Recd 7/30/01

3850

CAMBRIA

July 23, 2001

Barney Chan
Alameda Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

Re: **Monitoring and Remediation System Performance Report**
Second Quarter 2001
ARCO Service Station No. 2035
1001 San Pablo Avenue
Albany, California
Cambria Project #438-1608

Dear Mr. Chan:

On behalf of ARCO, Cambria Environmental Technology, Inc. (Cambria) is submitting the attached report which presents the results of the first quarter 2001 groundwater monitoring program at ARCO Service Station No. 2035, located at 1001 San Pablo Avenue, Albany, California. Operation and performance data for the soil vapor extraction (SVE) remediation system is also presented. As requested by the Alameda County Health Care Services Agency (ACHCSA), data from Blaine Tech's May 31, 2001 sampling of Shell owned well S-5 is also included. The monitoring program complies with the ACHCSA requirements regarding underground tank investigations.

Please call if you have questions.

Sincerely,

Cambria Environmental Technology, Inc.

Ron Scheele (510) 450-1983

Ron Scheele, RG
Senior Project Manager

Attachment: Semi-Annual Groundwater Monitoring Report, Second Quarter 2001
SVE Quarterly Operation and Performance, Second Quarter 2001

Cc: Mr. Paul Supple, ARCO, PO Box 6549 Moraga, CA 94570
Barbara and James A. Lestrange, Property Owner, 20 San Juan Court, St. Helina, CA 94574
Muriel & Emile Turpin, Trustees, 957 Arlington Ave, Berkeley, CA, 94707
Mr. Robert Cave, BAAQMD-Permit Division, 939 Ellis Street, San Francisco, California 94109

Oakland, CA
San Ramon, CA
Sonoma, CA

Cambria Environmental Technology, Inc.

1144 65th Street
Suite B
Oakland, CA 94608
Tel (510) 420-0700
Fax (510) 420-9170

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Monitoring and Remediation System Performance Report

Second Quarter 2001

ARCO Service Station No. 2035
1001 San Pablo Avenue
Albany, California
Cambria Project #438-1608

Prepared For:

Mr. Paul Supple
ARCO

July 23, 2001

Prepared By:
Cambria Environmental Technology, Inc.
6262 Hollis Street
Emeryville, California 94608

REGISTERED GEOLOGIST • RONALD A. SCHEELE • No. 6842 • STATE OF CALIFORNIA

Written by:

Jason D. Olson
Senior Staff Environmental Scientist

Ron Scheele, RG
Senior Project Manager

CAMBRIA

Date: July 23, 2001
Quarter: 2ndt Quarter, 2001

ARCO SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Station No.:	2035	Address:	1001 San Pablo Avenue, Albany, California
ARCO Environmental Engineer			Paul Supple
Consulting Co./Contact Person:			Cambria Environmental Technology, Inc./ Ron Scheele, RG
Consultant Project No.:			438-1608
Primary Agency/Regulatory ID No.:			ACHCSA

WORK PERFORMED THIS QUARTER (SECOND - 2001):

1. Submitted quarterly status and remediation system performance report for first quarter 2001.
2. Operated soil vapor extraction (SVE) and air sparge (AS) remediation systems.
3. Performed semi-annual groundwater monitoring and sampling on May 4, 2001.

WORK PROPOSED FOR NEXT QUARTER (THIRD - 2001):

1. Prepare and submit second quarter 2001 monitoring and remediation system performance report.
2. Operate SVE and air sparge systems.

MONITORING:

Current Phase of Project:	Remediation
Frequency of Sampling:	Annual (2nd quarter): MW-5 Semi-annual (2nd/4th quarter): MW-1 through MW-4, MW-6, RW-1 + Shell S-5
Frequency of Monitoring:	Semi-Annual (groundwater), Monthly (SVE)
Is Free Product (FP) Present On-Site:	No
Cumulative FP Recovered to Date	27.9 gallons, Wells AS-1, AS-2, RW-1, VW-1, VW-2, and VW-7
FP Recovered This Quarter :	None
Bulk Soil Removed to Date :	605 cubic yards of TPH impacted soil
Water Wells or Surface Waters, Within 2000 ft., impacted by site:	None
Current Remediation Techniques:	SVE and Air Sparging (RW-1)
Average Depth to Groundwater:	9.73 feet
Groundwater Flow Direction and Gradient:	0.015 ft/ft toward West-Southwest

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Date: July 23, 2001
Quarter: 2ndt Quarter, 2001

SVE QUARTERLY OPERATION AND PERFORMANCE

Equipment Inventory:	Therm Tech Model VAC-10 Thermal/Catalytic Oxidizer
Operating Mode:	Catalytic Oxidation
BAAQMD Permit #:	8694
TPH Conc. End of Period (lab):	6.6 ppmv (6/5/01)
Benzene Conc. End of Period (lab):	<0.31 ppmv (6/5/01)
SVE Flowrate End of Period:	96 scfm
Total HC Destroyed This Period:	198 pounds
Total HC Destroyed to Date:	4,047 pounds
Utility Usage	
Electric (kWh):	77,243
Gas (Therms):	337
Operating Hours This Period (SVE):	1,276 hours
Operating Hours to Date (SVE):	18,305 hours
Percent Operational (SVE):	68.6%
Unit Maintenance:	Routine twice-monthly maintenance
Number of Auto Shut Downs:	3
Destruction Efficiency Permit Requirement:	98.5% (POC >2,000 ppmv); 97% (POC >200 ppmv); 90% (POC <200 ppmv)
Percent TPH Conversion:	80%
Average Stack Temperature:	680 ºF
Average SVE Source Flow:	92 scfm
Average SVE Process Flow:	92 scfm
Average Source Vacuum:	43.3 inches of Water

DISCUSSION:

Based on field measurements collect on May 4, 2001, groundwater beneath the site flows towards the west-southwest at a gradient of 0.015 ft/ft. This is consistent with the historic groundwater flow direction and gradient.

