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June 18, 2002

Mr. Paul Supple
Atlantic Richfield Company
P.O. Box 6549
Moraga, CA 94570

JUN 24 2002

Subject: *Quarterly Groundwater Monitoring Report, First Quarter 2002*
ARCO Service Station No. 4494
566 Hegenberger Road
Oakland, California
Project No. D000-319

Dear Mr. Supple:

Delta Environmental Consultants, Inc. is submitting the attached report that presents the results of the first quarter 2002 groundwater monitoring program as ARCO Service Station No. 4494, located at 566 Hegenberger Road, 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.

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



6/18/02

TLA (LRP007.319.doc)
Enclosures

cc: Mr. Barney Chan – Alameda County Health Care Services

Date: June 18, 2002

ARCO QUARTERLY GROUNDWATER MONITORING REPORT

Station No.: 4494 Address: 566 Hegenberger Road, Oakland, CA
Atlantic Richfield Company Environmental Paul Supple 925-299-8891
Engineer/Phone No.: _____
Consulting Co./Contact Person Delta Environmental Consultants, Inc.
Steven W. Meeks, P.E.
Consultant Project No.: D000-319
Primary Agency/Regulatory ID No. Alameda County Health Care Services/STID #3854

WORK PERFORMED THIS QUARTER

1. Performed quarterly groundwater monitoring for first quarter 2002.
2. Prepared and submitted quarterly groundwater monitoring report for the fourth quarter 2001.

WORK PROPOSED FOR NEXT QUARTER

1. Prepare and submit quarterly groundwater monitoring report for first quarter 2002.
2. Perform quarterly groundwater monitoring and sampling for second quarter 2002.
3. Site will be transferred to new consultant (URS) during second quarter 2002.

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QUARTERLY MONITORING:

Current Phase of Project	Monitoring
Frequency of Groundwater Sampling:	Quarterly (MW-1, MW-3 to MW-7, RW-1)
Frequency of Groundwater Monitoring:	Quarterly
Is Free Product (FP) Present On-Site:	No
FP Recovered this Quarter:	None
Cumulative FP Recovered to Date:	0.92 feet (volume not available)
Bulk Soil Removed This Quarter:	350 cubic yards
Bulk Soil Removed to Date:	1,550 cubic yards
Current Remediation Techniques:	None
Approximate Depth to Groundwater:	7.46 ft
Groundwater Gradient:	0.017 ft/ft North Northwest

DISCUSSION:

- Groundwater sample analytical results indicate that MW-1, MW-3 and MW-7 contain MTBE at concentrations of 6,200, 4.0 and 18 micrograms per liter ($\mu\text{g/L}$), respectively.
- Total petroleum hydrocarbons as gasoline were detected in a sample collected from RW-1 at a concentration of 240 $\mu\text{g/L}$.
- Benzene was detected in a sample collected from RW-1 at a concentration of 3.7 $\mu\text{g/L}$.

ATTACHMENTS:

- Table 1 Groundwater Elevation and Analytical Data
- Table 2 Ground 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 (Pacific Environmental Group, Inc.)
- Appendix C Certified Analytical Reports with Chain-of-Custody Documentation
- Appendix D Field Sample Sheets

TABLE 1

GROUNDWATER ANALYTICAL DATA

ARCO Service Station 4494
566 Hegenberger Road at Edes 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)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	TPH as Gasoline (µg/L)	MTBE (µg/L)
MW-1	06/20/00	106.10	7.02	99.08	<10	<10	<10	<20	<1,000	14,000/15,000 ^a
	09/28/00		7.07	99.03	<5.0	<5.0	<5.0	<5.0	<500	13000/18,800 ^a
	12/17/00		6.95	99.15	<0.5	<0.5	<0.5	<0.5	<50	10,600
	03/28/01		6.88	99.22	<5.0	<5.0	<5.0	<5.0	<500	16,900
	06/21/01		7.18	98.92	<10	<10	<10	<10	<1,000	3,400
	09/23/01		7.11	98.99	<10	<10	<10	<10	<1,000	2200/1800 ^a
	12/31/01		6.91	99.19	<50	<50	<50	<50	<5,000	14,000
	03/14/02		6.85	99.25	<50	<50	<50	<50	<5,000	6,200
MW-3	06/20/00	106.29	9.18	97.11	<0.5	<0.5	<0.5	<1.0	<50	27/27 ^a
	09/28/00		9.33	96.96	<0.5	<0.5	<0.5	<1.0	<50	4.3/<2.0 ^a
	12/17/00		9.31	96.98	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	03/28/01		9.23	97.06	<0.5	<0.5	<0.5	<0.5	<50	7.42
	06/21/01		9.58	96.71	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	09/23/01		9.76	96.53	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	12/31/01		8.78	97.51	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	03/14/02		9.25	97.04	< 0.5	< 0.5	< 0.5	< 0.5	<50	4
MW-4	06/20/00	107.40	8.49	98.91	<0.5	<0.5	<0.5	<1.0	<50	<10
	09/28/00		8.70	98.70	<0.5	<0.5	<0.5	<1.0	<50	<2.5
	12/17/00		8.53	98.87	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	03/28/01		8.59	98.81	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	06/21/01		8.79	98.61	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	09/23/01		8.67	98.73	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	12/31/01		8.03	99.37	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	03/14/02		8.48	98.92	< 0.5	< 0.5	< 0.5	< 0.5	<50	<2.5

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TABLE 1

GROUNDWATER ANALYTICAL DATA

ARCO Service Station 4494
566 Hegenberger Road at Edes 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-5	06/20/00	105.19	7.65	97.54	<0.5	<0.5	<0.5	<1.0	<50	<10
	09/28/00		6.82	98.37	<0.5	<0.5	<0.5	<1.0	<50	<2.5
	12/17/00		6.50	98.69	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	03/28/01		6.34	98.85	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	06/21/01		7.88	97.31	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	09/23/01		6.98	98.21	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	12/31/01		5.01	100.18	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	03/14/02		5.93	99.26	< 0.5	< 0.5	< 0.5	< 0.5	<50	<2.5
MW-6	06/20/00	105.07	6.24	98.83	<0.5	<0.5	<0.5	<1.0	<50	<10
	09/28/00		6.45	98.62	<0.5	<0.5	<0.5	<1.0	<50	<2.5
	12/17/00		6.26	98.81	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	03/28/01		6.10	98.97	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	06/21/01		7.68	97.39	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	09/23/01		6.72	98.35	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	12/23/01		4.68	100.39	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	03/14/02		5.55	99.52	< 0.5	< 0.5	< 0.5	< 0.5	<50	<2.5
MW-7	06/20/00	105.52	8.65	96.87	<0.5	<0.5	<0.5	<1.0	<50	13/13 ^a
	09/28/00		8.75	96.77	<0.5	<0.5	<0.5	<1.0	<50	136/261 ^a
	12/17/00		8.62	96.90	<0.5	<0.5	<0.5	<0.5	<50	27.1
	03/28/01		8.66	96.86	<0.5	<0.5	<0.5	<0.5	<50	51.5
	06/21/01		8.84	96.68	<0.5	<0.5	<0.5	<0.5	<50	53
	09/23/01		8.75	96.77	<0.5	<0.5	<0.5	<0.5	<50	35/21 ^a
	12/23/01		7.79	97.73	<0.5	<0.5	<0.5	<0.5	<50	440
	03/14/02		8.30	97.22	< 0.5	< 0.5	< 0.5	< 0.5	<50	18

