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June 29, 2001

JUL 0 3 2001

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

RO#72

Subject: *Quarterly Groundwater Monitoring and Remediation System Status Report, First Quarter 2001*
ARCO Station No. 2169
889 West Grand Avenue
Oakland, California
Delta Project No. D000-311

Dear Mr. Supple:

Delta Environmental Consultants, Inc. is submitting the attached report that presents the results of the first quarter 2001 groundwater monitoring program at ARCO Products Company Service Station No. 2169, located at 889 West Grand Avenue, 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.

T. C. Dishpeto Jr

Trevor L. Atkinson
Project Engineer

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

REGISTERED PROFESSIONAL ENGINEER
STEVEN WHITTEN MEEKS
C 057461
Exp. 12/31/01
CIVIL
STATE OF CALIFORNIA

06-29-01

TLA (Lrp004.311.doc)
Enclosures

cc: Ms. Susan Hugo – Alameda County Health Care Services Agency

ARCO QUARTERLY GROUNDWATER MONITORING REPORT

Station No.: 2169 Address:	889 West Grand Avenue, Oakland, California
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.:	D000-311
Primary Agency/Regulatory ID No.	Alameda County Health Care Services Agency

WORK PERFORMED THIS QUARTER

1. Quarterly monitoring and sampling for first quarter 2001
2. System O&M site visits were performed during the first quarter 2001
3. Performed oversight of UST/line/dispenser upgrade activities in first quarter 2001.

WORK PROPOSED FOR NEXT QUARTER

1. Prepare quarterly monitoring and sampling report for first quarter 2001
2. Conduct quarterly monitoring and sampling for second quarter 2001
3. *Conduct monthly O & M site visits for remediation system.*

QUARTERLY MONITORING:

Current Phase of Project	Quarterly Groundwater Monitoring and Operation and Maintenance of Remediation Systems
Frequency of Groundwater Sampling:	Annual (1st Quarter): A-3, A-4 Semi-annual (1st/2nd Quarter): A-2, AR-1, AR-2 Quarterly: A-1, A-5, A-6, ADR-1, ADR-2
Frequency of Groundwater Monitoring:	Quarterly (groundwater, Monthly SVE and Biosparging)
Is Free Product (FP) Present On–Site:	No sheen on ADR-2
FP Recovered this Quarter:	None
Cumulative FP Recovered to Date:	4.8 gallons, wells ADR-1 and ADR-2
Bulk Soil Removed This Quarter:	None
Bulk Soil Removed to Date:	2,196 cubic yards of TPH impacted soil
Current Remediation Techniques:	SVE and Biosparging systems
Approximate Depth to Groundwater:	9.74 ft.
Groundwater Gradient:	0.003 Northwest

SVE QUARTERLY OPERATION & PERFORMANCE:

Equipment Inventory:	Therm Tech Model VAC-25, 250 cfm, *Thermal/Catalytic Oxidizer*
Operating Mode:	Catalytic Oxidation
BAAQMD Permit No.:	12119
TPH Conc. at End of Period (lab):	System did not operate due to low concentrations
Benzene Conc. at End of Period (lab):	System did not operate due to low concentrations
Flow Rate at End of Period:	System did not operate due to low concentrations
Hydrocarbons Destroyed This Period:	System did not operate due to low concentrations
Hydrocarbons Destroyed to Date:	9,104 pounds
Utility Usage Electric (kWh):	Not Available
Operating Hours This Period:	System did not operate due to low concentrations
Percent Operational:	System did not operate due to low concentrations
Operating Hours To Date:	11,422 hours
Unit Maintenance:	Not applicable
Number of Auto Shut Downs:	0
Destruction of Efficiency Permit: Requirements:	98.5% (POC >2,000 ppmv); 97% (POC >200 ppmv); 90% (POC <200 ppmv); waived if outlet POC <1.0 lb/day and benzene <0.02 lb/day
Average Percent TPH Conversion:	>99%
Average Stack Temperature	700° F
Average Source Flow:	76 scfm
Average Process Flow:	76 scfm
Average Source Vacuum:	10" H_20

(SVE data recreated from data provided by IT Corporation.)

DISCUSSION:

- Benzene and total petroleum hydrocarbons as gasoline were found in samples collected from A-1, A-5, A-6 and ADR-1 ranging from 23.4 µg/L (ADR-1) to 1,110 µg/L (A-5) and 216 µg/L (A-6) to 7,990 µg/L (A-5), respectively.
- Methyl tertiary butyl ether was found in samples collected from A-1, A-6 at concentrations of 10.8 µg/L to 19.9 µg/L, respectively.
- The remediation system ran for 2 hours. The system was shutdown due to low or zero concentrations.
- The site appears to be undergoing natural attenuation due to the field measurements of methane measured in the remediation system's influent vapor (see Table 3).

ATTACHMENTS:

- Table 1 *Groundwater Elevation and Analytical Data*
- Table 2 Groundwater Flow Direction and Gradient
- Table 3 SVE System Analytical Results
- Table 4 SVE System Monitoring Table
- 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 Field Data Sheet
- Appendix E Soil Vapor Extraction System Laboratory Analytical Results

TABLE 1

GROUNDWATER ANALYTICAL DATA

ARCO Service Station No. 2169
889 West Grand 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)
AR-1	06/26/00	15.61	11.59	4.02	NA	NA	NA	NA	NA	NA
	07/20/00		12.06	3.55	<0.5	<0.5	<0.5	<1.0	<50	6
	09/19/00		11.89	3.72	<0.5	<0.5	<0.5	<1.0	<50	<3
	12/26/00		11.95	3.66	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	03/20/01		NM	NC	NS	NS	NS	NS	NS	NS
AR-2	06/26/00	15.28	11.79	3.49	NA	NA	NA	NA	NA	NA
	07/20/00		12.07	3.21	<0.5	<0.5	<0.5	<1.0	<50	<3
	09/19/00		12.08	3.20	<0.5	<0.5	<0.5	<1.0	<50	<3
	12/26/00		11.95	3.33	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	03/20/01		10.50	4.78	NS	NS	NS	NS	NS	NS
ADR-1	06/26/00	13.95	10.55	3.40	NA	NA	NA	NA	NA	NA
	07/20/00		10.85	3.10	29	<0.5	0.8	<1.0	180	22
	09/19/00		11.08	2.87	7.4	<0.5	1.2	<1.0	120	22
	12/26/00		10.93	3.02	1.29	<0.5	<0.5	<0.5	<50	14.7
	03/20/01		9.32	4.63	23.4	<0.5	8.71	4.13	225	10.8
ADR-2	06/26/00	14.64	11.22	3.42	NA	NA	NA	NA	NA	NA
	07/20/00		11.60	3.04	410	2.5	540	720	12,000	23
	09/19/00		11.81	2.83	530	5	680	740	1,400	34
	12/26/00		11.52	3.12	26.6	<5.0	21.4	32.5	901	32.8
	03/20/01		10.10	4.54	NS	NS	NS	NS	NS	NS

TABLE 1

GROUNDWATER ANALYTICAL DATA

ARCO Service Station No. 2169
889 West Grand 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)
A-1	06/26/00	14.16	10.75	3.41	NA	NA	NA	NA	NA	NA
	07/20/00		11.01	3.15	1,100	28	12	46	3,900	25
	09/19/00		11.26	2.90	2,400	27	20	57	4,800	32
	12/26/00		10.96	3.2	104	2.85	12.2	9.91	429	18.7
	03/20/01		9.59	4.57	13.9	7.12	13.9	23.2	<500	<25
A-2	06/26/00	14.55	11.27	3.28	NA	NA	NA	NA	NA	NA
	07/20/00		11.52	3.03	<0.5	<0.5	<0.5	<1.0	<50	<3
	09/19/00		11.63	2.92	NS	NS	NS	NS	NS	NS
	12/26/00		11.44	3.11	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	03/20/01		10.08	4.47	NS	NS	NS	NS	NS	NS
A-3	06/26/00	15.75	11.98	3.77	NS	NS	NS	NS	NS	NS
	07/20/00		12.21	3.54	NS	NS	NS	NS	NS	NS
	09/19/00		12.50	3.25	NS	NS	NS	NS	NS	NS
	12/26/00		12.17	3.58	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	03/20/01		10.70	5.05	NS	NS	NS	NS	NS	NS
A-4	06/26/00	15.25	10.99	4.26	NS	NS	NS	NS	NS	NS
	07/20/00		11.16	4.09	NS	NS	NS	NS	NS	NS
	09/19/00		11.97	3.28	NS	NS	NS	NS	NS	NS
	12/26/00		11.19	4.06	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	03/20/01		9.81	5.44	NS	NS	NS	NS	NS	NS

TABLE 1

GROUNDWATER ANALYTICAL DATA

ARCO Service Station No. 2169
889 West Grand 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)
A-5	06/26/00	13.51	10.04	3.47	NA	NA	NA	NA	NA	NA
	07/20/00		10.31	3.20	140	11	<0.5	8.9	730	3
	09/19/00		10.55	2.96	13	<0.5	2.8	1.9	160	<3
	12/26/00		10.37	3.14	465	108	659	1,450	8,120	<250
	03/20/01		8.81	4.7	1110	473	611	1,580	7,990	<250
A-6	06/26/00	13.51	10.09	3.42	NA	NA	NA	NA	NA	NA
	07/20/00		10.91	2.60	<0.5	<0.5	0.6	2.0	170	6
	09/19/00		11.27	2.24	<0.5	<0.5	<0.5	<1.0	<50	6
	12/26/00		10.65	2.86	<0.5	<0.5	<0.5	<0.5	56.2	8.17
	03/20/01		8.72	4.79	<0.5	<0.5	<0.5	1.8	216	19.9