Hydrocarbon concentrations detected this quarter are consistent with the previous sampling event with the exception of well RW-1, which showed an increase in TPHg and benzene. The maximum TPHg concentration was detected in Shell owned well S-5 at 310,000 micrograms per liter (µg/L). The maximum benzene and MTBE concentrations were detected in well RW-1 at 8,420 and 11,000 µg/L, respectively.

As per Bay Area Air Quality Management (BAAQMD) permit requirements, the catalytic oxidizer was operated at a temperature greater than 600 degrees Fahrenheit and the temperature was continuously measured using a chart recorder. All system operations parameters were recorded in specialized field forms for future system optimization and agency inspection. System influent and effluent vapor samples were collected on April 19, May 14, and June 6, 2001 and submitted for analysis.

ATTACHMENTS:

- Figure 1 - Groundwater Elevation Contour and Analytical Summary Map
- Table 1 - Groundwater Monitoring Data
- Table 2 - Groundwater Flow Direction and Gradient
- Table 3 - SVE Operational Uptime Information
- Table 4 - SVE Flow Rates and Analytical Results of Air Samples
- Table 5 - SVE Extraction Rates, Emission Rates, Destruction Efficiency, and Mass Removed
- Appendix A - Sampling and Analysis Procedures
- Appendix B - Certified Analytical Reports and Chain-of Custody Documentation
- Appendix C - Field Data Sheets