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TABLE 1

GROUNDWATER ANALYTICAL DATA

ARCO Service Station 4494
566 Hegenberger Road at Edes 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)
RW-1	06/20/00	NE	8.21	NC	<0.5	1.1	<0.5	<1.0	<50	<10
	09/28/00		8.28	NC	<0.5	<0.5	<0.5	<1.0	<50	<2.5
	12/17/00		8.29	NC	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	03/28/01		8.16	NC	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	06/21/01		9.37	NC	5.1	<0.5	1.1	3.2	160	<2.5
	09/23/01		8.75	NC	<0.5	<0.5	<0.5	<0.5	57	<2.5
	12/31/01		6.80	NC	3.1	<0.5	6.4	4.7	520	<2.5
	03/14/02		7.86	NC	3.7	<0.5	0.7	2.8	240	<2.5

^a Analyzed by EPA Method 8260

TPH = Total Petroleum Hydrocarbons

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

µg/L = Micrograms per liter

NC = Not calculated

NE = Not surveyed/No elevation

JUN 8 4 2002

TABLE 2

GROUNDWATER FLOW DIRECTION AND GRADIENT

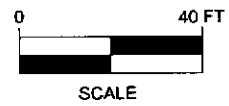
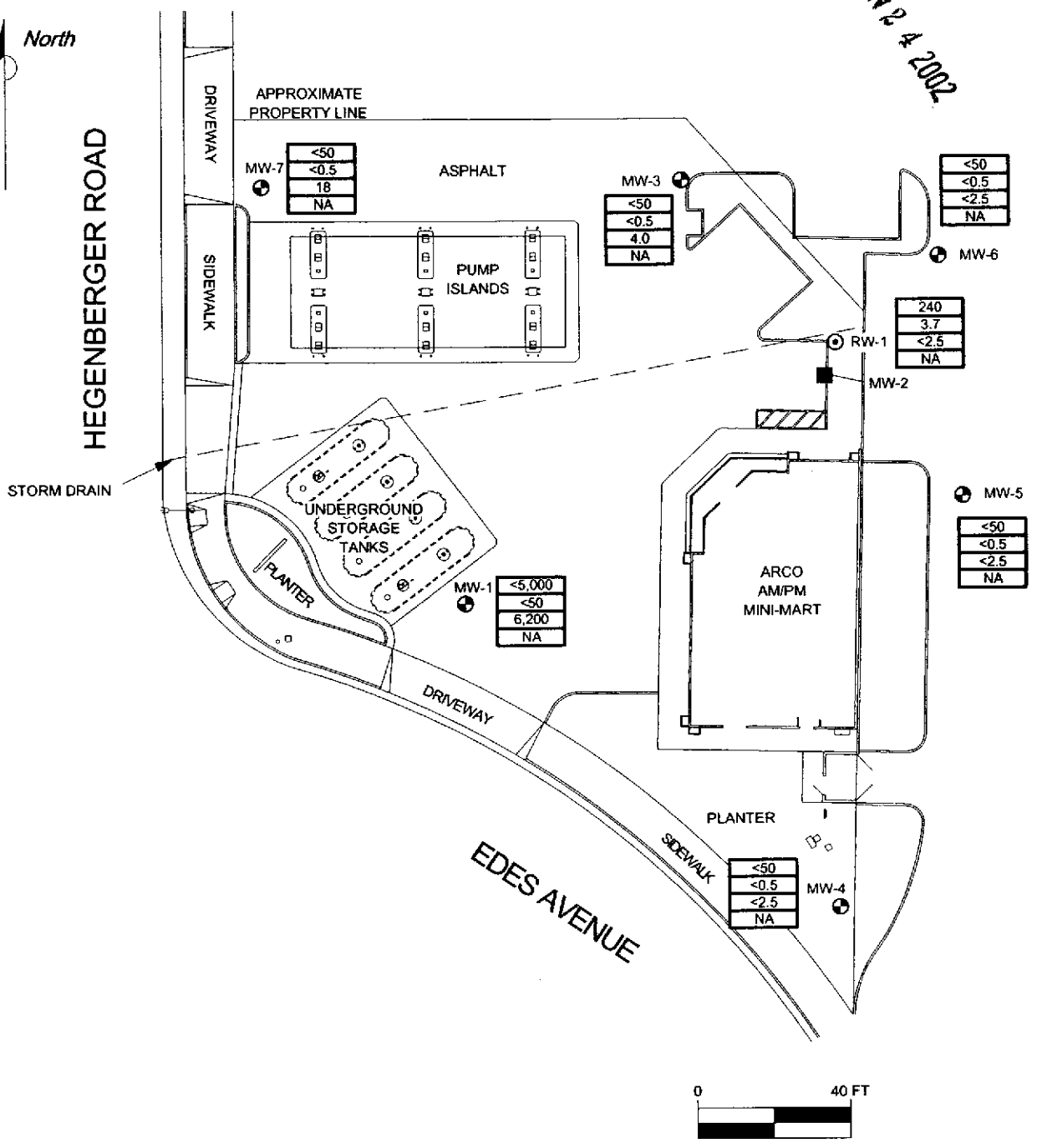
ARCO Service Station No. 4494
 566 Hegenberger Road at Edes Avenue
 Oakland, California

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Date Measured	Average Flow Direction	Average Hydraulic Gradient
06/20/00	North-Northeast	0.015
09/28/00	North	0.018
12/17/00	North-Northwest	0.013
03/28/01	Northwest	0.011
06/21/01	North	0.017
09/23/01	North	0.020
12/31/01	North-Northwest	0.023
03/14/02	North-Northwest	0.017