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

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

TABLE 2

GROUNDWATER FLOW DIRECTION AND GRADIENT

ARCO Service Station No. 2169
889 West Grand Avenue
Oakland, California

Date Measured	Average Flow Direction	Average Hydraulic Gradient
07/20/00	Northwest	0.004
09/19/00	West-Northwest	0.003
12/26/00	Northwest	0.004
03/20/01	Northwest	0.003

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

TABLE 3

SVE SYSTEM ANALYTICAL RESULTS

ARCO Service Station No. 2169
889 West Grand Avenue
Oakland, California

Sample I.D.	Date	Benzene (ppmv)	Toluene (ppmv)	Ethyl-benzene (ppmv)	Total Xylenes (ppmv)	Purgeable Hydrocarbons (ppmv)	Methane (ppmv)
Influent	09/20/00	5.56	1.0	<0.12	0.88	246	47,000
Effluent	09/20/00	<0.016	<0.013	<0.012	<0.012	<2.4	5,700
Influent	10/23/00	<0.016	<0.013	<0.012	0.104	27.7	NA
Effluent	10/23/00	<0.016	<0.013	<0.012	<0.012	<2.4	NA
Influent	11/07/00	NA	NA	NA	NA	NA	>10,000[a]
Effluent	11/17/01	NA	NA	NA	NA	NA	>10,000[a]
Influent	12/26/00	NA	NA	NA	NA	NA	NM
Effluent	12/26/00	NA	NA	NA	NA	NA	NM
Influent	01/18/01	NA	NA	NA	NA	NA	1,200[a]
Effluent	01/18/01	NA	NA	NA	NA	NA	1,200[a]
Influent	02/06/01	NA	NA	NA	NA	NA	1,100[a]
Effluent	02/06/01	NA	NA	NA	NA	NA	1,100[a]
Influent	03/20/01	NA	NA	NA	NA	NA	NM
Effluent	03/20/01	NA	NA	NA	NA	NA	NM

ppmv = parts per million by volume

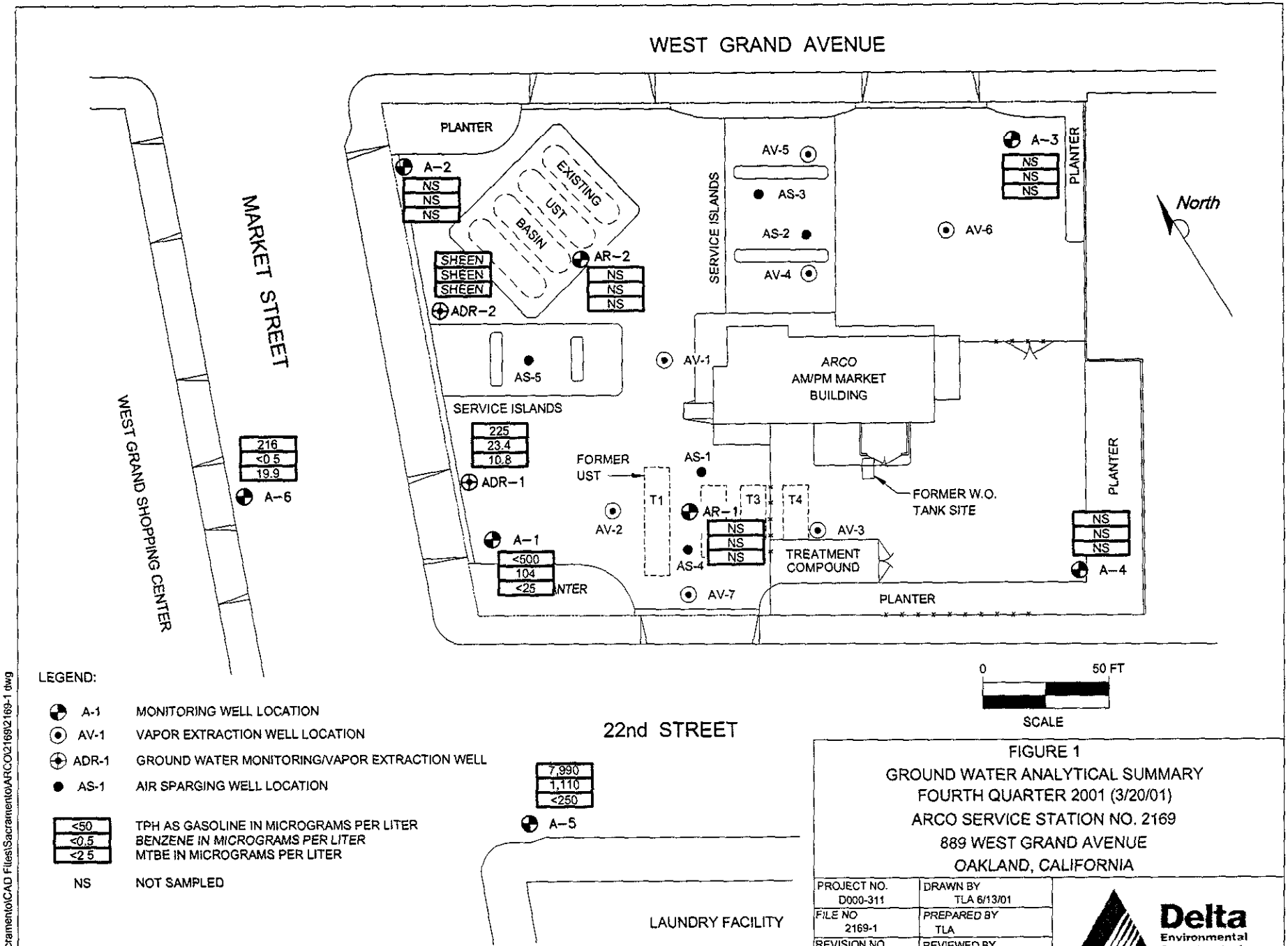
NS = Not sampled

NA = Not analyzed

NM = Not measured

[a] Methane reading from field flame ionization dectector reading

Please refer to Appendix B for Historical System Anallyticals



LEGEND:

A-1	MONITORING WELL LOCATION
AV-1	VAPOR EXTRACTION WELL LOCATION
ADR-1	GROUND WATER MONITORING/VAPOR EXTRACTION WELL
AS-1	AIR SPARGING 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

FIGURE 1
GROUND WATER ANALYTICAL SUMMARY
FOURTH QUARTER 2001 (3/20/01)
ARCO SERVICE STATION NO. 2169
889 WEST GRAND AVENUE
OAKLAND, CALIFORNIA

PROJECT NO. D000-311	DRAWN BY TLA 6/13/01
FILE NO 2169-1	PREPARED BY TLA
REVISION NO. 1	REVIEWED BY

Delta Environmental Consultants, Inc.

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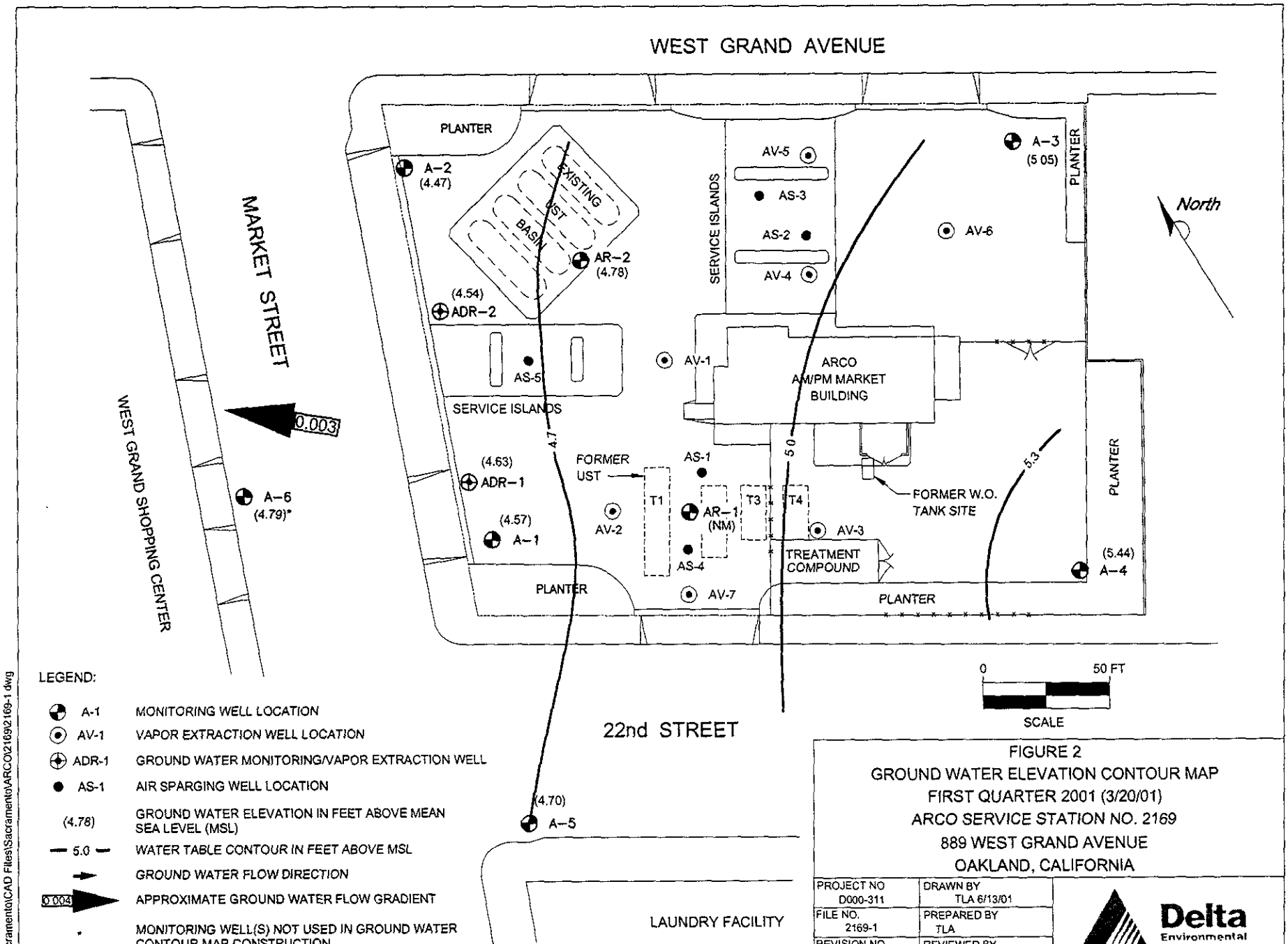