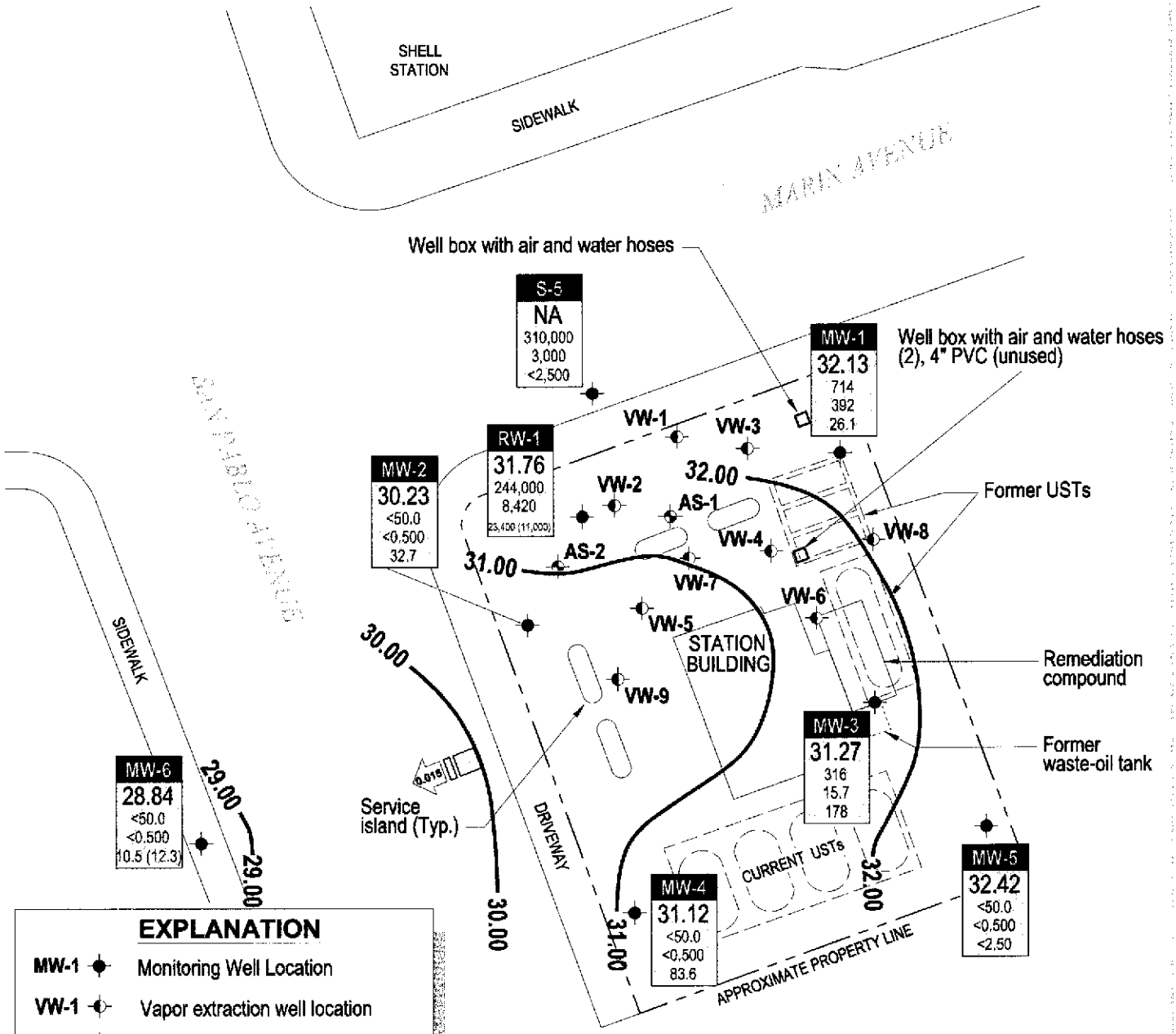

FIGURE 1

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ARCO Service Station 2035

1001 San Pablo Avenue

Albany, California

CAMBRIA

Groundwater Elevation Contour and Analytical Summary Map

May 31, 2001

Table 1
Groundwater Monitoring Data

ARCO Service Station No. 2035
1001 San Pablo Avenue, Albany, California

Well Number	Date Gauged	TOC Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation [1] (ft-MSL)	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8240/8260 (µg/L)	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)
MW-1	03-24-95	41.41	6.21	0.00	35.20	03-24-95	8,800	3,600	<50	62	99	- -	- -		
MW-1	05-24-95	41.41	9.37	0.00	32.04	05-24-95	4,800	2,000	<20	52	<20	- -	- -		
MW-1	08-22-95	41.41	10.30	0.00	31.11	08-22-95	780	310	<2.5	12	<2.5	14	- -		
MW-1	11-09-95	41.41	12.25	0.00	29.16	11-09-95	58	14	<0.5	<0.5	<0.5	- -	- -		
MW-1	02-27-96	41.41	9.08	0.00	32.33	02-27-96	2,700	930	12	18	32	51	- -		
MW-1	04-22-96	41.41	9.11	0.00	32.30	04-22-96	2,700	1,000	<10	22	<10	<60	- -		
MW-1	08-15-96	41.41	10.37	0.00	31.04	08-15-96	300	52	<0.5	0.9	<0.5	22	- -		
MW-1	12-10-96	41.41	8.79	0.00	32.62	12-10-96	270	63	0.7	<0.5	1	25	- -		
MW-1	03-27-97	41.41	9.80	0.00	31.61	03-27-97	1,500	610	<5	15	7	56	- -		
MW-1	05-22-97	41.41	9.65	0.00	31.76	05-22-97	110	6	<0.5	<0.5	0.7	10	- -		
MW-1	09-04-97	41.41	10.22	0.00	31.19	09-04-97	180	40	<0.5	1.2	0.5	26	- -		
MW-1	11-03-97	41.41	10.68	0.00	30.73	11-03-97	83	8	<0.5	<0.5	<0.5	13	- -		
MW-1	02-20-98	41.41	6.92	0.00	34.49	02-20-98	1,800	540	7	27	31	46	- -		
MW-1	05-18-98	41.41	9.28	0.00	32.13	05-18-98	4,500	1,300	20	57	20	<60	- -		
MW-1	08-20-98	41.41	10.05	0.00	31.36	08-21-98	530	110	<5	<5	<5	400	- -		
MW-1	10-20-98	41.41	10.42	0.00	30.99	10-20-98	66	9.1	<0.5	<0.5	<0.5	8	- -		
MW-1	02-16-99	41.41	8.10	0.00	33.31	02-16-99	1,200	390	<5	<5	6	45	- -		
MW-1	05-24-99	41.41	9.53	0.00	31.88	05-24-99	1,300	600	3	13	3	26	- -		
MW-1	08-24-99	41.41	10.03	0.00	31.38	08-24-99	100	21	1.3	<0.5	<0.5	8	- -	0.55	P
MW-1	11-16-99	41.41	9.80	0.00	31.61	11-16-99	99	10	0.6	<0.5	<1	7	- -	2.1	P
MW-1	02-01-00	41.41	8.82	0.00	32.59	02-02-00	400	93	1.6	3.6	3.7	19	- -	1.0	P
DUP 1	06-21-00	- -	- -	- -	- -	06-21-00	416	88.4	<2.50	4.61	1.56	<5.00	- -	- -	- -
MW-1	06-21-00	41.41	9.60	0.00	31.81	06-21-00	444	100	<2.50	4.15	<2.50	15.9	- -	1.7	P
MW-1	11-06-00	41.41	9.50	0.00	31.91	11-06-00	73.2	17.8	<0.500	<0.500	<0.500	7.80	- -	1.04	P
MW-1	**05-04-01**	**41.41**	**9.28**	**0.00**	**32.13**	**05-04-01**	**714**	**392**	**<5.00**	**<5.00**	**<5.00**	**26.1**	**- -**	**- -**	**P**