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

MAR 24 2002



LEGEND:

- MW-7 MONITORING WELL LOCATION
 - RW-1 RECOVERY WELL LOCATION, INSTALLED DURING SLURRY WALL CONSTRUCTION (RESNA-APRIL 1993)
 - MW-2 DESTROYED MONITORING WELL (DECEMBER 1992)
- | | |
|------|---|
| <50 | TPH AS GASOLINE IN MICROGRAMS PER LITER |
| <0.5 | BENZENE IN MICROGRAMS PER LITER |
| <2.5 | MTBE IN MICROGRAMS PER LITER |
| NA | MTBE CONFIRMED BY EPA METHOD 8260 |
- NA NOT ANALYZED/ NOT APPLICABLE

NOTE: SITE MAP ADAPTED FROM RESNA AND TAIT & ASSOCIATES FIGURES. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

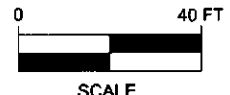
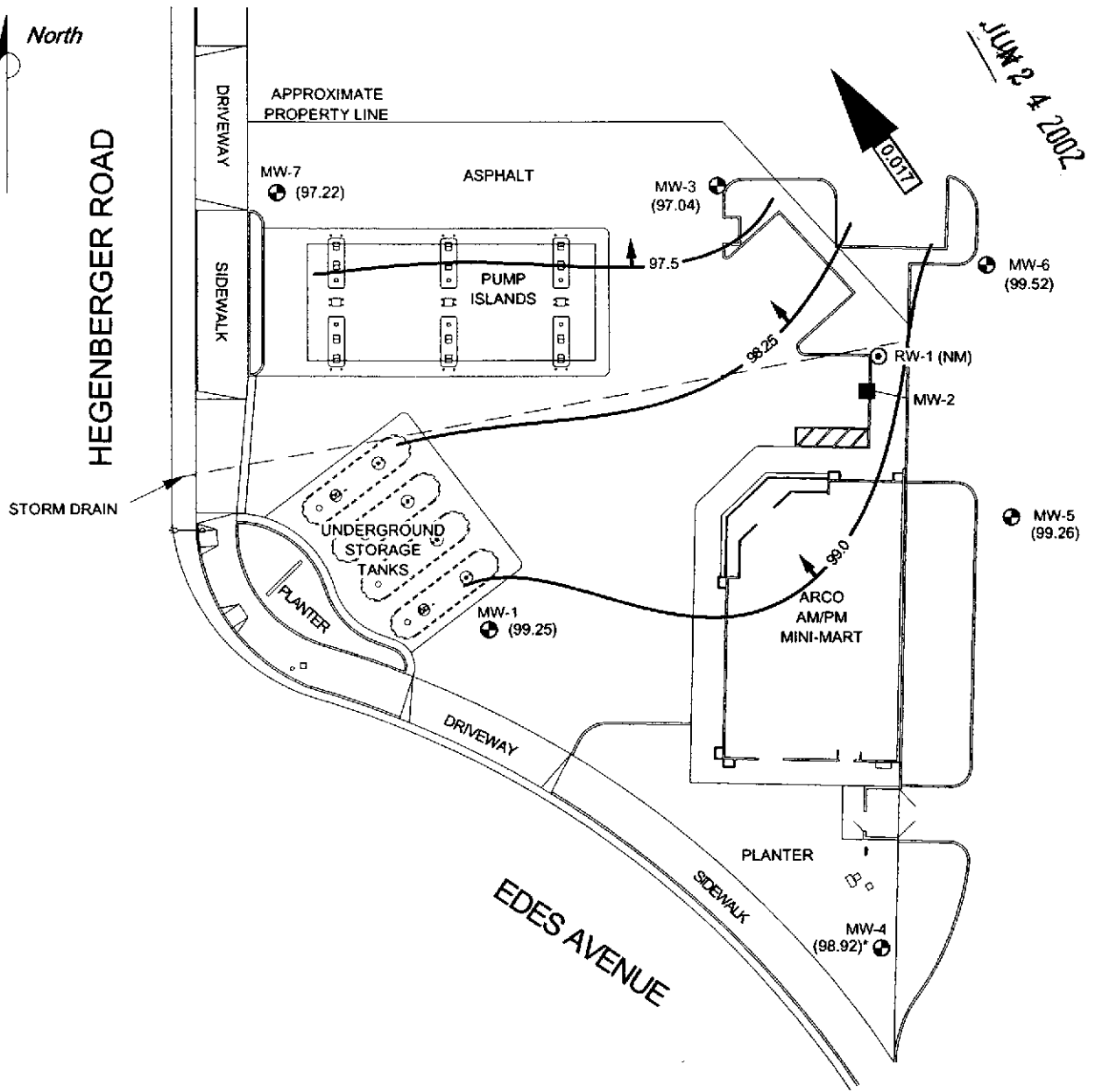
FIGURE 1
GROUND WATER ANALYTICAL SUMMARY
FIRST QUARTER 2002 (3/14/02)
ARCO STATION NO. 4494
566 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

PROJECT NO. D000-319	DRAWN BY TLA 6/3/02
FILE NO. 4494-1	PREPARED BY TLA
REVISION NO. 1	REVIEWED BY

Delta
Environmental
Consultants, Inc.



JUN 24 2002



LEGEND:

- MW-7 MONITORING WELL LOCATION
- ⊙ RW-1 RECOVERY WELL LOCATION, INSTALLED DURING SLURRY WALL CONSTRUCTION (RESNA-APRIL 1993)
- MW-2 DESTROYED MONITORING WELL (DECEMBER 1992)
(99.19) GROUND WATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (MSL)
- 99.0 - WATER TABLE CONTOUR IN FEET ABOVE MSL
- GROUND WATER FLOW DIRECTION
- 0.017 APPROXIMATE GROUND WATER FLOW GRADIENT
- * WELL(S) NOT USED IN CONTOUR CONSTRUCTION

NOTE: SITE MAP ADAPTED FROM RESNA AND TAIT & ASSOCIATES FIGURES. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

FIGURE 2
GROUND WATER ELEVATION CONTOUR MAP
FIRST QUARTER 2002 (3/14/02)
ARCO STATION NO. 4494
566 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

PROJECT NO. D000-319	DRAWN BY TLA 6/3/02
FILE NO. 4494-1	PREPARED BY TLA
REVISION NO. 1	REVIEWED BY



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APPENDIX A

Sampling and Analysis Procedures

FIELD METHODS AND PROCEDURES

JUN 24 2002

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

If the depth to groundwater was above the top of screens of the monitoring wells, then the wells were purged. 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. 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 was collected in storage barrels or tank(s) and transported to an ARCO approved facility for treatment and/or disposal.

