	50	ug/l	1	1060153	06/19/01	06/19/01	DHS LUFT	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	2.5	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*102 %*		*60-140*		"	"	"	

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Delta Environmental Consultants(Rancho Cordova	Project: ARCO 4931, Oakland, CA	
3164 Gold Camp Drive Ste. 200	Project Number: N/A	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	06/22/01 15:26

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
A-12-9 (S106186-10) Water Sampled: 06/12/01 07:52 Received: 06/12/01 12:17									
Purgeable Hydrocarbons	ND	50	ug/l	1	1060153	06/19/01	06/19/01	DHS LUFT	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	**25**	2.5	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*95.9 %*		*60-140*		"	"	"	

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3164 Gold Camp Drive Ste. 200	Project Number: N/A	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	06/22/01 15:26

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1060142 - EPA 5030B (P/T)										
Blank (1060142-BLK1)				Prepared & Analyzed: 06/18/01						
Purgeable Hydrocarbons	ND	50	ug/l							
Benzene	ND	0.50	"							
Toluene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Methyl tert-butyl ether	ND	2.5	"							
Surrogate: a,a,a-Trifluorotoluene	*10.4*		"	*10.0*		*104*	*60-140*			
LCS (1060142-BS1)				Prepared & Analyzed: 06/18/01						
Benzene	9.13	0.50	ug/l	10.0		91.3	70-130			
Toluene	9.74	0.50	"	10.0		97.4	70-130			
Ethylbenzene	10.4	0.50	"	10.0		104	70-130			
Xylenes (total)	31.4	0.50	"	30.0		105	70-130			
Methyl tert-butyl ether	8.32	2.5	"	10.0		83.2	70-130			
Surrogate: a,a,a-Trifluorotoluene	*10.9*		"	*10.0*		*109*	*60-140*			
Matrix Spike (1060142-MS1)		**Source: S106025-02**		Prepared & Analyzed: 06/18/01						
Benzene	8.63	0.50	ug/l	10.0	ND	86.3	60-140			
Toluene	9.26	0.50	"	10.0	ND	92.6	60-140			
Ethylbenzene	9.96	0.50	"	10.0	ND	99.6	60-140			
Xylenes (total)	29.8	0.50	"	30.0	ND	99.3	60-140			
Methyl tert-butyl ether	8.86	2.5	"	10.0	ND	88.6	60-140			
Surrogate: a,a,a-Trifluorotoluene	*10.9*		"	*10.0*		*109*	*60-140*			
Matrix Spike Dup (1060142-MSD1)		**Source: S106025-02**		Prepared & Analyzed: 06/18/01						
Benzene	8.54	0.50	ug/l	10.0	ND	85.4	60-140	1.05	25	
Toluene	9.06	0.50	"	10.0	ND	90.6	60-140	2.18	25	
Ethylbenzene	9.64	0.50	"	10.0	ND	96.4	60-140	3.27	25	
Xylenes (total)	28.2	0.50	"	30.0	ND	94.0	60-140	5.52	25	
Methyl tert-butyl ether	9.67	2.5	"	10.0	ND	96.7	60-140	8.74	25	
Surrogate: a,a,a-Trifluorotoluene	*10.6*		"	*10.0*		*106*	*60-140*			

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Delta Environmental Consultants(Rancho Cordova	Project: ARCO 4931, Oakland, CA	
3164 Gold Camp Drive Ste. 200	Project Number: N/A	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	06/22/01 15:26