Table 1
Groundwater Monitoring Data

ARCO Service Station No. 2035
1001 San Pablo Avenue, Albany, California

Well Number	Date Gauged	TOC Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation [1] (ft-MSL)	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8240/8260 (µg/L)	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)
MW-2	03-24-95	40.38	6.96	0.00	33.42	03-24-95	<50	<0.5	<0.5	<0.5	<0.5	- -	- -		
MW-2	05-24-95	40.38	10.02	0.00	30.36	05-24-95	Not sampled: well sampled semi-annually, during the first and third quarters								
MW-2	08-22-95	40.38	10.87	0.00	29.51	08-22-95	<50	<0.5	<0.5	<0.5	<0.5	<3	- -		
MW-2	11-09-95	40.38	13.12	0.00	27.26	11-09-95	Not sampled: well sampled semi-annually, during the first and third quarters								
MW-2	02-27-96	40.38	10.25	0.00	30.13	02-27-96	<50	<0.5	<0.5	<0.5	<0.5	<3	- -		
MW-2	04-22-96	40.38	9.98	0.00	30.40	04-22-96	Not sampled: well sampled semi-annually, during the first and third quarters								
MW-2	08-15-96	40.38	11.10	0.00	29.28	08-15-96	<50	<0.5	<0.5	<0.5	<0.5	4	- -		
MW-2	12-10-96	40.38	10.00	0.00	30.38	12-10-96	Not sampled: well sampled semi-annually, during the first and third quarters								
MW-2	03-27-97	40.38	10.38	0.00	30.00	03-27-97	<50	<0.5	<0.5	<0.5	<0.5	12	- -		
MW-2	05-22-97	40.38	10.65	0.00	29.73	05-22-97	Not sampled: well sampled semi-annually, during the first and third quarters								
MW-2	09-04-97	40.38	10.87	0.00	29.51	09-04-97	<50	<0.5	<0.5	<0.5	<0.5	19	- -		
MW-2	11-03-97	40.38	11.25	0.00	29.13	11-03-97	<50	<0.5	<0.5	<0.5	<0.5	18	- -		
MW-2	02-20-98	40.38	7.69	0.00	32.69	02-20-98	<50	0.5	<0.5	<0.5	<0.5	12	- -		
MW-2	05-18-98	40.38	9.88	0.00	30.50	05-18-98	<50	<0.5	<0.5	<0.5	<0.5	10	- -		
MW-2	08-20-98	40.38	10.62	0.00	29.76	08-21-98	<50	<0.5	<0.5	<0.5	<0.5	3	- -		
MW-2	10-20-98	40.38	11.00	0.00	29.38	10-20-98	<50	<0.5	<0.5	<0.5	<0.5	31	- -		
MW-2	02-16-99	40.38	9.04	0.00	31.34	02-16-99	<50	<0.5	<0.5	<0.5	<0.5	13	- -		
MW-2	05-24-99	40.38	9.90	0.00	30.48	05-24-99	<50	0.6	<0.5	<0.5	<0.5	47	- -		
MW-2	08-24-99	40.38	10.60	0.00	29.78	08-24-99	<50	<0.5	<0.5	<0.5	<0.5	20	- -	0.88	P
MW-2	11-16-99	40.38	10.45	0.00	29.93	11-16-99	<50	<0.5	<0.5	<0.5	<1	<3	- -	2.5	P
MW-2	02-01-00	40.38	9.49	0.00	30.89	02-02-00	<50	<0.5	<0.5	<0.5	<1	59	- -	1.0	P
MW-2	06-21-00	40.38	10.30	0.00	30.08	06-21-00	<50.0	<0.500	<0.500	<0.500	<0.500	4.17	- -	1.5	P
MW-2	11-06-00	40.38	10.19	0.00	30.19	11-06-00	<50.0	<0.500	<0.500	<0.500	<0.500	30.6	- -	1.27	P
MW-2	**05-04-01**	**40.38**	**10.15**	**0.00**	**30.23**	**05-04-01**	**<50.0**	**<0.500**	**<0.500**	**<0.500**	**<0.500**	**32.7**	**- -**	**- -**	**P**
DUP	**05-04-01**	**- -**	**- -**	**- -**	**- -**	**05-04-01**	**<50.0**	**<0.500**	**<0.500**	**<0.500**	**1.18**	**31.5**	**- -**	**- -**	**- -**

Table 1
Groundwater Monitoring Data

ARCO Service Station No. 2035
1001 San Pablo Avenue, Albany, California

Well Number	Date Gauged	TOC Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation [1] (ft-MSL)	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8240/8260 (µg/L)	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)
MW-3	03-24-95	41.44	7.29	0.00	34.15	03-24-95	51	0.8	<0.5	2.4	<0.5	- -	- -		
MW-3	05-24-95	41.44	9.53	0.00	31.91	05-24-95	<50	<0.5	<0.5	<0.5	<0.5	- -	- -		
MW-3	08-22-95	41.44	11.19	0.00	30.25	08-22-95	<50	<0.5	<0.5	<0.5	<0.5	79	- -		
MW-3	11-09-95	41.44	12.77	0.00	28.67	11-09-95	<50	<0.5	<0.5	<0.5	<0.5	- -	- -		
MW-3	02-27-96	41.44	9.41	0.00	32.03	02-27-96	120	3.6	<0.5	2.2	3.7	90	- -		
MW-3	04-22-96	41.44	9.63	0.00	31.81	04-22-96	<50	<0.5	<0.5	<0.5	<0.5	90	- -		
MW-3	08-15-96	41.44	11.12	0.00	30.32	08-15-96	<50	<0.5	<0.5	<0.5	<0.5	54	- -		
MW-3	12-10-96	41.44	10.34	0.00	31.10	12-10-96	71	<0.5	<0.5	<0.5	<0.5	130	- -		
MW-3	03-27-97	41.44	10.28	0.00	31.16	03-27-97	<100	<1	<1	<1	<1	170	- -		
MW-3	05-22-97	41.44	10.40	0.00	31.04	05-22-97	<100	<1	<1	<1	<1	95	- -		
MW-3	09-04-97	41.44	10.75	0.00	30.69	09-04-97	<50	<0.5	<0.5	<0.5	<0.5	37	- -		
MW-3	11-03-97	41.44	11.44	0.00	30.00	11-03-97	<200	<2	<2	<2	<2	130	- -		
MW-3	02-20-98	41.44	7.48	0.00	33.96	02-20-98	<200	<2	5	<2	8	140	- -		
MW-3	05-18-98	41.44	9.87	0.00	31.57	05-18-98	<100	<1	<1	<1	<1	150	- -		
MW-3	08-20-98	41.44	10.72	0.00	30.72	08-21-98	<200	<2	<2	<2	<2	210	- -		
MW-3	10-20-98	41.44	11.30	0.00	30.14	10-20-98	<200	<2	<2	<2	<2	270	- -		
MW-3	02-16-99	41.44	8.60	0.00	32.84	02-16-99	<500	<5	<5	<5	<5	700	- -		
MW-3	05-24-99	41.44	9.87	0.00	31.57	05-24-99	<50	<0.5	<0.5	<0.5	<0.5	150	140		
MW-3	08-24-99	41.44	10.83	0.00	30.61	08-24-99	<50	<0.5	<0.5	<0.5	<0.5	54	71	0.41	P
MW-3	11-16-99	41.44	10.54	0.00	30.90	11-16-99	100	<0.5	3.3	<0.5	<1	500	- -	6.2	P
MW-3	02-01-00	41.44	5.69	0.00	35.75	02-02-00	18,000	1,000	45	1,500	940	100	- -	2.12	P
MW-3	06-21-00	41.44	9.99	0.00	31.45	06-21-00	90.9	1.52	<0.500	<0.500	<0.500	187	- -	2.6	P
MW-3	11-06-00	41.44	10.15	0.00	31.29	11-06-00	138	2.37	<0.500	<0.500	<0.500	216	- -	0.47	P
MW-3	**05-04-01**	**41.44**	**10.17**	**0.00**	**31.27**	**05-04-01**	**316**	**15.7**	**1.14**	**<0.500**	**<0.500**	**178**	- -	- -	**P**