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APPENDIX B

Historical Data Tables

Pacific Environmental Group, Inc.

1 of 4
 JAN 24 2002

Table 2
 Liquid Surface Elevation Data

ARCO Service Station 4494
 566 Hegenberger Road at Edes Avenue
 Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Depth to Liquid (feet, TOC)	SPH Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-1	06/06/90	105.31	6.65	6.05	0.00	98.66
	08/16/90		7.00	7.00	0.00	98.31
	08/21/90		7.05	7.05	0.00	98.26
	09/07/90		7.24	7.24	0.00	98.07
	11/20/90		7.46	7.46	0.00	97.85
	11/29/90		7.40	7.40	0.00	97.91
	12/19/90		6.99	6.99	0.00	98.32
	01/29/91		7.23	7.23	0.00	98.08
	02/27/91		7.45	7.45	0.00	97.86
	03/07/91		6.96	6.96	0.00	98.35
	03/26/91		6.02	6.02	0.00	99.29
	05/02/91		7.04	7.04	0.00	98.27
	06/27/91		6.71	6.71	0.00	98.60
	07/24/91		6.91	6.91	0.00	98.40
	08/22/91		6.85	6.85	0.00	98.46
	09/30/91		7.04	7.04	0.00	98.27
	10/17/91		7.22	7.22	0.00	98.09
	11/21/91		7.17	7.17	0.00	98.14
	12/18/91		7.46	7.46	0.00	97.85
	01/19/92	7.44	7.44	0.00	97.87	
	02/20/92	6.25	6.25	0.00	99.06	
	03/20/92	6.40	6.40	0.00	98.91	
	04/20/92	6.88	6.88	0.00	98.43	
	05/19/92	7.10	7.10	0.00	98.21	
	06/08/92	7.22	7.22	0.00	98.09	
	07/15/92	106.10	7.92	7.92	0.00	97.39
	08/06/92		7.29	7.29	0.00	98.81
	10/29/92		7.34	7.34	0.00	98.76
	11/23/92		8.15	8.15	0.00	97.95
	08/16/93		7.23	7.23	0.00	98.87
	11/17/93		7.51	7.51	0.00	98.59
	02/21/94		6.56	6.56	0.00	99.54
05/11/94	6.57		6.57	0.00	99.53	
08/12/94	7.12		7.12	0.00	98.98	
11/17/94	6.85		6.85	0.00	99.28	
02/22/95	7.35		7.35	0.00	98.75	
05/24/95	7.07	7.07	0.00	99.03		
08/23/95	7.10	7.10	0.00	99.00		
11/17/95	7.72	7.72	0.00	98.38		
MW-2	06/06/90	105.78	9.92*	9.00	0.92	95.86
	08/16/90		NM	NM	0.17	NM
	08/21/90		NM	NM	0.17	NM
	09/07/90		9.34*	9.17	0.17	96.44
	11/20/90		9.20*	9.2	Sheen	96.58
	11/29/90		9.92*	9.92	Sheen	95.86
	12/19/90		8.95	8.95	0/00	96.83
	01/29/91		9.01	9.01	Sheen	96.77
	02/27/91		9.14	9.14	Sheen	96.64
	03/07/91		8.94	8.94	Sheen	96.84
	03/26/91		8.11	8.11	Sheen	97.67
05/02/91	8.72	8.72	0	97.06		

Table 2 (continued)
Liquid Surface Elevation Data

ARCO Service Station 4494
566 Hegenberger Road at Edes Avenue
Oakland, California

JUN 24 2002

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Depth to Liquid (feet, TOC)	SPH Thickness (feet)	Liquid Surface Elevation (feet, MSL)	
MW-2	06/27/91		9.20	9.2	Sheen	96.58	
(cont.)	07/24/91		9.25	9.25	0.00	96.53	
	08/22/91		9.20	9.20	0.00	96.58	
	09/30/91		9.31	9.31	Sheen	96.47	
	10/17/91		9.39	9.39	Sheen	96.39	
	11/21/91		9.20	9.2	0	96.58	
	12/18/91		9.23	9.23	Sheen	96.55	
	01/19/92		9.96**	9.96	Skimmer	95.82	
	02/20/92		9.13**	9.13	Skimmer	96.65	
	03/20/92		9.31**	9.31	Skimmer	96.47	
	04/20/92		9.69	9.69	Skimmer	96.09	
	05/19/92		9.92	9.92	Skimmer	95.86	
	06/08/92		9.84	9.84	Skimmer	95.94	
	07/15/92		10.19	10.19	Skimmer	95.59	
	08/06/92	106.57	10.05	10.05	Skimmer	96.52	
	10/29/92		10.00	10.00	Skimmer	96.57	
	11/23/92		9.88	9.87	0.01	96.69	
	12/08/92		-----Well Destroyed-----				
MW-3	08/16/90	105.51	8.87	8.87	0.00	96.64	
	08/21/90		8.85	8.85	0.00	96.66	
	09/07/90		8.98	8.98	0.00	96.53	
	11/20/90		9.10	9.10	0.00	96.41	
	11/29/90		9.05	9.05	0.00	96.46	
	12/19/90		8.67	8.67	0.00	96.84	
	01/29/91		8.96	8.96	0.00	96.55	
	02/27/91		8.71	8.71	0.00	96.80	
	03/07/91		8.49	8.49	0.00	97.02	
	03/26/91		7.65	7.65	0.00	97.86	
	05/02/91		8.62	8.62	0.00	96.89	
	06/27/91		8.94	8.94	0.00	96.57	
	07/24/91		8.96	8.96	0.00	96.55	
	08/22/91		8.92	8.92	0.00	96.59	
	09/30/91		9.04	9.04	0.00	96.47	
	10/17/91		9.12	9.12	0.00	96.39	
	11/21/91		8.92	8.92	0.00	96.59	
	12/18/91		8.97	8.97	0.00	96.54	
	01/19/92		8.69	8.69	0.00	96.82	
	02/20/92		7.78	7.78	0.00	97.73	
	03/20/92		8.15	8.15	0.00	97.36	
	04/20/92		8.57	8.57	0.00	96.94	
	05/19/92		8.76	8.76	0.00	96.75	
	06/08/92		8.74	8.74	0.00	96.77	
	07/15/92		9.12	9.12	0.00	96.39	
	08/06/92	106.29	8.95	8.95	0.00	97.34	
	10/29/92		8.78	8.78	0.00	97.51	
	11/23/92		9.91	9.91	0.00	96.38	
	08/16/93		8.62	8.62	0.00	97.67	
	11/17/93		8.72	8.72	0.00	97.57	
	02/21/94		7.91	7.91	0.00	98.38	
	05/11/94		8.09	8.09	0.00	98.20	