FIGURE 2
GROUND WATER ELEVATION CONTOUR MAP
FIRST QUARTER 2001 (3/20/01)
ARCO SERVICE STATION NO. 2169
889 WEST GRAND AVENUE
OAKLAND, CALIFORNIA

PROJECT NO D000-311	DRAWN BY TLA 6/13/01
FILE NO. 2169-1	PREPARED BY TLA
REVISION NO 1	REVIEWED BY

Delta Environmental Consultants, Inc.

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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
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1995 - Present***

ARCO Service Station 2169
889 West Grand Avenue, Oakland, California

Well Number	Date Gauged	TOC Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation (ft-MSL)	Date Sampled	TPH Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	TPH Diesel (µg/L)	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)
A-1	03-24-95	14.16	8.10	ND	6.06	03-24-95	1,200	230	39	34	66	--	--	160		
A-1	06-05-95	14.16	11.13	ND	3.03	06-05-95	1,500	310	27	36	76	--	--	710		
A-1	08-17-95	14.16	11.71	ND	2.45	08-18-95	1,600	470	35	48	110	120	--	240		
A-1	12-04-95	14.16	12.28	ND	1.88	12-04-95	1,200	240	17	25	56	--	120	--		
A-1	03-01-96	14.16	8.78	ND	5.38	03-13-96	1,300	300	74	29	73	100	--	--		
A-1	05-29-96	14.16	9.85	ND	4.31	05-29-96	Not sampled: well sampled semi-annually, during the first and third quarters									
A-1	08-29-96	14.16	11.08	ND	3.08	08-29-96	1,200	320	5.9	25	27	110	--	--		
A-1	11-21-96	14.16	10.54	ND	3.62	11-21-96	Not sampled: well sampled semi-annually, during the first and third quarters									
A-1	03-26-97	14.16	10.55	ND	3.61	03-26-97	<50	0.8	<0.5	<0.5	<0.5	64	--	--		
A-1	05-21-97	14.16	11.10	ND	3.06	05-21-97	Not sampled: well sampled semi-annually, during the first and third quarters									
A-1	08-08-97	14.16	11.32	ND	2.84	08-08-97	91	7	<0.5	0.5	3.9	<60	--	--		
A-1	11-18-97	14.16	3.46	ND	10.70	11-18-97	54	<0.5	<0.5	<0.5	0.6	27	--	--		
A-1	02-20-98	14.16	7.10	ND	7.06	02-23-98	590	160	22	15	28	70	--	--		
A-1	05-11-98	14.16	9.87	ND	4.29	05-11-98	280	26	<0.5	0.8	2.3	6	--	--		
A-1	07-30-98	14.16	10.73	ND	3.43	07-30-98	1,000	210	5	<5	38	<30	--	--		
A-1	10-08-98	14.16	11.15	ND	3.01	10-08-98	3,100	740	11	<10	24	<60	--	--		
A-1	02-18-99	14.16	8.00	ND	6.16	02-18-99	510	87	7.1	6.4	13	52	--	--		
A-1	05-26-99	14.16	10.60	ND	3.56	05-26-99	240	26	<0.5	1.2	6.2	34	--	--		
A-1	08-23-99	14.16	11.22	ND	2.94	08-23-99	79	3.9	0.6	<0.5	1.7	38	--	--	0.68	NP
A-1	10-27-99	14.16	11.37	ND	2.79	10-27-99	110	2.2	<0.5	<0.5	<1	25	--	--	0.80	NP
A-1	01-31-00	14.16	9.44	ND	4.72	01-31-00	<50	<0.5	<0.5	<0.5	<1	<3	--	--	1.0	NP
A-2	03-24-95	14.55	8.64	ND	5.91	03-24-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--		
A-2	06-05-95	14.55	11.72	ND	2.83	06-05-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--		
A-2	08-17-95	14.55	12.35	ND	2.20	08-17-95	<50	<0.5	<0.5	<0.5	<0.5	12	--	--		
A-2	12-04-95	14.55	12.74	ND	1.81	12-04-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--		
A-2	03-01-96	14.55	9.34	ND	5.21	03-13-96	<50	<0.5	0.6	<0.5	1.3	<9	--	--		

Table 1
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1995 - Present***

ARCO Service Station 2169
889 West Grand Avenue, Oakland, California

Well Number	Date Gauged	TOC Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation (ft-MSL)	Date Sampled	TPH Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	TPH Diesel (µg/L)	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)
A-2	05-29-96	14.55	10.40	ND	4.15	05-29-96	<50	<0.5	<0.5	<0.5	<0.5	<20	--	--		
A-2	08-29-96	14.55	11.50	ND	3.05	08-29-96	<50	<0.5	<0.5	<0.5	<0.5	<39	--	--		
A-2	11-21-96	14.55	11.06	ND	3.49	11-21-96	<50	<0.5	<0.5	<0.5	<0.5	<30	--	--		
A-2	03-26-97	14.55	11.12	ND	3.43	03-26-97	<50	<0.5	<0.5	<0.5	<0.5	<20	--	--		
A-2	05-21-97	14.55	11.58	ND	2.97	05-21-97	Not sampled: well sampled semi-annually, during the first and third quarters									
A-2	08-08-97	14.55	11.82	ND	2.73	08-08-97	<50	<0.5	<0.5	<0.5	<0.5	<20	--	--		
A-2	11-18-97	14.55	3.33	ND	11.22	11-18-97	Not sampled: well sampled semi-annually, during the first and third quarters									
A-2	02-20-98	14.55	7.68	ND	6.87	02-20-98	<50	<0.5	<0.5	<0.5	<0.5	17	--	--		
A-2	05-11-98	14.55	10.45	ND	4.10	05-11-98	Not sampled									
A-2	07-30-98	14.55	11.23	ND	3.32	07-30-98	Not sampled: well sampled semi-annually, during the first and second quarters									
A-2	10-08-98	14.55	11.62	ND	2.93	10-08-98	Not sampled: well sampled semi-annually, during the first and second quarters									
A-2	02-18-99	14.55	8.62	ND	5.93	02-18-99	93	<0.5	<0.5	<0.5	<1	26	--	--		
A-2	05-26-99	14.55	11.16	ND	3.39	05-26-99	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-2	08-23-99	14.55	11.69	ND	2.86	08-23-99	Not sampled: well sampled semi-annually, during the first and second quarters								0.59	
A-2	10-27-99	14.55	11.88	ND	2.67	10-27-99	Not sampled: well sampled semi-annually, during the first and second quarters								0.59	
A-2	01-31-00	14.55	10.17	ND	4.38	01-31-00	<50	<0.5	<0.5	<0.5	<1	<3	--	--	1.0	NP
A-3	03-24-95	15.75	8.83	ND	6.92	03-24-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--		
A-3	06-05-95	15.75	12.44	ND	3.31	06-05-95	Not sampled: well sampled annually									
A-3	08-17-95	15.75	13.04	ND	2.71	08-17-95	Not sampled: well sampled annually									
A-3	12-04-95	15.75	13.57	ND	2.18	12-04-95	Not sampled: well sampled annually									
A-3	03-01-96	15.75	9.90	ND	5.85	03-13-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-3	05-29-96	15.75	11.08	ND	4.67	05-29-96	Not sampled: well sampled annually									
A-3	08-29-96	15.75	12.38	ND	3.37	08-29-96	Not sampled: well sampled annually									
A-3	11-21-96	15.75	11.86	ND	3.89	11-21-96	Not sampled: well sampled annually									
A-3	03-26-97	15.75	11.81	ND	3.94	03-26-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-3	05-21-97	15.75	12.35	ND	3.40	05-21-97	Not sampled: well sampled annually									