Table 1
Groundwater Monitoring Data

ARCO Service Station No. 2035
1001 San Pablo Avenue, Albany, California

Well Number	Date Gauged	TOC Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation [1] (ft-MSL)	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8240/8260 (µg/L)	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)
MW-4	03-24-95	40.33	5.92	0.00	34.41	03-24-95	<50	<0.5	<0.5	<0.5	<0.5	- -	- -		
MW-4	05-24-95	40.33	9.23	0.00	31.10	05-24-95	<50	<0.5	<0.5	<0.5	<0.5	- -	- -		
MW-4	08-22-95	40.33	10.61	0.00	29.72	08-22-95	<50	<0.5	<0.5	<0.5	<0.5	99	- -		
MW-4	11-09-95	40.33	11.97	0.00	28.36	11-09-95	<50	<0.5	<0.5	<0.5	<0.5	- -	89		
MW-4	02-27-96	40.33	8.84	0.00	31.49	02-27-96	<50	0.8	<0.5	<0.5	<0.5	<3	- -		
MW-4	04-22-96	40.33	9.15	0.00	31.18	04-22-96	Not sampled: well sampled annually, during the first quarter								
MW-4	08-15-96	40.33	10.35	0.00	29.98	08-15-96	Not sampled: well sampled annually, during the first quarter								
MW-4	12-10-96	40.33	8.70	0.00	31.63	12-10-96	Not sampled: well sampled annually, during the first quarter								
MW-4	03-27-97	40.33	9.75	0.00	30.58	03-27-97	<5,000	<50	<50	<50	<50	4,200	- -		
MW-4	05-22-97	40.33	9.91	0.00	30.42	05-22-97	Not sampled: well sampled annually, during the first quarter								
MW-4	09-04-97	40.33	10.25	0.00	30.08	09-04-97	Not sampled: well sampled annually, during the first quarter								
MW-4	11-03-97	40.33	10.79	0.00	29.54	11-03-97	<50	<0.5	<0.5	<0.5	<0.5	<3	- -		
MW-4	02-20-98	40.33	6.78	0.00	33.55	02-20-98	<2,000	<20	<20	<20	<20	3,300	- -		
MW-4	05-18-98	40.33	9.26	0.00	31.07	05-18-98	<50	<0.5	<0.5	<0.5	<0.5	<3	- -		
MW-4	08-20-98	40.33	10.10	0.00	30.23	08-21-98	<50	<0.5	<0.5	<0.5	<0.5	9	- -		
MW-4	10-20-98	40.33	10.43	0.00	29.90	10-20-98	<50	<0.5	<0.5	<0.5	<0.5	17	- -		
MW-4	02-16-99	40.33	8.56	0.00	31.77	02-16-99	<500	<5	<5	<5	<5	400	- -		
MW-4	05-24-99	40.33	9.52	0.00	30.81	05-24-99	<50	<0.5	<0.5	<0.5	<0.5	10	7.6		
MW-4	08-24-99	40.33	9.99	0.00	30.34	08-24-99	<2,500	<25	<25	<25	<25	1,200	1,300	0.84	NP
MW-4	11-16-99	40.33	9.80	0.00	30.53	11-16-99	<50	<0.5	<0.5	<0.5	<1	<3	- -	0.0	NP
MW-4	02-01-00	40.33	9.11	0.00	31.22	02-02-00	<50	<0.5	<0.5	<0.5	<1	1,200	- -	1.0	NP
MW-4	06-21-00	40.33	9.60	0.00	30.73	06-21-00	<50.0	<0.500	<0.500	<0.500	<0.500	60.5	- -	1.3	NP
MW-4	11-06-00	40.33	9.53	0.00	30.80	11-06-00	<50.0	<0.500	<0.500	<0.500	<0.500	14.0	- -	0.71	NP
MW-4	**05-04-01**	**40.33**	**9.21**	**0.00**	**31.12**	**05-04-01**	**<50.0**	**<0.500**	**<0.500**	**<0.500**	**<0.500**	**83.6**	**- -**	**- -**	**NP**