Table 2 (continued)
Liquid Surface Elevation Data

ARCO Service Station 4494
566 Hegenberger Road at Edes Avenue
Oakland, California

JUN 24 2002

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Depth to Liquid (feet, TOC)	SPH Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-3	08/12/94		8.78	8.78	0.00	97.51
(cont.)	11/17/94		8.45	8.45	0.00	97.84
	02/22/95		8.95	8.95	0.00	97.34
	05/24/95		8.67	8.67	0.00	97.62
	08/23/95		9.17	9.17	0.00	97.12
	11/17/95		9.39	9.39	0.00	96.90
MW-4	08/16/90	106.61	8.16	8.16	0.00	98.45
	08/21/90		8.22	8.22	0.00	98.39
	09/07/90		8.39	8.39	0.00	98.22
	11/20/90		8.57	8.57	0.00	98.04
	11/29/90		8.53	8.53	0.00	98.08
	12/19/90		8.13	8.13	0.00	98.48
	01/29/91		8.66	8.66	0.00	97.95
	02/27/91		8.44	8.44	0.00	98.17
	03/07/91		8.18	8.18	0.00	98.43
	03/26/91		7.56	7.56	0.00	99.05
	05/02/91		8.25	8.25	0.00	98.36
	06/27/91		7.75	7.75	0.00	98.86
	07/24/91		8.12	8.12	0.00	98.49
	08/22/91		7.98	7.98	0.00	98.63
	09/30/91		8.26	8.26	0.00	98.35
	10/17/91		8.42	8.42	0.00	98.19
	11/21/91		8.65	8.65	0.00	97.96
	12/18/91		8.77	8.77	0.00	97.84
	01/19/92		8.42	8.42	0.00	98.19
	02/20/92		7.60	7.60	0.00	99.01
	03/20/92		7.61	7.61	0.00	99.00
	04/20/92		8.15	8.15	0.00	98.46
	05/19/92		8.14	8.14	0.00	98.47
	06/08/92		8.40	8.40	0.00	98.21
	07/15/92		8.72	8.72	0.00	97.89
	08/06/92	107.40	8.52	8.52	0.00	98.88
	10/29/92		8.63	8.63	0.00	98.77
	11/23/92		8.75	8.75	0.00	98.65
	08/16/93		8.69	8.69	0.00	98.71
	11/17/93		9.11	9.11	0.00	98.29
	02/21/94		8.16	8.16	0.00	99.24
	05/11/94		8.29	8.29	0.00	99.11
	08/12/94		8.75	8.75	0.00	98.65
	11/17/94		8.40	8.40	0.00	99.00
	02/22/95		8.72	8.72	0.00	98.68
	05/24/95		8.63	8.63	0.00	98.77
	08/23/95		6.50	6.50	0.00	100.90
	11/17/95		9.15	9.15	0.00	98.25
MW-5	08/06/92	105.19	7.19	7.19	0.00	98.00
	10/29/92		6.99	6.99	0.00	98.20
	11/23/92		6.90	6.90	0.00	98.29
	08/16/93		7.06	7.06	0.00	98.13
	11/17/93		6.91	6.91	0.00	98.28
	02/21/94		5.52	5.52	0.00	99.67
	05/11/94		6.18	6.18	0.00	99.01
	08/12/94		6.81	6.81	0.00	98.38
	11/17/94		5.38	5.38	0.00	99.81
	02/22/95		6.25	6.25	0.00	98.94

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February 15, 1996

Table 2 (continued)
Liquid Surface Elevation Data

ARCO Service Station 4494
566 Hegenberger Road at Edes Avenue
Oakland, California

JUN 24 2002

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Depth to Liquid (feet, TOC)	SPH Thickness (feet)	Liquid Surface Elevation (feet, MSL)	
MW-5 (cont.)	05/24/95		6.30	6.30	0.00	98.89	
	08/23/95		6.90	6.90	0.00	98.29	
	11/17/95		7.02	7.02	0.00	98.17	
MW-6	08/06/92	105.07	7.01	7.01	0.00	98.06	
	10/29/92		6.70	6.70	0.00	98.37	
	11/23/92		6.75	6.75	0.00	98.32	
	08/16/93		6.71	6.71	0.00	98.36	
	11/17/93		6.67	6.67	0.00	98.40	
	02/21/94		5.31	5.31	0.00	99.76	
	05/11/94		5.98	5.98	0.00	99.09	
	08/12/94		6.60	6.60	0.00	98.47	
	11/17/94		5.09	5.09	0.00	99.98	
	02/22/95		5.85	5.85	0.00	99.22	
	05/24/95		5.92	5.92	0.00	99.15	
	08/23/95		6.50	6.50	0.00	98.57	
	11/17/95		6.75	6.75	0.00	98.32	
	RW-1	08/06/92	105.52	8.28	8.28	0.00	97.24
		10/29/92		8.62	8.62	0.00	96.90
11/23/92			8.21	8.21	0.00	97.31	
08/16/93			8.11	8.11	0.00	97.41	
11/17/93			8.11	8.11	0.00	97.41	
02/21/94			7.34	7.34	0.00	98.18	
05/11/94			7.45	7.45	0.00	98.07	
08/12/94			8.13	8.13	0.00	97.39	
11/17/94			7.90	7.90	0.00	97.62	
02/22/95			8.40	8.40	0.00	97.12	
05/24/95			8.29	8.29	0.00	97.23	
08/23/95			8.60	8.60	0.00	96.92	
11/17/95			8.73	8.73	0.00	96.79	
08/16/93		NM					Well Dry-----
11/17/93							Well Dry-----
02/21/94		7.69	7.69	0.00	NM		
05/11/94		7.96	7.96	0.00	NM		
08/12/94		7.58	7.58	0.00	NM		
11/17/94		7.66	7.66	0.00	NM		
02/22/95		8.00	8.00	0.00	NM		
05/24/95		8.10	8.10	0.00	NM		
08/23/95		8.67	8.67	0.00	NM		
11/17/95		9.15	9.15	0.00	NM		

MSL = Mean sea level
TOC = Top of casing
* = Separate-phase hydrocarbons present in well.
** = Skimmer installed (12/24/91).
NM = Not measured