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A-3	08-08-97	15.75	12.62	ND	3.13	08-08-97	Not sampled: well sampled annually									
A-3	11-18-97	15.75	3.75	ND	12.00	11-18-97	Not sampled: well sampled annually									
A-3	02-20-98	15.75	8.06	ND	7.69	02-20-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-3	05-11-98	15.75	11.19	ND	4.56	05-11-98	Not sampled: well sampled annually									
A-3	07-30-98	15.75	12.05	ND	3.70	07-30-98	Not sampled: well sampled annually									
A-3	10-08-98	15.75	12.43	ND	3.32	10-08-98	Not sampled: well sampled annually									
A-3	02-18-99	15.75	9.05	ND	6.70	02-18-99	Not sampled: well sampled annually									
A-3	05-26-99	15.75	11.93	ND	3.82	05-26-99	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-3	08-23-99	15.75	12.57	ND	3.18	08-23-99	Not sampled: well sampled annually								0.88	
A-3	10-27-99	15.75	12.65	ND	3.10	10-27-99	Not sampled: well sampled annually									
A-3	01-31-00	15.75	9.55	ND	6.20	01-31-00	<50	<0.5	<0.5	<0.5	<1	9	--	--	1.0	NP
A-4	03-24-95	15.25	7.20	ND	8.05	03-24-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--		
A-4	06-05-95	15.25	11.70	ND	3.55	06-05-95	Not sampled: well sampled annually									
A-4	08-17-95	15.25	12.28	ND	2.97	08-17-95	Not sampled: well sampled annually									
A-4	12-04-95	15.25	12.63	ND	2.62	12-04-95	Not sampled: well sampled annually									
A-4	03-01-96	15.25	8.55	ND	6.70	03-13-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-4	05-29-96	15.25	10.32	ND	4.93	05-29-96	Not sampled: well sampled annually									
A-4	08-29-96	15.25	11.55	ND	3.70	08-29-96	Not sampled: well sampled annually									
A-4	11-21-96	15.25	10.83	ND	4.42	11-21-96	Not sampled: well sampled annually									
A-4	03-26-97	15.25	10.97	ND	4.28	03-26-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-4	05-21-97	15.25	11.51	ND	3.74	05-21-97	Not sampled: well sampled annually									
A-4	08-08-97	15.25	11.73	ND	3.52	08-08-97	Not sampled: well sampled annually									
A-4	11-18-97	15.25	4.37	ND	10.88	11-18-97	Not sampled: well sampled annually									
A-4	02-20-98	15.25	6.25	ND	9.00	02-20-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-4	05-11-98	15.25	10.33	ND	4.92	05-11-98	Not sampled: well sampled annually									
A-4	07-30-98	15.25	11.25	ND	4.00	07-30-98	Not sampled: well sampled annually									

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A-4	10-08-98	15.25	11.62	ND	3.63	10-08-98	Not sampled: well sampled annually									
A-4	02-18-99	15.25	7.12	ND	8.13	02-18-99	Not sampled: well sampled annually									
A-4	05-26-99	15.25	11.12	ND	4.13	05-26-99	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-4	08-23-99	15.25	11.62	ND	3.63	08-23-99	Not sampled: well sampled annually								0.54	
A-4	10-27-99	15.25	11.74	ND	3.51	10-27-99	Not sampled: well sampled annually									
A-4	01-31-00	15.25	9.45	ND	5.80	01-31-00	<50	<0.5	<0.5	<0.5	<1	4	--	--	1.0	NP
A-5	03-24-95	13.51	7.40	ND	6.11	03-24-95	3,300	200	310	130	460	--	--	--		
A-5	06-05-95	13.51	10.43	ND	3.08	06-05-95	57,000	2,700	4,600	1,500	6,800	--	--	--		
A-5	08-17-95	13.51	11.15	ND	2.36	08-18-95	34,000	1,600	2,700	1,100	5,100	<28	--	--		
A-5	12-04-95	13.51	11.42	ND	2.09	12-04-95	61	<0.5	<0.5	<0.5	<0.5	--	--	--		
A-5	03-01-96	13.51	8.11	ND	5.40	03-13-96	11,000	860	960	380	1,600	<100	--	--		
A-5	05-29-96	13.51	9.30	ND	4.21	05-29-96	19,000	1,600	1,900	880	3,300	<100	--	--		
A-5	08-29-96	13.51	10.60	ND	2.91	08-29-96	7,700	490	450	260	990	<30	--	--		
A-5	11-21-96	13.51	10.05	ND	3.46	11-21-96	8,000	450	550	340	1,100	<30	--	--		
A-5	03-26-97	13.51	9.87	ND	3.64	03-26-97	3,100	190	140	130	340	<30	--	--		
A-5	05-21-97	13.51	10.25	ND	3.26	05-21-97	16,000	1,500	900	700	2,700	<120	--	--		
A-5	08-08-97	13.51	10.42	ND	3.09	08-08-97	9,000	690	240	440	1,300	<30	--	--		
A-5	11-18-97	13.51	Not surveyed: well inaccessible													
A-5	02-20-98	13.51	Not surveyed: well inaccessible													
A-5	05-11-98	13.51	Not surveyed: well inaccessible													
A-5	07-30-98	13.51	Not surveyed: well inaccessible													
A-5	10-08-98	13.51	Not surveyed: well inaccessible													
A-5	02-18-99	13.51	7.63	ND	5.88	02-18-99	<50	0.8	<0.5	<0.5	1.5	<10	--	--		
A-5	05-26-99	13.51	9.85	ND	3.66	05-26-99	1,700	240	41	110	330	<12	--	--		
A-5	08-23-99	13.51	10.60	ND	2.91	08-23-99	560	65	3	30	52	<6	--	--	0.73	NP
A-5	10-27-99	13.51	10.72	ND	2.79	10-27-99	480	93	1.0	16	19	<3	--	--	0.65	NP

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A-5	01-31-00	13.51	9.37	ND	4.14	01-31-00	Not sampled: well was inaccessible									
A-6	03-24-95	13.51	7.89	ND	5.62	03-24-95	120	<0.5	<1	<0.5	<1.5	--	--	--		
A-6	06-05-95	13.51	10.06	ND	3.45	06-05-95	160	<0.5	<0.6	<0.5	<0.5	--	--	--		
A-6	08-17-95	13.51	11.10	ND	2.41	08-18-95	530	<0.5	<0.5	<2.4	<4.2	6	--	--		
A-6	12-04-95	13.51	11.52	ND	1.99	12-04-95	28,000	1,600	1,800	880	3,600	--	--	--		
A-6	03-01-96	13.51	8.21	ND	5.30	03-13-96	1,400	<3	<15	<7	<10	<20	--	--		
A-6	05-29-96	13.51	9.25	ND	4.26	05-29-96	410	<2	<2	<2	<2	3	--	--		
A-6	08-29-96	13.51	10.52	ND	2.99	08-29-96	80	<0.5	<0.5	<0.5	<0.5	6	--	--		
A-6	11-21-96	13.51	10.54	ND	2.97	11-21-96	62	<0.5	<0.5	<0.5	<0.5	12	--	--		
A-6	03-26-97	13.51	9.93	ND	3.58	03-26-97	110	<0.5	0.8	1	1.4	15	--	--		
A-6	05-21-97	13.51	10.54	ND	2.97	05-21-97	600	0.6	0.6	<2	2.7	<3	--	--		
A-6	08-08-97	13.51	10.77	ND	2.74	08-08-97	850	<0.5	<0.5	6.1	<0.5	<4	--	--		
A-6	11-18-97	13.51	3.41	ND	10.10	11-18-97	690	<1	<1	3	2	7	--	--		
A-6	02-20-98	13.51	6.73	ND	6.78	02-20-98	60	<0.5	0.6	1.3	0.5	4	--	--		
A-6	05-11-98	13.51	9.26	ND	4.25	05-11-98	140	<0.5	0.7	0.6	<0.5	6	--	--		
A-6	07-30-98	13.51	10.12	ND	3.39	07-30-98	910	<2	<2	3	7	34	--	--		
A-6	10-08-98	13.51	10.53	ND	2.98	10-08-98	1,300	<2	4	3	4	21	--	--		
A-6	02-18-99	13.51	7.50	ND	6.01	02-18-99	150	<0.5	<0.5	1.4	1.7	35	--	--		
A-6	05-26-99	13.51	10.00	ND	3.51	05-26-99	100	<0.5	<0.5	<0.5	<0.5	17	--	--		
A-6	08-23-99	13.51	10.70	ND	2.81	08-23-99	98	0.6	<0.5	1.1	4.3	13	--	--	2.42	NP
A-6	10-27-99	13.51	11.00	ND	2.51	10-27-99	<50	<0.5	<0.5	<0.5	<1	7	--	--	13.23	NP
A-6	01-31-00	13.51	9.31	ND	4.20	01-31-00	<50	<0.5	<0.5	<0.5	<1	9	--	--	1.0	NP
AR-1	03-24-95	15.61	7.25	ND	8.36	03-24-95	270	14	0.6	2.5	2.1	--	--	130		
AR-1	06-05-95	15.61	11.37	ND	4.24	06-05-95	190	10	<0.5	0.8	0.5	--	--	580		
AR-1	08-17-95	15.61	12.40	ND	3.21	08-17-95	960	110	12	4.5	150	14	--	<50		