Table 1
Groundwater Monitoring Data

ARCO Service Station No. 2035
1001 San Pablo Avenue, Albany, California

Well Number	Date Gauged	TOC Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation [1] (ft-MSL)	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8240/8260 (µg/L)	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)
MW-5	03-24-95	41.84	6.23	0.00	35.61	03-24-95	<50	<0.5	<0.5	<0.5	<0.5	- -	- -		
MW-5	05-24-95	41.84	9.61	0.00	32.23	05-24-95	Not sampled: well sampled annually, during the first quarter								
MW-5	08-22-95	41.84	11.12	0.00	30.72	08-22-95	Not sampled: well sampled annually, during the first quarter								
MW-5	11-09-95	41.84	12.52	0.00	29.32	11-09-95	Not sampled: well sampled annually, during the first quarter								
MW-5	02-27-96	41.84	9.52	0.00	32.32	02-27-96	<50	<0.5	<0.5	<0.5	<0.5	<3	- -		
MW-5	04-22-96	41.84	9.44	0.00	32.40	04-22-96	Not sampled: well sampled annually, during the first quarter								
MW-5	08-15-96	41.84	10.83	0.00	31.01	08-15-96	Not sampled: well sampled annually, during the first quarter								
MW-5	12-10-96	41.84	9.20	0.00	32.64	12-10-96	Not sampled: well sampled annually, during the first quarter								
MW-5	03-27-97	41.84	10.10	0.00	31.74	03-27-97	<50	<0.5	<0.5	<0.5	<0.5	<3	- -		
MW-5	05-22-97	41.84	10.28	0.00	31.56	05-22-97	Not sampled: well sampled annually, during the first quarter								
MW-5	09-04-97	41.84	10.73	0.00	31.11	09-04-97	Not sampled: well sampled annually, during the first quarter								
MW-5	11-03-97	41.84	11.23	0.00	30.61	11-03-97	Not sampled: well sampled annually, during the first quarter								
MW-5	02-20-98	41.84	6.67	0.00	35.17	02-20-98	<50	<0.5	<0.5	<0.5	<0.5	<3	- -		
MW-5	05-18-98	41.84	9.61	0.00	32.23	05-18-98	Not sampled: well sampled annually, during the first quarter								
MW-5	08-20-98	41.84	10.58	0.00	31.26	08-21-98	Not sampled: well sampled annually, during the first quarter								
MW-5	10-20-98	41.84	10.66	0.00	31.18	10-20-98	Not sampled: well sampled annually, during the first quarter								
MW-5	02-16-99	41.84	8.35	0.00	33.49	02-16-99	Not sampled								
MW-5	05-24-99	41.84	9.95	0.00	31.89	05-24-99	<50	<0.5	<0.5	<0.5	<0.5	<3	- -		
MW-5	08-24-99	41.84	10.51	0.00	31.33	08-24-99	<50	<0.5	<0.5	<0.5	<0.5	<3	- -	0.79	NP
MW-5	11-16-99	41.84	10.37	0.00	31.47	11-16-99	Not sampled: well sampled annually, during the second quarter								
MW-5	02-01-00	41.84	9.35	0.00	32.49	02-02-00	<50	<0.5	<0.5	<0.5	<1	<3	- -	1.0	NP
MW-5	06-21-00	41.84	10.03	0.00	31.81	06-21-00	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	- -	3.1	NP
MW-5	11-06-00	41.84	9.89	0.00	31.95	11-06-00	Not sampled: well sampled annually, during the second quarter								
MW-5	**05-04-01**	**41.84**	**9.42**	**0.00**	**32.42**	**05-04-01**	**<50.0**	**<0.500**	**<0.500**	**<0.500**	**<0.500**	**<2.50**	**- -**	**- -**	**NP**