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Table 3
Groundwater Analytical Data
 Total Petroleum Hydrocarbons
 (TPPH as Gasoline, BTEX Compounds, TEPH as Diesel, and Total Oil and Grease)

ARCO Service Station 4494
 566 Hegenberger Road at Edes Avenue
 Oakland, California

Well Number	Date Sampled	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	TEPH as Diesel (ppb)	Total Oil and Grease (ppm)	
MW-1	06/19/90	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<5000	
	08/16/90	<20	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
	09/07/90	N/A	N/A	N/A	N/A	N/A	N/A	<5000	
	11/29/90	<50	<0.50	0.7	<0.50	<0.50	N/A	N/A	
	03/07/91	<50	<0.30	<0.30	<0.30	<0.30	N/A	N/A	
	06/27/91	<50	<0.30	<0.30	<0.30	<0.30	N/A	N/A	
	09/30/91	<50	<0.30	<0.30	<0.30	<0.30	N/A	N/A	
	12/18/91	<50	<0.30	<0.30	<0.30	<0.30	N/A	N/A	
	03/20/92	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
	06/08/92	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
	08/06/92	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
	10/29/92	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	08/16/93	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	11/17/93	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	02/22/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	05/11/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	08/12/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	11/17/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	02/22/95	-----Well Sampled Annually-----							
	05/24/95	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
08/23/95	-----Well Sampled Annually-----								
11/17/95	-----Well Sampled Annually-----								
MW-2	06/19/90	-----0.92 foot of Separate-Phase Hydrocarbons-----							
	08/16/90	-----0.17 foot of Separate-Phase Hydrocarbons-----							
	09/07/90	-----Separate-Phase Hydrocarbons-----							
	11/29/90	-----Separate-Phase Hydrocarbons-----							
	03/07/91	-----Separate-Phase Hydrocarbons-----							
	06/27/91	-----Separate-Phase Hydrocarbons-----							
	09/30/91	-----Separate-Phase Hydrocarbons-----							
	12/18/91	-----Separate-Phase Hydrocarbons-----							
	03/20/92	48,000	2,000	580	2,300	7,000	N/A	N/A	
	06/08/92	43,000	2,900	940	240	5,100	N/A	N/A	
08/06/92	78,000	2,500	6,700	2,900	16,000	N/A	N/A		
10/29/92	NS	NS	NS	NS	NS	NS	NS		
12/08/92	-----Well Destroyed-----								
MW-3	06/19/90	<20	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
	08/16/90	N/A	N/A	N/A	N/A	N/A	N/A	<5,000	
	09/07/90	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
	11/29/90	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
	03/07/91	<50	<30	<30	<30	<30	N/A	N/A	
	06/27/91	<30	<30	<30	<30	<30	N/A	N/A	
	09/30/91	<30	<30	<30	<30	<30	N/A	N/A	
	12/18/91	<30	<30	<30	<30	<30	N/A	N/A	
	03/20/92	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
	06/08/92	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
	08/06/92	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
	10/29/92	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	08/16/93	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
11/17/93	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A		

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Table 3 (continued)
Groundwater Analytical Data
 Total Petroleum Hydrocarbons
 (TPPH as Gasoline, BTEX Compounds, TEPH as Diesel, and Total Oil and Grease)

ARCO Service Station 4494
 566 Hegenberger Road at Edes Avenue
 Oakland, California

Well Number	Date Sampled	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	TEPH as Diesel (ppb)	Total Oil and Grease (ppm)	
MW-3 (cont.)	02/22/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	05/11/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	08/12/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	11/17/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	02/22/95	-----Well Sampled Annually-----							
	05/24/95	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
	08/23/95	-----Well Sampled Annually-----							
	11/17/95	-----Well Sampled Annually-----							
	MW-4	08/16/90	<20	<0.50	<0.50	<0.50	<0.50	N/A	N/A
		09/07/90	N/A	N/A	N/A	N/A	N/A	N/A	<5,000
11/29/90		<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
03/07/91		<50	<0.30	<0.30	<0.30	<0.30	N/A	N/A	
06/27/91		<50	0.75	1.1	<0.30	1.6	N/A	N/A	
09/30/91		<50	<0.30	<0.30	<0.30	<0.30	N/A	N/A	
12/18/91		<50	0.83	1.2	<0.30	0.58	N/A	N/A	
03/20/92		<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
06/08/92		<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
08/06/92		<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
10/29/92		<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
08/16/93		<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
11/17/93		<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
02/22/94		<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
05/11/94		<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
08/12/94		<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
11/17/94		<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
02/22/95		-----Well Sampled Annually-----							
05/24/95		<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
08/23/95		-----Well Sampled Annually-----							
11/17/95	-----Well Sampled Annually-----								
MW-5	08/06/92	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
	10/29/92	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	08/16/93	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	11/17/93	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	02/22/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	05/11/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	08/12/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	11/17/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	02/22/95	-----Well Sampled Annually-----							
	05/24/95	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
08/23/95	-----Well Sampled Annually-----								
11/17/95	-----Well Sampled Annually-----								
MW-6	08/06/92	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
	10/29/92	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	08/16/93	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	11/17/93	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	02/22/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	05/11/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	08/12/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	11/17/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	02/22/95	-----Well Sampled Annually-----							

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Table 3 (continued)
Groundwater Analytical Data
 Total Petroleum Hydrocarbons
 (TPPH as Gasoline, BTEX Compounds, TEPH as Diesel, and Total Oil and Grease)

ARCO Service Station 4494
 566 Hegenberger Road at Edes Avenue
 Oakland, California

Well Number	Date Sampled	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	TEPH as Diesel (ppb)	Total Oil and Grease (ppm)
MW-6 (cont.)	05/24/95	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A
	08/23/95	-----Well Sampled Annually-----						
	11/17/95	-----Well Sampled Annually-----						
MW-7	08/06/92	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A
	10/29/92	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	08/16/93	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	11/17/93	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	02/22/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	05/11/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	08/12/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	11/17/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	02/22/95	-----Well Sampled Annually-----						
	05/24/95	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A
	08/23/95	-----Well Sampled Annually-----						
11/17/95	-----Well Sampled Annually-----							
RW-1	08/16/93	NS	NS	NS	NS	NS	NS	NS
	11/17/93	NS	NS	NS	NS	NS	NS	NS
	02/22/94	280	2,100	19	40	66	N/A	N/A
	05/11/94	3,300	32	28	87	310	N/A	N/A
	08/12/94	4,600	42	59	190	400	N/A	N/A
	11/17/94	1,400	56	21	28	210	N/A	N/A
	02/22/95	8,100	140	<10	550	560	N/A	N/A
	05/24/95	940	53	0.75	11	1.4	N/A	N/A
	08/23/95	620	2.1	2.3	0.67	0.67	N/A	N/A
	11/17/95	1,100	7.6	21	46	180	N/A	N/A

ppb = Parts per billion
 ppm = Parts per million
 N/A = Not applicable
 NS = Not sampled

Table 4
Groundwater Analytical Data
Total Methyl t-Butyl Ether

ARCO Service Station 4494
566 Hegenberger Road at Edes Avenue
Oakland, California

Well Number	Date Sampled	Methyl t-Butyl Ether (ppb)
MW-1	08/23/95	NS
MW-2	08/23/95	NS
MW-3	08/23/95	NS
MW-4	08/23/95	NS
MW-5	08/23/95	NS
MW-6	08/23/95	NS
MW-7	08/23/95	NS
RW-1	08/23/95	13
ppb = Parts per billion NS = Not sampled See certified analytical report for detection limit.		