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AR-1	12-04-95	15.61	12.90	ND	2.71	12-04-95	<50	1.5	<0.5	<0.5	0.8	--	--	--		
AR-1	03-01-96	15.61	8.19	ND	7.42	03-13-96	150	3.8	0.5	1.4	1.3	<3	--	--		
AR-1	05-29-96	15.61	10.41	ND	5.20	05-29-96	Not sampled: well sampled semi-annually, during the first and third quarters									
AR-1	08-29-96	15.61	12.12	ND	3.49	08-29-96	<50	<0.5	<0.5	<0.5	0.8	<3	--	--		
AR-1	11-21-96	15.61	11.52	ND	4.09	11-21-96	Not sampled: well sampled semi-annually, during the first and third quarters									
AR-1	03-26-97	15.61	11.33	ND	4.28	03-26-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
AR-1	05-21-97	15.61	12.02	ND	3.59	05-21-97	Not sampled: well sampled semi-annually, during the first and third quarters									
AR-1	08-08-97	15.61	12.31	ND	3.30	08-08-97	<50	0.7	<0.5	1	<0.5	<3	--	--		
AR-1	11-18-97	15.61	3.97	ND	11.64	11-18-97	Not sampled: well sampled semi-annually, during the first and third quarters									
AR-1	02-20-98	15.61	6.42	ND	9.19	02-23-98	<200	<2	<2	<2	<2	160	--	--		
AR-1	05-11-98	15.61	10.93	ND	4.68	05-11-98	<50	<0.5	<0.5	<0.5	<0.5	4	--	--		
AR-1	07-30-98	15.61	11.82	ND	3.79	07-30-98	<50	<0.5	<0.5	<0.5	<0.5	6	--	--		
AR-1	10-08-98	15.61	12.24	ND	3.37	10-08-98	<50	<0.5	<0.5	<0.5	<0.5	6	--	--		
AR-1	02-18-99	15.61	7.75	ND	7.86	02-18-99	<50	<0.5	<0.5	<0.5	<1 0	<10	--	--		
AR-1	05-26-99	15.61	11.62	ND	3.99	05-26-99	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
AR-1	08-23-99	15.61	9.32	ND	6.29	08-23-99	Not sampled: well sampled semi-annually, during the first and second quarters									
AR-1	10-27-99	15.61	12.14	ND	3.47	10-27-99	Not sampled: well sampled semi-annually, during the first and second quarters									
AR-1	01-31-00	15.61	Not surveyed: well inaccessible													
AR-2	03-24-95	15.28	9.13	ND	6.15	03-24-95	<50	6.2	<0.5	<0.5	0.6	--	--	<50		
AR-2	06-05-95	15.28	12.09	ND	3.19	06-05-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	<50		
AR-2	08-17-95	15.28	12.78	ND	2 50	08-18-95	<50	<0.5	<0.5	<0.5	<0.5	4	--	<50		
AR-2	12-04-95	15.28	11.44	ND	3.84	12-13-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--		
AR-2	03-01-96	15.28	9.83	ND	5.45	03-13-96	190	26	2.6	3.3	13	200	--	--		
AR-2	05-29-96	15.28	10.97	ND	4.31	05-29-96	Not sampled: well sampled semi-annually, during the first and third quarters									
AR-2	08-29-96	15.28	12.20	ND	3.08	08-29-96	<50	<0.5	<0.5	<0.5	<0.5	95	--	--		
AR-2	11-21-96	15.28	11.57	ND	3.71	11-21-96	Not sampled: well sampled semi-annually, during the first and third quarters									

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AR-2	03-26-97	15.28	11.60	ND	3.68	03-26-97	<50	<0.5	<0.5	<0.5	<0.5	9	--	--		
AR-2	05-21-97	15.28	12.12	ND	3.16	05-21-97	Not sampled: well sampled semi-annually, during the first and third quarters									
AR-2	08-08-97	15.28	12.35	ND	2.93	08-08-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
AR-2	11-18-97	15.28	3.48	ND	11.80	11-18-97	Not sampled: well sampled semi-annually, during the first and third quarters									
AR-2	02-20-98	15.28	8.00	ND	7.28	02-20-98	<50	<0.5	<0.5	<0.5	<0.5	43	--	--		
AR-2	05-11-98	15.28	10.97	ND	4.31	05-11-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
AR-2	07-30-98	15.28	11.76	ND	3.52	07-30-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
AR-2	10-08-98	15.28	12.17	ND	3.11	10-08-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
AR-2	02-18-99	15.28	9.17	ND	6.11	02-18-99	<50	<0.5	<0.5	<0.5	<1.0	<10	--	--		
AR-2	05-26-99	15.28	11.72	ND	3.56	05-26-99	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
AR-2	08-23-99	15.28	12.31	ND	2.97	08-23-99	Not sampled: well sampled semi-annually, during the first and second quarters								0.61	
AR-2	10-27-99	15.28	12.42	ND	2.86	10-27-99	Not sampled: well sampled semi-annually, during the first and second quarters									
AR-2	01-31-00	15.28	10.31	ND	4.97	01-31-00	Not sampled									
ADR-1	03-24-95	13.95	8.04	0.01	** 5.92	03-24-95	Not sampled: well contained floating product									
ADR-1	06-05-95	13.95	11.02	ND	2.93	06-05-95	23,000	310	420	300	1,900	--	--	13,000		
ADR-1	08-17-95	13.95	11.86	ND	2.09	08-18-95	4,400	150	120	95	620	120	--	4,500		
ADR-1	12-04-95	13.95	10.05	ND	3.90	12-13-95	8,800	100	130	120	990	--	--	--		
ADR-1	03-01-96	13.95	8.76	ND	5.19	03-13-96	89,000	370	1,000	840	8,100	<500	--	--		
ADR-1	05-29-96	13.95	9.74	ND	4.21	05-30-96	27,000	230	380	370	2,700	<100	--	--		
ADR-1	08-29-96	13.95	10.77	ND	3.18	08-29-96	5,300	190	58	76	470	85	--	--		
ADR-1	11-21-96	13.95	10.49	ND	3.46	11-21-96	1,900	82	21	32	270	110	--	--		
ADR-1	03-26-97	13.95	10.37	ND	3.58	03-26-97	1,300	260	6	39	27	95	--	--		
ADR-1	05-21-97	13.95	10.90	ND	3.05	05-21-97	2,100	300	18	37	200	79	--	--		
ADR-1	08-08-97	13.95	11.12	ND	2.83	08-08-97	3,900	620	49	110	470	<200	--	--		
ADR-1	11-18-97	13.95	3.47	ND	10.48	11-18-97	18,000	900	140	360	2,700	<60	--	--		
ADR-1	02-20-98	13.95	Not surveyed: well inaccessible													

Table 1
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1995 - Present***

ARCO Service Station 2169
889 West Grand Avenue, Oakland, California

Well Number	Date Gauged	TOC Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation (ft-MSL)	Date Sampled	TPH Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	TPH Diesel (µg/L)	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)
ADR-1	05-11-98	13.95	Not surveyed: well inaccessible													
ADR-1	07-30-98	13.95	Not surveyed: well inaccessible													
ADR-1	10-08-98	13.95	Not surveyed: well inaccessible													
ADR-1	02-18-99	13.95	7.80	ND	6.15	02-18-99	200	4.4	<0.5	1.3	1.3	43	--	--		
ADR-1	05-26-99	13.95	10.40	ND	3.55	05-26-99	160	10	<0.5	1.7	1.8	43	--	--		
ADR-1	08-23-99	13.95	10.70	ND	3.25	08-23-99	7,400	310	16	210	970	18	--	--	0.37	NP
ADR-1	10-27-99	13.95	10.82	ND	3.13	10-27-99	5,000	210	6.3	180	490	5	--	--	0.73	NP
ADR-1	01-31-00	13.95	9.21	ND	4.74	01-31-00	290	3.6	<0.5	1.1	<1	26	--	--	1.0	NP
ADR-2	03-24-95	14.64	8.41	>3.00	NR[1]	03-24-95	Not sampled: well contained floating product									
ADR-2	06-05-95	14.64	11.45	>3.00	NR[1]	06-05-95	Not sampled: well contained floating product									
ADR-2	08-17-95	14.64	12.10	0.03	** 2.56	08-17-95	Not sampled: well contained floating product									
ADR-2	12-04-95	14.64	10.93	0.03	** 3.73	12-13-95	Not sampled: well contained floating product									
ADR-2	03-01-96	14.64	8.74	ND	5.90	03-13-96	29,000	1,100	1,200	710	3,800	<500	--	--		
ADR-2	05-29-96	14.64	10.43	ND	4.21	05-29-96	33,000	510	500	470	2,300	120	--	--		
ADR-2	08-29-96	14.64	11.64	ND	3.00	08-29-96	8,000	230	180	150	730	53	--	--		
ADR-2	11-21-96	14.64	11.23	ND	3.41	11-21-96	15,000	630	440	390	2,100	75	--	--		
ADR-2	03-26-97	14.64	11.13	ND	3.51	03-26-97	6,100	320	23	180	400	32	--	--		
ADR-2	05-21-97	14.64	11.64	ND	3.00	05-21-97	6,100	380	22	210	320	<30	--	--		
ADR-2	08-08-97	14.64	11.85	ND	2.79	08-08-97	8,400	380	35	230	910	<30	--	--		
ADR-2	11-18-97	14.64	3.33	ND	11.31	11-18-97	11,000	230	29	300	1,200	<60	--	--		
ADR-2	02-20-98	14.64	7.67	ND	6.97	02-20-98	4,700	320	30	130	360	20	--	--		
ADR-2	05-11-98	14.64	10.47	ND	4.17	05-11-98	Not sampled									
ADR-2	07-30-98	14.64	Not surveyed: well inaccessible													
ADR-2	10-08-98	14.64	11.67	ND	2.97	10-08-98	Not sampled									
ADR-2	02-18-99	14.64	Not surveyed: well inaccessible													
ADR-2	05-26-99	14.64	11.02	ND	3.62	05-26-99	5,900	670	5	340	104	16	--	--		