Table 1
Groundwater Monitoring Data

ARCO Service Station No. 2035
1001 San Pablo Avenue, Albany, California

Well Number	Date Gauged	TOC Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation [1] (ft-MSL)	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8240/8260 (µg/L)	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)
MW-6	03-24-95	40.13	9.03	0.00	31.10	03-24-95	<50	<0.5	<0.5	<0.5	<0.5	--	--		
MW-6	05-24-95	40.13	12.45	0.00	27.68	05-24-95	Not sampled: well sampled annually, during the first quarter								
MW-6	08-22-95	40.13	13.32	0.00	26.81	08-22-95	Not sampled: well sampled annually, during the first quarter								
MW-6	11-09-95	40.13	14.13	0.00	26.00	11-09-95	Not sampled: well sampled annually, during the first quarter								
MW-6	02-27-96	40.13	11.86	0.00	28.27	02-27-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--		
MW-6	04-22-96	40.13	12.35	0.00	27.78	04-22-96	Not sampled: well sampled annually, during the first quarter								
MW-6	08-15-96	40.13	13.18	0.00	26.95	08-15-96	Not sampled: well sampled annually, during the first quarter								
MW-6	12-10-96	40.13	11.94	0.00	28.19	12-10-96	Not sampled: well sampled annually, during the first quarter								
MW-6	03-27-97	40.13	13.10	0.00	27.03	03-27-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--		
MW-6	05-22-97	40.13	13.00	0.00	27.13	05-22-97	Not sampled: well sampled annually, during the first quarter								
MW-6	09-04-97	40.13	13.30	0.00	26.83	09-04-97	Not sampled: well sampled annually, during the first quarter								
MW-6	11-03-97	40.13	13.42	0.00	26.71	11-03-97	<50	<0.5	<0.5	<0.5	<0.5	19	--		
MW-6	02-20-98	40.13	10.57	0.00	29.56	02-20-98	<100	<1	<1	<1	<1	95	--		
MW-6	05-18-98	40.13	12.64	0.00	27.49	05-18-98	<100	<1	<1	<1	<1	180	--		
MW-6	08-20-98	40.13	13.13	0.00	27.00	08-21-98	<100	<1	<1	<1	<1	180	--		
MW-6	10-20-98	40.13	13.48	0.00	26.65	10-20-98	<100	<1	<1	<1	<1	180	--		
MW-6	02-16-99	40.13	11.92	0.00	28.21	02-16-99	<200	<2	<2	<2	<2	200	--		
MW-6	05-24-99	40.13	12.80	0.00	27.33	05-24-99	<50	<0.5	<0.5	<0.5	<0.5	120	--		
MW-6	08-24-99	40.13	13.03	0.00	27.10	08-24-99	<50	<0.5	<0.5	<0.5	<0.5	44	--	0.46	NP
MW-6	11-16-99	40.13	12.70	0.00	27.43	11-16-99	<50	<0.5	<0.5	<0.5	<1	17	17	0.0	NP
MW-6	02-01-00	40.13	8.61	0.00	31.52	02-02-00	<50	<0.5	<0.5	<0.5	<1	6	--	1.0	NP
MW-6	06-21-00	40.13	12.88	0.00	27.25	06-21-00	<50.0	<0.500	<0.500	<0.500	<0.500	2.57	--	2.8	NP
MW-6	11-06-00	40.13	12.74	0.00	27.39	11-06-00	<50.0	<0.500	<0.500	<0.500	<0.500	3.77	--	1.51	NP
DUP	11-06-00	--	--	--	--	11-06-00	<50.0	<0.500	<0.500	<0.500	<0.500	4.03	--	--	--
MW-6	**05-04-01**	**40.13**	**11.29**	**0.00**	**28.84**	**05-04-01**	**<50.0**	**<0.500**	**<0.500**	**<0.500**	**<0.500**	**10.5**	**12.3**	**--**	**NP**

Table 1
Groundwater Monitoring Data

ARCO Service Station No. 2035
1001 San Pablo Avenue, Albany, California

Well Number	Date Gauged	TOC Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation [1] (ft-MSL)	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8240/8260 (µg/L)	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)
RW-1	03-24-95	40.33	9.32	0.01	31.02	03-24-95	11,000	560	660	150	1,700	- -	- -		
RW-1	05-24-95	40.33	9.75	0.03	30.60	05-24-95	Not sampled: well contained floating product								
RW-1	08-22-95	40.33	10.86	0.02	29.48	08-22-95	Not sampled: well contained floating product								
RW-1	11-09-95	40.33	20.61	0.00	19.72	11-09-95	1,600	79	46	13	240	- -	- -		
RW-1	02-27-96	40.33	16.56	0.00	23.77	02-27-96	210	44	7.5	2.5	24	29	- -		
RW-1	04-22-96	40.33	9.65	0.00	30.68	04-22-96	36,000	7,400	3,700	580	3,400	<300	- -		
RW-1	08-15-96	40.33	10.60	0.00	29.73	08-15-96	1,800	31	38	15	150	<30	- -		
RW-1	12-10-96	40.33	8.72	0.00	31.61	12-10-96	25,000	1,900	1,000	330	3,200	<100	- -		
RW-1	03-27-97	40.33	10.33	0.00	30.00	03-27-97	7,200	1,900	59	95	240	480	- -		
RW-1	05-22-97	40.33	10.10	0.00	30.23	05-22-97	3,000	630	84	45	340	<60	- -		
RW-1	09-04-97	40.33	10.42	0.00	29.91	09-04-97	7,100	120	55	14	160	<60	- -		
RW-1	11-03-97	40.33	9.10	0.00	31.23	11-03-97	<200	14	19	3	19	140	- -		
RW-1	02-20-98	40.33	7.49	0.00	32.84	02-20-98	3,800	1,000	85	64	220	950	- -		
RW-1	05-18-98	40.33	8.90	0.00	31.43	05-18-98	<200	45	<2	2	4	220	- -		
RW-1	08-20-98	40.33	11.06	0.00	29.27	08-21-98	480	200	<2	<2	30	180	- -		
RW-1	10-20-98	40.33	11.12	0.00	29.21	10-20-98	110	36	2.9	<0.5	4.1	5	- -		
RW-1	02-16-99	40.33	7.70	0.00	32.63	02-17-99	250	61	2	2	19	94	- -		
RW-1	05-24-99	40.33	11.12	0.00	29.21	05-24-99	4,500	2,000	7	<2	180	35	- -		
RW-1	08-24-99	40.33	10.15	0.00	30.18	08-24-99	2,600	1,100	6.3	2.3	17	39	- -	0.52	NP
RW-1	11-16-99	40.33	9.95	0.00	30.38	11-16-99	1,200	2,600	16	86	41	140	- -	1.4	P
RW-1	02-01-00	40.33	11.88	0.00	28.45	02-02-00	11,000	980	230	200	1,400	38	- -	1.0	NP
RW-1	06-21-00	40.33	9.83	0.00	30.50	06-21-00	899	278	<2.50	8.70	8.46	61.1	- -	1.3	NP
RW-1	11-06-00	40.33	8.45	0.00	31.88	11-06-00	156,000	3,260	28,800	4,570	25,700	26,200	- -	0.63	P
RW-1	**05-04-01**	**40.33**	**8.57**	**0.00**	**31.76**	**05-04-01**	**244,000**	**8,420**	**56,000**	**5,660**	**36,200**	**23,400**	**11,000**	**- -**	**P**
S-5	**05-31-01**	**- -**	**- -**	**- -**	**- -**	**05-31-01**	**310,000**	**3,000**	**11,000**	**4,000**	**34,000**	**<2,500**	**- -**	**- -**	