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1060143 - EPA 5030B (P/T)										
Blank (1060143-BLK1)				Prepared & Analyzed: 06/18/01						
Purgeable Hydrocarbons	ND	50	ug/l							
Benzene	ND	0.50	"							
Toluene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Methyl tert-butyl ether	ND	2.5	"							
Surrogate: a,a,a-Trifluorotoluene	*10.0*		"	*10.0*		*100*	*60-140*			
LCS (1060143-BS1)				Prepared & Analyzed: 06/18/01						
Benzene	8 71	0.50	ug/l	10.0		87.1	70-130			
Toluene	9.78	0.50	"	10.0		97.8	70-130			
Ethylbenzene	9.38	0.50	"	10.0		93.8	70-130			
Xylenes (total)	30.1	0.50	"	30.0		100	70-130			
Methyl tert-butyl ether	9.96	2.5	"	10.0		99.6	70-130			
Surrogate: a,a,a-Trifluorotoluene	*11.1*		"	*10.0*		*111*	*60-140*			
Matrix Spike (1060143-MS1)		**Source: S106186-01**		Prepared & Analyzed: 06/18/01						
Benzene	8.64	0.50	ug/l	10.0	ND	86.4	60-140			
Toluene	9.57	0.50	"	10.0	ND	95.7	60-140			
Ethylbenzene	9.16	0.50	"	10.0	ND	91.6	60-140			
Xylenes (total)	29.2	0.50	"	30.0	ND	97.3	60-140			
Methyl tert-butyl ether	13.8	2.5	"	10.0	ND	138	60-140			
Surrogate: a,a,a-Trifluorotoluene	*10.3*		"	*10.0*		*103*	*60-140*			
Matrix Spike Dup (1060143-MSD1)		**Source: S106186-01**		Prepared & Analyzed: 06/18/01						
Benzene	8.34	0.50	ug/l	10.0	ND	83.4	60-140	3.53	25	
Toluene	9.45	0.50	"	10.0	ND	94.5	60-140	1.26	25	
Ethylbenzene	9.11	0.50	"	10.0	ND	91.1	60-140	0.547	25	
Xylenes (total)	29.1	0.50	"	30.0	ND	97.0	60-140	0.343	25	
Methyl tert-butyl ether	12.3	2.5	"	10.0	ND	123	60-140	11.5	25	
Surrogate: a,a,a-Trifluorotoluene	*10.4*		"	*10.0*		*104*	*60-140*			

Sequoia Analytical

819 Striker Avenue, Suite 8
Sacramento, CA 95834
(916) 921-9600
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www.sequoialabs.com

Delta Environmental Consultants(Rancho Cordova	Project: ARCO 4931, Oakland, CA	
3164 Gold Camp Drive Ste. 200	Project Number: N/A	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	06/22/01 15:26

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1060153 - EPA 5030B (P/T)										
Blank (1060153-BLK1)				Prepared & Analyzed: 06/19/01						
Purgeable Hydrocarbons	ND	50	ug/l							
Benzene	ND	0.50	"							
Toluene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Methyl tert-butyl ether	ND	2.5	"							
Surrogate: a,a,a-Trifluorotoluene	*10.7*		"	*10.0*		*107*	*60-140*			
LCS (1060153-BS1)				Prepared & Analyzed: 06/19/01						
Benzene	8.94	0.50	ug/l	10.0		89.4	70-130			
Toluene	9.63	0.50	"	10.0		96.3	70-130			
Ethylbenzene	10.3	0.50	"	10.0		103	70-130			
Xylenes (total)	31.1	0.50	"	30.0		104	70-130			
Methyl tert-butyl ether	7.87	2.5	"	10.0		78.7	70-130			
Surrogate: a,a,a-Trifluorotoluene	*10.5*		"	*10.0*		*105*	*60-140*			
Matrix Spike (1060153-MS1)		**Source: S106201-01**		Prepared & Analyzed: 06/19/01						
Benzene	8.62	0.50	ug/l	10.0	ND	86.2	60-140			
Toluene	9.17	0.50	"	10.0	ND	91.7	60-140			
Ethylbenzene	9.90	0.50	"	10.0	ND	99.0	60-140			
Xylenes (total)	29.3	0.50	"	30.0	ND	97.7	60-140			
Methyl tert-butyl ether	7.89	2.5	"	10.0	ND	78.9	60-140			
Surrogate: a,a,a-Trifluorotoluene	*10.1*		"	*10.0*		*101*	*60-140*			
Matrix Spike Dup (1060153-MSD1)		**Source: S106201-01**		Prepared & Analyzed: 06/19/01						
Benzene	8.25	0.50	ug/l	10.0	ND	82.5	60-140	4.39	25	
Toluene	8.81	0.50	"	10.0	ND	88.1	60-140	4.00	25	
Ethylbenzene	9.39	0.50	"	10.0	ND	93.9	60-140	5.29	25	
Xylenes (total)	27.4	0.50	"	30.0	ND	91.3	60-140	6.70	25	
Methyl tert-butyl ether	8.83	2.5	"	10.0	ND	88.3	60-140	11.2	25	
Surrogate: a,a,a-Trifluorotoluene	*10.3*		"	*10.0*		*103*	*60-140*			