Table 1
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1995 - Present***

ARCO Service Station 2169
889 West Grand Avenue, Oakland, California

Well Number	Date Gauged	TOC Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation (ft-MSL)	Date Sampled	TPH Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	TPH Diesel (µg/L)	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)
ADR-2	08-23-99	14.64	9.82	ND	4.82	08-23-99	9,100	570	12	410	1,000	28	--	--	0.50	NP
ADR-2	10-27-99	14.64	9.85	Sheen	4.79	10-27-99	Not sampled: sheen present								0.65	NP
ADR-2	01-31-00	14.64	10.15	ND	4.49	01-31-00	7,700	280	3.4	370	390	23	--	--	2.0	NP

TOC: top of casing
ft-MSL: elevation in feet, relative to mean sea level
TPH: total petroleum hydrocarbons, California DHS LUFT Method
BTEX: benzene, toluene, ethylbenzene, total xylenes by EPA method 8021B. (EPA method 8020 prior to 10/27/99).
MTBE: *Methyl tert-butyl ether*
µg/L: micrograms per liter
mg/L: milligrams per liter
ND: none detected
NR: not reported; data not available or not measurable
-- : not analyzed or not applicable
<: denotes concentration not present at or above laboratory detection limit stated to the right.
[1]: well contained more than 3 feet of floating product; exact product thickness and groundwater elevation could not be measured
*: EPA method 8020 prior to 10/27/99
**: [corrected elevation (Z')] = Z + (h * 0.73) where: Z = measured elevation, h = floating product thickness, 0.73 = density ratio of oil to water
***: For previous historical groundwater elevation data please refer to *Fourth Quarter 1995 Groundwater Monitoring Program Results and Remediation System Performance Evaluation Report, ARCO Service Station 2169, 889 West Grand Avenue, Oakland, California, (EMCON, March 4, 1996).*

Table 2
Groundwater Flow Direction and Gradient

ARCO Service Station 2169
889 West Grand Avenue, Oakland, California

Date Measured	Average Flow Direction	Average Hydraulic Gradient
03-24-95	Northwest	0.009
06-05-95	Northwest	0.002
08-17-95	West	0.001
12-04-95	North-Northwest	0.002
03-01-96	Northwest	0.003
05-29-96	Northwest	0.002
08-29-96	West	0.002
11-21-96	West-Northwest	0.002
03-26-97	Northwest	0.002
05-21-97	North-Northwest	0.002
08-08-97	North-Northwest	0.002
11-18-97	North-Northwest	0.003
02-20-98	North	0.013
05-11-98	North	0.03
07-30-98	North	0.002
10-08-98	North-Northwest	0.002
02-18-99	Northwest	0.008
05-26-99	North-Northwest	0.003
08-23-99	Variable	Variable
10-27-99	Variable	Variable
01-31-00	**West-Northwest**	**0.006**

Table 3
Soil Vapor Extraction System
Operational Uptime Information (1998 - present)
Arco Service Station No. 2169
889 West Grand Avenue, Oakland, California

Date	Meter (hrs.)	Operation (hrs.)	Period Operation				Cumulative Operation			
			Total (days)	Uptime (days)	Downtime (days)	Uptime (%)	Total (days)	Uptime (days)	Downtime (days)	Uptime (%)
04/01/98[1]	7365.55	6909.60					1399	287.9	1111.1	21%
04/15/98	7365.55	6909.60								
06/22/98	7365.78	6909.83	68	0.0	68.0	0%	1467	287.9	1179.1	20%
08/20/98	7365.78	6909.83	59	0.0	59.0	0%	1526	287.9	1238.1	19%
10/07/98	7366.69	6910.74	48	0.0	48.0	0%	1574	287.9	1286.1	18%
10/08/98	7392.07	6936.12	1	1	0	100%	1575	289.0	1286.0	18%
10/30/98	7752.82	7296.87	22	15.0	7.0	68%	1597	304.0	1293.0	19%
11/18/98	7755.18	7299.23	19	0.1	18.9	1%	1616	304.1	1311.9	19%
11/25/98	7869.69	7413.74	7	4.8	2.2	68%	1623	308.9	1314.1	19%
12/08/98	8182.76	7726.81	13	13.0	0.0	100%	1636	322.0	1314.0	20%
02/05/99	8183.26	7727.31	59	0.0	59.0	0%	1695	322.0	1373.0	19%
03/19/99	8183.56	7727.61	42	0.0	42.0	0%	1737	322.0	1415.0	19%
04/27/99	8183.56	7727.61	39	0.0	39.0	0%	1776	322.0	1454.0	18%
06/21/99	8183.88	7727.93	55	0.0	55.0	0%	1831	322.0	1509.0	18%
06/24/99	8260.48	7804.53	3	3	0	106%	1834	325.2	1508.8	18%
08/19/99	8260.48	7804.53	56	0	56	0%	1890	325.2	1564.8	17%
08/25/99	8360.47	7904.52	6	4	2	69%	1896	329.4	1566.6	17%
09/08/99	8695.25	8239.3	14	14	0	100%	1910	343.3	1566.7	18%
09/09/99	8706.53	8250.58	1	0	1	47%	1911	343.8	1567.2	18%
09/21/99	8994.92	8538.97	12	12	0	100%	1923	355.8	1567.2	19%
10/05/99	9331.19	8875.24	14	14	0	100%	1937	369.8	1567.2	19%
10/19/99	9667.61	9211.66	14	14	0	100%	1951	383.8	1567.2	20%
11/03/99	10026.92	9570.97	15	15	0	100%	1966	398.8	1567.2	20%
11/17/99	10364.01	9908.06	14	14	0	100%	1980	412.8	1567.2	21%
12/01/99	10699.82	10243.87	14	14	0	100%	1994	426.8	1567.2	21%
12/16/99	11059.81	10603.86	15	15	0	100%	2009	441.8	1567.2	22%
01/05/00	11060.05	10604.1	20	0	20	0%	2029	441.8	1587.2	22%

[1] Operational data through 04/01/98 from First Quarter 1998 Quarterly Monitoring Report

Table 4
Soil Vapor Extraction System
Flow Rates and Analytical Results of Air Samples (1998 - present)

Arco Service Station No. 2169
889 West Grand Avenue, Oakland, California

Date	Sample Location	Vacuum (in. H20)	Velocity (fpm)	Flowrate[1] (scfm)	Analyses (ppmv)					
					TPHG	Benzene	Toulene	Ethylbenzene	Xylene	MTBE
10/08/98	Influent	21.2	750	35	190	<0.1	<0.1	<0.1	0.2	
	Effluent[2]		3600	274.2	<5	<0.1	<0.1	<0.1	<0.2	
11/18/98	Influent	21	900	42	83	<0.1	0.4	0.4	0.9	
	Effluent		3300	253.4	<5	<0.1	<0.1	<0.1	<0.2	
12/08/98	Influent	25	1100	51	12	<0.1	0.3	<0.1	0.2	<0.8
	Effluent		3100	238.0	6	<0.1	0.3	<0.1	0.2	<0.8
06/21/99	Influent	40	1000	44	20	0.1	0.1	<0.1	<0.2	<0.8
	Effluent		2500	192.0	<5	<0.1	<0.1	<0.1	<0.2	<0.8
08/19/99	Influent	39.2	800	35	180	6.9	0.9	0.15	0.32	5.5
	Effluent		2800	215.0	<2.4	0.05	<0.013	<0.012	0.03	0.13
09/08/99	Influent	50.2	1500	65	71	0.2	0.2	0.2	0.9	1.1
	Effluent		2300	176.6	<5	<0.1	<0.1	<0.1	<0.2	<0.8
10/05/99	Influent	59	1700	71	42	0.3	<0.1	<0.1	0.3	<0.8
	Effluent		2300	176.6	<5	<0.1	0.1	<0.1	<0.2	<0.8
11/03/99	Influent	50	1700	73	240	<0.1	0.2	0.2	3.9	1.3
	Effluent		2200	168.9	<5	<0.1	<0.1	<0.1	<0.2	<0.8
12/01/99	Influent	50.1	1000	43	180	0.2	0.1	<0.1	2.3	<0.8
	Effluent		1250	96.0	<5	<0.1	0.2	<0.1	<0.2	<0.8