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APPENDIX C

Certified Analytical Reports
With
Chain-of-Custody



**Sequoia
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www.sequoialabs.com

28 March, 2002

JUN 24 2002

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

RE: ARCO 4494, Oakland, CA
Sequoia Report: S203291

Enclosed are the results of analyses for samples received by the laboratory on 03/19/02 14:06. 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



JUN 24 2002

Delta Environmental Consultants (Rancho Cordova) 3164 Gold Camp Drive Ste. 200 Rancho Cordova CA, 95670	Project: ARCO 4494, Oakland, CA Project Number: 4494, Oakland, CA Project Manager: Steven Meeks	Reported: 03/28/02 13:39
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ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	S203291-01	Water	03/14/02 11:05	03/19/02 14:06
MW-3	S203291-02	Water	03/14/02 11:20	03/19/02 14:06
MW-4	S203291-03	Water	03/14/02 12:50	03/19/02 14:06
MW-5	S203291-04	Water	03/14/02 11:40	03/19/02 14:06
MW-6	S203291-05	Water	03/14/02 12:00	03/19/02 14:06
MW-7	S203291-06	Water	03/14/02 12:35	03/19/02 14:06
RW-1	S203291-07	Water	03/14/02 12:15	03/19/02 14:06
TB	S203291-08	Water	03/14/02 06:00	03/19/02 14:06

Sequoia Analytical - Sacramento

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.

Ron Chew, Client Services Representative



JUN 2 A 2002

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

Project: ARCO 4494, Oakland, CA
Project Number: 4494, Oakland, CA
Project Manager: Steven Meeks

Reported:
03/28/02 13:39

**Total Purgeable Hydrocarbon, BTEX and MTBE by DHS LUFT
Sequoia Analytical - Sacramento**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (S203291-01) Water Sampled: 03/14/02 11:05 Received: 03/19/02 14:06									
Purgeable Hydrocarbons	ND	5000	ug/l	100	2030346	03/25/02	03/25/02	DHS LUFT	
Benzene	ND	50	"	"	"	"	"	"	
Toluene	ND	50	"	"	"	"	"	"	
Ethylbenzene	ND	50	"	"	"	"	"	"	
Xylenes (total)	ND	50	"	"	"	"	"	"	
Methyl tert-butyl ether	6200	250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		77.1 %	60-140		"	"	"	"	
MW-3 (S203291-02) Water Sampled: 03/14/02 11:20 Received: 03/19/02 14:06									
Purgeable Hydrocarbons	ND	50	ug/l	1	2030346	03/25/02	03/25/02	DHS LUFT	C-07
Benzene	ND	0.50	"	"	"	"	"	"	C-07
Toluene	ND	0.50	"	"	"	"	"	"	C-07
Ethylbenzene	ND	0.50	"	"	"	"	"	"	C-07
Xylenes (total)	ND	0.50	"	"	"	"	"	"	C-07
Methyl tert-butyl ether	4.0	2.5	"	"	"	"	"	"	C-07
Surrogate: a,a,a-Trifluorotoluene		89.7 %	60-140		"	"	"	"	C-07
MW-4 (S203291-03) Water Sampled: 03/14/02 12:50 Received: 03/19/02 14:06									
Purgeable Hydrocarbons	ND	50	ug/l	1	2030346	03/25/02	03/25/02	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		93.0 %	60-140		"	"	"	"	



Sequoia Analytical

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

Project: ARCO 4494, Oakland, CA
 Project Number: 4494, Oakland, CA
 Project Manager: Steven Meeks

Reported:
 03/28/02 13:39

Total Purgeable Hydrocarbon, BTEX and MTBE by DHS LUFT
Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-5 (S203291-04) Water Sampled: 03/14/02 11:40 Received: 03/19/02 14:06									
Purgeable Hydrocarbons	ND	50	ug/l	1	2030346	03/25/02	03/25/02	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	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		90.0 %	60-140		"	"	"	"	
MW-6 (S203291-05) Water Sampled: 03/14/02 12:00 Received: 03/19/02 14:06									
Purgeable Hydrocarbons	ND	50	ug/l	1	2030346	03/25/02	03/25/02	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	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		91.0 %	60-140		"	"	"	"	
MW-7 (S203291-06) Water Sampled: 03/14/02 12:35 Received: 03/19/02 14:06									
Purgeable Hydrocarbons	ND	50	ug/l	1	2030346	03/25/02	03/25/02	DHS LUFT	C-07
Benzene	ND	0.50	"	"	"	"	"	"	C-07
Toluene	ND	0.50	"	"	"	"	"	"	C-07
Ethylbenzene	ND	0.50	"	"	"	"	"	"	C-07
Xylenes (total)	ND	0.50	"	"	"	"	"	"	C-07
Methyl tert-butyl ether	18	2.5	"	"	"	"	"	"	C-07
<i>Surrogate: a,a,a-Trifluorotoluene</i>		87.7 %	60-140		"	"	"	"	C-07



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 Project Number: 4494, Oakland, CA
 Project Manager: Steven Meeks

Reported:
 03/28/02 13:39

**Total Purgeable Hydrocarbon, BTEX and MTBE by DHS LUFT
 Sequoia Analytical - Sacramento**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
RW-1 (S203291-07) Water Sampled: 03/14/02 12:15 Received: 03/19/02 14:06									
Purgeable Hydrocarbons	240	50	ug/l	1	2030346	03/25/02	03/25/02	DHS LUFT	HC-12
Benzene	3.7	0.50	"	"	"	"	"	"	"
Toluene	ND	0.50	"	"	"	"	"	"	"
Ethylbenzene	0.70	0.50	"	"	"	"	"	"	"
Xylenes (total)	2.8	0.50	"	"	"	"	"	"	"
Methyl tert-butyl ether	ND	2.5	"	"	"	"	"	"	"
Surrogate: a,a,a-Trifluorotoluene		95.5 %	60-140		"	"	"	"	
TB (S203291-08) Water Sampled: 03/14/02 06:00 Received: 03/19/02 14:06									
Purgeable Hydrocarbons	ND	50	ug/l	1	2030346	03/25/02	03/25/02	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		84.3 %	60-140		"	"	"	"	