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Delta Environmental Consultants(Rancho Cordova	Project: ARCO 4931, Oakland, CA	
3164 Gold Camp Drive Ste. 200	Project Number: N/A	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	06/22/01 15:26

Notes and Definitions

zP-02	Chromatogram Pattern: Weathered Gasoline C6-C12
zR-05	The reporting limit(s) for this sample have been raised due to high levels of non-target interferents.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

ARCO Products Company
Division of Atlantic-Richfield Company

Task Order No. QM 2714500

Chain of Custody

ARCO Facility no. 4931	City (Facility) Oakland	Project manager (Consultant) Steve Meeks	Laboratory name Severn
ARCO engineer Supple	Telephone no. (ARCO)	Telephone no. (Consultant) 916·536·2613	Fax no. (Consultant) 916·6
Consultant name Delta	Address (Consultant) 3164 Gold Camp DR Rancho Cordova		Contract number

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX 602/EPA 8020 MTBE	BTEX/TPH EPA M602/8020/8015	TPH Modified 8015 Gas? Diesel?	Oil and Grease 413.1 413.2	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals VOA VOA	CAM METALS EPA 6010/7000 TTLC STLC	Lead Org./DHS Lead EPA 7420/7421
A-2-9'		6		X		X	X	6-12-01	0840	X		X				510618	6-01			
A-3-9'		6							0850	X		X							-02	
A-4-9'		6							0910	X		X							-03	
A-5-9'		6							0817	X		X							-04	
A-6-8'		6							0832	X		X							-05	
A-7-8'		6							0825	X		X							-06	
A-8-9'		6							0809	X		X							-07	
A-9-8'		6							0936	X		X							-08	
A-11-10'		6							0900	X		X							-09	
A-12-9'		6						6-12-01	0752	X		X							-10	

Condition of sample:

Temperature received: 18C

Relinquished by sampler	Date 6/12/01	Time 1217	Received by Monica Gregoren 6/12/01 1217
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by / Date / Time

Special detection Limit/reporting

Special QA/QC

Remarks
TPHG 8015m
BTEX 8020
MTBE 8020

Lab number

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

Method of shipment

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

APPENDIX D

Remedial System Performance Summary

ARCO STATION NO. 4931
731 West MacArthur Boulevard
Oakland, California

REMEDIAL SYSTEM PERFORMANCE SUMMARY

GWE System

Groundwater extraction (GWE) was conducted intermittently between November 10, 1992 and July 5, 1995. The TWE system was comprised of electric GWE pumps in monitoring wells A-9, AR-1, AR-2, AR-3 and in three 1,500-pound granular activated carbon vessels arranged in series. The GWE system was permitted by East Bay Municipal Utility District Permit Account Number 502-62131. Based on Alameda County Health Care Services Agency authorization that GWE at the site was no longer required, the permit was relinquished during the second quarter 1996. Overall, 4.6 million gallons of groundwater were extracted and less than 0.06 gallon of benzene removed. Refer to the IT Corporation *Second Quarter 1997 Groundwater Monitoring Report* for historical GWE system performance and analytical data.

Intrinsic Bioremediation Evaluation

At the request of ARCO, intrinsic bioremediation indicator parameters (bioparameters) were monitored during the fourth quarter 1996 groundwater monitoring event. Groundwater samples from monitoring wells A-4, A-8 and A-12 were analyzed for biological oxygen demand (BOD), carbon dioxide (CO_2), chemical oxygen demand (DOD), methane, nitrate, sulfate, dissolved oxygen (DO) and ferrous iron. Monitoring wells A-4 and A-8 are located within the plume. Monitoring well A-12 is located outside the plume. Based on analysis of the collected data, intrinsic bioremediation was occurring at the site. Refer to the IT Corporation *First Quarter 1997 Groundwater Monitoring Report* for details.

Oxygen release compound (ORC) is currently being used in monitoring wells A-4, A-9 and AR-1 to enhance biodegradation of dissolved oxygen. ORC was scheduled for replacement during the second quarter 2001.