[1] Influent Flow Rate, cfm = (Velocity, fpm)(Influent Pipe Area, sq. ft.)(406.8 in.H20 - Vacuum, in.H20) / (406.8 in.H20)
where Influent Pipe Diameter = 3"
Effluent Flow Rate, cfm = (Velocity, fpm)(Effluent Pipe Area, sq.ft.)[(460° R + 77° F)/(460° R + Vapor Temp F)]
where Effluent (after blower) Pipe Diameter = 4"

[2] *Dilution air only*

Table 5
Soil Vapor Extraction System
Extraction Rates, Emission Rates, Destruction Efficiency, and Mass Removed
(1998 - present)

Arco Service Station No. 2169
889 West Grand Avenue, Oakland, California

Date End	Extraction Rate from Wellfield[1]		Emission Rate to Atmosphere[2]		Destruction Efficiency[3]		Period Removal[4]		Cumulative Removal	
	TPHG (lbs/day)	Benzene (lbs/day)	TPHG (lbs/day)	Benzene (lbs/day)	TPHG (%)	Benzene (%)	TPHG (lbs)	Benzene (lbs)	TPHG (lbs)	Benzene (lbs)
04/01/98[5]									8582.1	0
10/08/98	2.4351	0.0	<0.5037	<0.0079	Waived		39.5329	0	8621.6	0
11/18/98	1.2772	0.0	<0.4655	<0.0073	Waived		22.7538	0	8644.4	0
12/08/98	0.2233	0.0	0.5248	<0.0068	Waived		0.0104	0	8644.4	0
06/21/99	0.3251	0.0013	<0.3527	<0.0055	Waived		1.0376	0.0041	8645.4	0.0041
08/19/99	2.3459	0.0702	<0.1896	<0.0031	Waived		42.4964	1.2723	8687.9	1.2763
09/08/99	1.6830	0.0037	<0.3245	<0.0051	Waived		21.0150	0.0462	8708.9	1.3226
10/05/99	1.1005	0.0061	<0.3245	<0.0051	Waived		30.8459	0.1721	8739.8	1.4946
11/03/99	6.4514	0.0021	<0.3104	<0.0048	Waived		187.1967	0.0609	8927.0	1.5555
12/01/99	2.8454	0.0025	<0.1763	<0.0028	Waived		82.5210	0.0716	9009.5	1.6272

[1] Extraction Rate, lbs/day = (Influent Flow, cfm)(Influent conc., ppmv)(g/mole)(60 min/hr)(24 hr/day)(28.3 L/cf) / (10^6)(24.45 moles/L)(453.6 g/lb)
where TPHG = 100 g/mole and Benzene = 78.1 g/mole; Influent conc. = 0, if reported as non-detect

[2] Emission Rate, lbs/day = (Effluent Flow, cfm)(Effluent conc., ppmv)(g/mole)(60 min/hr)(24 hr/day)(28.3 L/cf) / (10^6)(24.45 moles/L)(453.6 g/lb)
where TPHG = 100 g/mole and Benzene = 78.1 g/mole; Effluent conc. = Method Reporting Limit, if reported as non-detect

[3] Destruction Efficiency, % = (Extraction Rate - Emission Rate)(100) / (Extraction Rate); "Waived"= if TPHG emissions <1.0 lbs/day and Benzene emissions <0.02 lbs/day

[4] Period Removal, lbs = (Extraction Rate)(Uptime)

[5] Operational data through 4/1/98 from First Quarter 1998 Quarterly Monitoring Report

APPPENDIX C

Certified Analytical Reports
And
Chain-of-Custody Documentation

Sequoia Analytical

819 Striker Avenue, Suite 8
Sacramento, CA 95834
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March 26 , 2001

Steven Meeks
Delta Environmental Consultants(Rancho Cordova
3164 Gold Camp Drive Ste. 200
Rancho Cordova, CA 95670
RE: ARCO 2169, Oakland, CA / S103346

Enclosed are the results of analyses for samples received by the laboratory on 03/20/01. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sandra R Hanson
for

Ron Chew
Client Services Representative

Lito Diaz
Laboratory Director

CA ELAP Certificate Number 1624

Sequoia Analytical

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Delta Environmental Consultants(Rancho Cordova	Project: ARCO 2169, Oakland, CA	
3164 Gold Camp Drive Ste. 200	Project Number: N/A	Reported:
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	03/26/01 09:51

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
A-1-9'	S103346-01	Water	03/20/01 09:28	03/20/01 12:05
A-5-8'	S103346-02	Water	03/20/01 08:36	03/20/01 12:05
A-6-8'	S103346-03	Water	03/20/01 08:21	03/20/01 12:05
ADR-1-9'	S103346-04	Water	03/20/01 09:23	03/20/01 12:05

Sequoia Analytical

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Delta Environmental Consultants(Rancho Cordova	Project: ARCO 2169, Oakland, CA	
3164 Gold Camp Drive Ste. 200	Project Number: N/A	Reported:
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	03/26/01 09:51

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-1-9' (S103346-01) Water Sampled: 03/20/01 09:28 Received: 03/20/01 12:05									
Purgeable Hydrocarbons	ND	500	ug/l	10	1030336	03/24/01	03/24/01	DHS LUFT	
Benzene	**104**	5.00	"	"	"	"	"	"	
Toluene	**7.12**	5.00	"	"	"	"	"	"	
Ethylbenzene	**13.9**	5.00	"	"	"	"	"	"	
Xylenes (total)	**23.2**	5.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	25.0	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*106 %*	*60-140*		"	"	"	"	
A-5-8' (S103346-02) Water Sampled: 03/20/01 08:36 Received: 03/20/01 12:05									
Purgeable Hydrocarbons	**7990**	5000	ug/l	100	1030338	03/23/01	03/23/01	DHS LUFT	P-02
Benzene	**1110**	50.0	"	"	"	"	"	"	
Toluene	**473**	50.0	"	"	"	"	"	"	
Ethylbenzene	**611**	50.0	"	"	"	"	"	"	
Xylenes (total)	**1580**	50.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*87.8 %*	*60-140*		"	"	"	"	
A-6-8' (S103346-03) Water Sampled: 03/20/01 08:21 Received: 03/20/01 12:05									
Purgeable Hydrocarbons	**216**	50.0	ug/l	1	1030338	03/23/01	03/23/01	DHS LUFT	P-03
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	**1.80**	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	**19.9**	2.50	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*88.4 %*	*60-140*		"	"	"	"	

Sequoia Analytical

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Delta Environmental Consultants(Rancho Cordova	Project: ARCO 2169, Oakland, CA	
3164 Gold Camp Drive Ste. 200	Project Number: N/A	Reported:
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	03/26/01 09:51

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
ADR-1-9' (S103346-04) Water Sampled: 03/20/01 09:23 Received: 03/20/01 12:05									
Purgeable Hydrocarbons	**225**	50.0	ug/l	1	1030338	03/23/01	03/23/01	DHS LUFT	P-02
Benzene	**23.4**	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	**8.71**	0.500	"	"	"	"	"	"	
Xylenes (total)	**4.13**	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	**10.8**	2.50	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*93.8 %*	*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	03/26/01 09:51

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 1030336 - EPA 5030B (P/T)										
Blank (1030336-BLK1)				Prepared & Analyzed: 03/24/01						
Purgeable Hydrocarbons	ND	50.0	ug/l							
Benzene	ND	0.500	"							
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	0.500	"							
Methyl tert-butyl ether	ND	2.50	"							
Surrogate: a,a,a-Trifluorotoluene	*10.4*		"	*10.0*		*104*	*60-140*			
LCS (1030336-BS1)				Prepared & Analyzed: 03/24/01						
Benzene	9.96	0.500	ug/l	10.0		99.6	70-130			
Toluene	10.4	0.500	"	10.0		104	70-130			
Ethylbenzene	10.8	0.500	"	10.0		108	70-130			
Xylenes (total)	28.3	0.500	"	30.0		94.3	70-130			
Methyl tert-butyl ether	10.4	2.50	"	10.0		104	70-130			
Surrogate: a,a,a-Trifluorotoluene	*11.0*		"	*10.0*		*110*	*60-140*			
Matrix Spike (1030336-MS1)	**Source: S103348-12**			Prepared & Analyzed: 03/24/01						
Benzene	9.36	0.500	ug/l	10.0	ND	93.6	60-140			
Toluene	9.73	0.500	"	10.0	ND	97.3	60-140			
Ethylbenzene	10.3	0.500	"	10.0	ND	103	60-140			
Xylenes (total)	26.9	0.500	"	30.0	ND	89.7	60-140			
Methyl tert-butyl ether	8.66	2.50	"	10.0	ND	86.6	60-140			
Surrogate: a,a,a-Trifluorotoluene	*10.4*		"	*10.0*		*104*	*60-140*			
Matrix Spike Dup (1030336-MSD1)	**Source: S103348-12**			Prepared & Analyzed: 03/24/01						
Benzene	8.97	0.500	ug/l	10.0	ND	89.7	60-140	4.26	25	
Toluene	9.40	0.500	"	10.0	ND	94.0	60-140	3.45	25	
Ethylbenzene	9.87	0.500	"	10.0	ND	98.7	60-140	4.26	25	
Xylenes (total)	25.6	0.500	"	30.0	ND	85.3	60-140	4.95	25	
Methyl tert-butyl ether	8.59	2.50	"	10.0	ND	85.9	60-140	0.812	25	
Surrogate: a,a,a-Trifluorotoluene	*9.98*		"	*10.0*		*99.8*	*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	03/26/01 09:51