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 Reported:
 03/28/02 13:39

Total Purgeable Hydrocarbon, BTEX and MTBE by DHS LUFT - Quality Control
Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Notes
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Batch 2030346 - EPA 5030B (P/T)
Blank (2030346-BLK1)

Prepared & Analyzed: 03/25/02

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	"							
<i>Surrogate: a,a,a-Trifluorotoluene</i>	8.88		"	10.0		88.8	60-140			

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LCS (2030346-BS1)

Prepared & Analyzed: 03/25/02

Benzene	7.79	0.50	ug/l	10.0		77.9	70-130			
Toluene	7.91	0.50	"	10.0		79.1	70-130			
Ethylbenzene	8.55	0.50	"	10.0		85.5	70-130			
Xylenes (total)	24.8	0.50	"	30.0		82.7	70-130			
Methyl tert-butyl ether	8.16	2.5	"	10.0		81.6	70-130			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	9.09		"	10.0		90.9	60-140			

Matrix Spike (2030346-MS1)

Source: S203291-03

Prepared & Analyzed: 03/25/02

Benzene	8.43	0.50	ug/l	10.0	ND	84.3	60-140			
Toluene	8.33	0.50	"	10.0	ND	83.3	60-140			
Ethylbenzene	9.11	0.50	"	10.0	ND	91.1	60-140			
Xylenes (total)	26.5	0.50	"	30.0	ND	88.3	60-140			
Methyl tert-butyl ether	9.44	2.5	"	10.0	ND	87.5	60-140			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	8.94		"	10.0		89.4	60-140			

Matrix Spike Dup (2030346-MSD1)

Source: S203291-03

Prepared & Analyzed: 03/25/02

Benzene	8.57	0.50	ug/l	10.0	ND	85.7	60-140	1.65	25	
Toluene	8.61	0.50	"	10.0	ND	86.1	60-140	3.31	25	
Ethylbenzene	9.44	0.50	"	10.0	ND	94.4	60-140	3.56	25	
Xylenes (total)	27.3	0.50	"	30.0	ND	91.0	60-140	2.97	25	
Methyl tert-butyl ether	9.53	2.5	"	10.0	ND	88.4	60-140	0.949	25	
<i>Surrogate: a,a,a-Trifluorotoluene</i>	9.51		"	10.0		95.1	60-140			



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Reported:
03/28/02 13:39

Notes and Definitions

C-07 The reported compound(s) have been confirmed by a second (dissimilar) column or detector.

HC-12 Hydrocarbon pattern is present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel.

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

JUN 24 2002

JUN 24 2002

APPENDIX D
Field Sample Sheets



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

Arco Site Address: 556 Hegenberger Road

Arco Site Number: 4494

Oakland

Delta Project No.: D000-319

Arco Project Manager: Paul Supple

Delta Project PM: Steven W. Meeks

Site Sampled By: Doulos

Date Sampled: 03/14/02

Site Contact & Phone Number: _____

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	Confirm MTBE by EPA 8260	Dissolved Oxygen (mg/L)	Sample Frequency (A, S, Q)	Sample I.D.	Sample Time
MW-1	10:25	6.85	13.0	22.7	<input type="checkbox"/>	15.83	4 inch	2.0	31.7	31.6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0.80	Q/3,6,9,12	MW-1	11:05
MW-3	10:30	9.25	7.0	17.7	<input checked="" type="checkbox"/>	8.42	4 inch	2.0	16.8	NP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.03	Q/3,6,9,12	MW-3	11:20
MW-4	10:32	8.48	7.0	16.3	<input checked="" type="checkbox"/>	7.77	4 inch	2.0	15.5	NP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.06	Q/3,6,9,12	MW-4	12:50
MW-5	10:35	5.93	8.0	16.6	<input type="checkbox"/>	10.71	2 inch	0.5	5.4	4.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.18	Q/3,6,9,12	MW-5	11:40
MW-6	10:39	5.55	8.0	17.8	<input type="checkbox"/>	12.26	2 inch	0.5	6.1	6.6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0.87	Q/3,6,9,12	MW-6	12:00
MW-7	10:42	8.30	9.0	13.7	<input type="checkbox"/>	5.35	4 inch	2.0	10.7	11.8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0.75	Q/3,6,9,12	MW-7	12:35
RW-1	10:45	7.86	NM	11.0	<input type="checkbox"/>	3.15	2 inch	0.5	1.6	2.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0.63	Q/3,6,9,12	RW-1	12:15
					<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
					<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
					<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
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					<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

2002 4 2 MW-1

(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: Quarterly: MW-1, MW-3, MW-4, MW-5, MW-6, MW-7, and RW-1

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.



3164 Gold Camp Drive, Suite 200
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Arco Site Number: 4494

Oakland

Delta Project No.: D000-319

Arco Project Manager: Paul Supple

Delta Project PM: Steven W. Meeks

Site Sampled By: Doulos

Date Sampled: 03/14/02

Site Contact & Phone Number: _____

Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons
MW-1	10:50	19.4	7.40	3,999	10												
	10:52	19.8	7.36	3,999	20												
	10:54	20.3	7.33	3,999	31												
Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons
MW-3	No Purge Required																
Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons
MW-4	No Purge Required																
Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons
MW-5		17.6	7.03	3,999	1.5												
		17.9	7.01	3,999	3.2												
		18.3	6.95	3,999	5.3												
Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons
MW-6		18.6	7.08	3,704	2.0												
		19.1	6.95	3,609	4.0												
		18.6	6.85	3,600	6.1												
Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons
MW-7	11:27	19.6	7.13	3,608	3.6												
	11:28	19.0	7.08	3,590	7.0												
	11:29	19.0	7.06	3,473	10.8												
Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons
RW-1	12:05	18.9	7.42	3,880	0.5												
	12:06	18.9	7.38	3,881	1.0												
	12:07	18.7	7.32	3,875	1.5												

2002 3 2 MW

Notes: NP = NO PURGE

Original Copies of Field Sampling Sheets are Located in Project File