APPENDIX E

Field Sample Data

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

Arco Site Address: 731 West MacArthur Blvd
Oakland, California
Arco Site Number: Arco 4931
Delta Project No.: D000-313
Arco Project Manager: Paul Supple
Delta Project PM: Steve Meeks
Site Contact & Phone Number:
Site Sampled By: Stratus (CH)
Date Sampled: 06/12/01

Water Level 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
A-2	8:35	9.27	5.0	19.0	☑	9.73	4 inch	2.0	19.5	NP	☑	☑	☑	☐	2.80	Q/2,5,8,11	A-2	8:40
A-3	8:45	9.76	5.0	19.3	☑	9.54	4 inch	2.0	19.1	NP	☐	☐	☐	☐	1.00	S/5,11	A-3	8:50
A-4	8:57	9.83	5.0	19.6	☐	9.77	4 inch	2.0	19.5	10	☑	☑	☑	☐	1.20	Q/2,5,8,11	A-4	9:10
A-5	8:12	9.81	3.0	24.0	☑	14.19	3 inch	1.1	15.6	NP	☐	☐	☐	☐	1.00	S/5,11	A-5	8:17
A-6	8:27	8.93	2.0	25.0	☑	16.07	3 inch	1.1	17.7	NP	☑	☑	☑	☐	1.00	Q/2,5,8,11	A-6	8:32
A-7	8:20	8.80	3.0	22.6	☑	13.80	3 inch	1.1	15.2	NP	☐	☐	☐	☐	1.30	A/5	A-7	8:25
A-8	8:08	9.53	2.0	20.0	☑	10.47	3 inch	1.1	11.5	NP	☑	☑	☑	☐	0.80	Q/2,5,8,11	A-8	8:09
A-9	8:55	8.67	5.0	38.0	☐	29.33	6 inch	4.4	129.1	129	☑	☑	☑	☐	2.70	Q/2,5,8,11	A-9	9:36
A-11	7:55	10.21	5.0	28.0	☑	17.79	3 inch	1.1	19.6	NP	☐	☐	☐	☐	1.30	S/5,11	A-11	8:00
A-12	7:47	9.26	5.0	30.0	☑	20.74	3 inch	1.1	22.8	NP	☐	☐	☐	☐	1.30	S/5,11	A-12	7:52
A-13	NM	NM	10.0	29.5	☐	N/A	3 inch	1.1	N/A	N/A	☐	☐	☐	☐	NM	A/5		
AR-1	8:59	10.17	10.0	31.5	☐	21.33	6 inch	4.4	93.9	N/A	☐	☐	☐	☐	NM	NS		
AR-2	8:43	4.51	10.0	27.5	☐	22.99	6 inch	4.4	101.2	N/A	☐	☐	☐	☐	NM	NS		
AR-3	NM	NM	10.0	27.0	☐	N/A	6 inch	4.4	N/A	N/A	☐	☐	☐	☐	NM	NS		
					☐						☐	☐	☐	☐				
					☐						☐	☐	☐	☐				
					☐						☐	☐	☐	☐				
					☐						☐	☐	☐	☐				
					☐						☐	☐	☐	☐				
					☐						☐	☐	☐	☐				
					☐						☐	☐	☐	☐				

(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:** A-7, A-13; **Semi-Annual:** A-3, A-5, A-11, A-12; **Quarterly:** A-6, A-8, A-9, A-2, A-4,

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.

Delta Environmental Consultants, Inc.
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Rancho Cordova, California 95670
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Fax: (916) 638-8385

Arco Site Address: 731 West MacArthur Blvd
Oakland, California
Arco Project Manager: Paul Supple
Site Sampled By: Stratus (CH)
Site Contact & Phone Number:

Arco Site Number: Arco 4931
Delta Project No.: D000-313
Delta Project PM: Steve Meeks
Date Sampled: 03/20/01

Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons
A-2	NP	18.9	6.2	791	NP
	NO ODOR				
A-3	NP	20.2	6.20	538	NP
	NO ODOR				
A-4		19.9	6.3	1,532	0
	DRY	18.8	6.6	1,619	10
	ODOR				
A-5	NP	19.3	6.40	828	NP
	ODOR				
A-6	NP	19.6	6.4	492	NP
	NO ODOR				
A-7	NP	19.6	6.50	540	NP
	NO ODOR				
A-8	NP	19.3	6.4	856	NP
	ODOR				
A-9		18.9	6.8	666	0
		19.4	6.7	548	129
	ODOR				
A-11	NP	18.8	6.70	642	
	NO ODOR				
A-12	NP	18.0	7.40	682	NP
	NO ODOR				
A-13					
AR-1					
AR-2					
AR-3					

Notes: NP = NO PURGE

Original Copies of Field Sampling Sheets are Located in Project File