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 1030338 - EPA 5030B (P/T)										
Blank (1030338-BLK1)				Prepared & Analyzed: 03/23/01						
Purgeable Hydrocarbons	ND	50.0	ug/l							
Benzene	ND	0.500	"							
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	0.500	"							
Methyl tert-butyl ether	ND	2.50	"							
Surrogate: a,a,a-Trifluorotoluene	*8.73*		"	*10.0*		*87.3*	*60-140*			
LCS (1030338-BS1)				Prepared & Analyzed: 03/23/01						
Benzene	9.58	0.500	ug/l	10.0		95.8	70-130			
Toluene	9.64	0.500	"	10.0		96.4	70-130			
Ethylbenzene	9.88	0.500	"	10.0		98.8	70-130			
Xylenes (total)	30.3	0.500	"	30.0		101	70-130			
Methyl tert-butyl ether	10.8	2.50	"	10.0		108	70-130			
Surrogate: a,a,a-Trifluorotoluene	*8.62*		"	*10.0*		*86.2*	*60-140*			
Matrix Spike (1030338-MS1)	**Source: S103348-12**			Prepared: 03/23/01 Analyzed: 03/24/01						
Benzene	7.16	0.500	ug/l	10.0	ND	71.6	60-140			
Toluene	7.25	0.500	"	10.0	ND	72.5	60-140			
Ethylbenzene	7.30	0.500	"	10.0	ND	73.0	60-140			
Xylenes (total)	21.7	0.500	"	30.0	ND	72.3	60-140			
Methyl tert-butyl ether	7.89	2.50	"	10.0	ND	78.9	60-140			
Surrogate: a,a,a-Trifluorotoluene	*6.42*		"	*10.0*		*64.2*	*60-140*			
Matrix Spike Dup (1030338-MSD1)	**Source: S103348-12**			Prepared: 03/23/01 Analyzed: 03/24/01						
Benzene	9.80	0.500	ug/l	10.0	ND	98.0	60-140	31.1	25	Q-08
Toluene	9.97	0.500	"	10.0	ND	99.7	60-140	31.6	25	Q-08
Ethylbenzene	10.2	0.500	"	10.0	ND	102	60-140	33.1	25	Q-08
Xylenes (total)	31.3	0.500	"	30.0	ND	104	60-140	36.2	25	Q-08
Methyl tert-butyl ether	10.1	2.50	"	10.0	ND	101	60-140	24.6	25	
Surrogate: a,a,a-Trifluorotoluene	*8.84*		"	*10.0*		*88.4*	*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	03/26/01 09:51

Notes and Definitions

P-02	Chromatogram Pattern: Weathered Gasoline C6-C12
P-03	Chromatogram Pattern: Unidentified Hydrocarbons C6-C12
Q-08	The maximum RPD is an advisory limit established by SAL. No method specific limits exist.
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

Chain of Custody

ARCO Facility no. 2169	City (Facility) Oakland	Project manager (Consultant) Steve Meeks	Laboratory name Severn
ARCO engineer	Telephone no. (ARCO)	Telephone no. (Consultant) 916-386-7615	Fax no. (Consultant) 916-675-2035
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	BTEX/TPH EPA M602/8020/8015m MTBE	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 ☐ Semi VOA ☐ VOA ☐	CAM METALS EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐		
A-1-9'		6		X		X	X	3-30-01	0925		X			8103946-	1							
A-5-8'		6		X		X	X		0836		X						-2					
A-6-8'		6		X		X	X		0821		X						-3					
ADR-1-9'		6		X		X	X	3-30-01	0923		X						-4					

3/20/01 NOT 3/30/01 *

Special detection Limit/reporting

Special QA/QC

Remarks
TPHG 8015m
BTEX 8020
MTBE 8020
PER STEVE MEEKS CORRECT SAMPLE DATE 3/30/01 *

Lab number

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

Condition of sample:

Temperature received: 5°C

	Date	Time	Received by	Date	Time
Relinquished by sampler	3-20-01	1207	Monica Gogeen	3/20/01	1245
Relinquished by					
Relinquished by					

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

ARC-3292 (2-91)

APPENDIX D

Field Data Sheets

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: **889 West Grand Avenue**
Oakland, California
Arco Project Manager: **Paul Supple**
Site Sampled By: **Stratus**

Arco Site Number: **Arco 2169**
Delta Project No.: **D000-311**
Delta Project PM: **Steve Meeks**
Date Sampled: **03/20/01**

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	Other ____ ____ ____	Dissolved Oxygen (mg/L)	Sample Freqency (A, S, Q)	Sample I.D.	Sample Time
A-1	8:10	**9.59**	**9.0**	**24.5**	☐	14.91	**3 inch**	**1.1**	16.4	16	☑	☑	☑	☐	1.20	Q/2,5,8,11	**A-1**	9:28
A-2	8:00	**10.08**	**10.0**	**26.2**	☐	16.12	**3 inch**	**1.1**	17.7	N/A	☐	☐	☐	☐	2.50	S/5,11		
A-3	7:43	**10.70**	**9.0**	**30.1**	☐	19.40	**3 inch**	**1.1**	21.3	N/A	☐	☐	☐	☐	1.30	A/11		
A-4	7:45	**9.81**	**8.0**	**28.4**	☐	18.59	**3 inch**	**1.1**	20.4	N/A	☐	☐	☐	☐	1.40	A/11		
A-5	8:08	**8.81**	**5.0**	**30.0**	☐	21.19	**2 inch**	**0.5**	10.6	10	☑	☑	☑	☐	1.20	Q/2,5,8,11	**A-5**	8:36
A-6	8:12	**8.72**	**5.0**	**28.5**	☐	19.78	**2 inch**	**0.5**	9.9	9	☑	☑	☑	☐	1.80	Q/2,5,8,11	**A-6**	8:21
AR-1	Well Covered		**8.5**	**NM**	☐	N/A	**6 inch**	**4.4**	N/A	N/A	☐	☐	☐	☐	NM	S/5,11		
AR-2	8:02	**10.50**	**8.5**	**29.3**	☐	18.80	**4 inch**	**2.0**	37.6	N/A	☐	☐	☐	☐	0.30	S/5,11		
ADR-1	8:05	**9.32**	**5.0**	**21.9**	☐	12.58	**4 inch**	**2.0**	25.2	25	☑	☑	☑	☐	2.10	Q/2,5,8,11	**ADR-1**	9:23
ADR-2	7:59	**10.10**	**5.0**	**26.3**	☐	16.20	**4 inch**	**2.0**	32.4	N/A	☐	☐	☐	☐	NM	Q/2,5,8,11		
Note: A sheen was reported on Well ADR-2					☐						☐	☐	☐	☐				
					☐						☐	☐	☐	☐				
					☐						☐	☐	☐	☐				
					☐						☐	☐	☐	☐				
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					☐						☐	☐	☐	☐				
					☐						☐	☐	☐	☐				

(A)-Casing Water Column: *Depth to Bottom - Depth to Water* ***(B)-Multiplier Values:*** (2" Well: 0.5) (4" Well: 2.0) (6" Well: 4.4)

Sampling Sequence: **Annual:** A-3, A-4; **Semi-Annual:** A-2, AR-1, AR-2, **Quarterly:** A-5, ADR-2, ADR-1, A-6, A-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.

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Arco Site Address: **889 West Grand Avenue**
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Arco Project Manager: **Paul Supple**
Site Sampled By: **Stratus**

Arco Site Number: **Arco 2169**
Delta Project No : **D000-311**
Delta Project PM: **Steve Meeks**
Date Sampled: **03/20/01**

Site Contact & Phone Number:

Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons
A-1	Odor	22.7	7.10	1,088	0	**AR-2**	**Not Sampled**										
		21.3	6.80	1,081	16		Odor										

Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons
A-2	**Not Sampled**					**ADR-1**	Odor	22.8	7.30	1,130	0						
	No Odor							21.7	6.90	1,193	25						

Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons
A-3	**Not Sampled**					**ADR-2**	Odor	SHEEN	NM	NM	0						
	No Odor										31						

Well ID	Time	Temp °C	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
A-4	**Not Sampled**																
	No Odor																

Well ID	Time	Temp °C	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
A-5	No Odor	21.2	7.00	1,043	0												
		20.0	7.00	942	10												

Well ID	Time	Temp °C	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
A-6	No Odor	19.3	7.10	890	0												
		19.9	6.90	965	9												

Well ID	Time	Temp °C	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
AR-1	**Not Sampled**																

Notes: NP = NO PURGE

Original Copies of Field Sampling Sheets are Located in Project File