Table 1
Groundwater Monitoring Data

ARCO Service Station No. 2035
1001 San Pablo Avenue, Albany, California

Well Number	Date Gauged	TOC Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation [1] (ft-MSL)	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8240/8260 (µg/L)	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)

TOC: top of casing
ft-MSL: elevation in feet, relative to mean sea level
TPH: total petroleum hydrocarbons as gasoline, California DHS LUFT Method
BTEX: benzene, toluene, ethylbenzene, total xylenes by EPA method 8021B. (EPA method 8020 prior to 11/16/99).
MTBE: Methyl tert-butyl ether
TRPH: total recoverable petroleum hydrocarbons, by EPA method 418.1
µg/L: micrograms per liter
mg/L: milligrams per liter
ND: none detected
- -: not analyzed or not applicable
<: denotes concentration not present at or above laboratory detection limit stated to the right.
[1] = Computed by adding correction factor to groundwater elevation. Correction factor = free product thickness times 0.73 (approximate specific gravity of gasoline).
*: EPA method 8020 prior to 11/16/99
**: For previous historical groundwater elevation and analytical data please refer to *Fourth Quarter 1995 Groundwater Monitoring Program Results and Remediation System Performance Evaluation Report, ARCO Service Station 2035, Albany, California*, (EMCON, March 25, 1996).

Table 2
Groundwater Flow Direction and Gradient

ARCO Service Station No. 2035
1001 San Pablo Avenue, Albany, California

Date Measured	Average Flow Direction	Average Hydraulic Gradient
03-24-95	Northwest	0.037
05-24-95	West-Northwest	0.013
08-22-95	Southwest	0.012
11-09-95	West-Southwest	0.01
02-27-96	Southwest	0.009
04-22-96	West-Southwest	0.014
08-15-96	Southwest	0.011
12-10-96	West-Southwest	0.023
03-27-97	West-Southwest	0.026
05-22-97	West-Southwest	0.024
09-04-97	West	0.019
11-03-97	Southwest	0.038
02-20-98	West	0.031
05-18-98	West	0.02
08-20-98	West	0.02
10-20-98	West	0.02
02-16-99	West	0.03
05-24-99	West-Southwest	0.03
08-24-99	West-Southwest	0.01
11-16-99	West-Southwest	0.02
02-01-00	Northwest	0.08
06-21-00	West	0.023
11-06-00	West	0.018
05-04-01	**West-Southwest**	**0.015**

Table 3
Soil Vapor Extraction System (1997-Present)
Operational Uptime Information

ARCO Service Station No. 2035
1001 San Pablo Avenue, Albany, California

Date	Period Operation					Cumulative Operation			
	Meter (hours)	Total (days)	Uptime (days)	Downtime (days)	Uptime (%)	Total (days)	Uptime (days)	Downtime (days)	Uptime (%)
11/01/97						1425	335	1090	24%
12/01/97	11484	30	14	16	47%	1455	349	1106	24%
01/27/98	11484	57	0	57	0%	1512	349	1163	23%
08/12/98	11484	197	0	197	0%	1709	349	1360	20%
09/02/98	11485	21	0	21	0%	1730	349	1381	20%
10/19/98	12280	47	33	14	70%	1777	382	1395	22%
11/10/98	12809	22	22	0	100%	1799	404	1395	22%
01/22/99	12809	73	0	73	0%	1872	404	1468	22%
02/11/99	12810	20	0	20	0%	1892	404	1488	21%
04/01/99	12810	49	0	49	0%	1941	404	1537	21%
06/10/99	12810	70	0	70	0%	2011	404	1607	20%
06/24/99	13146	14	14	0	100%	2025	418	1607	21%
08/17/99	13146	54	0	54	0%	2079	418	1661	20%
09/09/99	13147	23	0	23	0%	2102	418	1684	20%
09/21/99	13435	12	12	0	100%	2114	430	1684	20%
10/06/99	13450	15	1	14	4%	2129	431	1698	20%
10/20/99	13475	14	1	13	7%	2143	432	1711	20%
11/03/99	13812	14	14	0	100%	2157	446	1711	21%
11/17/99	14148	14	14	0	100%	2171	460	1711	21%
12/01/99	14391	14	10	4	72%	2185	470	1715	22%
12/16/99	14751	15	15	0	100%	2200	485	1715	22%
01/05/00	14751	20	0	20	0%	2220	485	1735	22%
01/19/00	15087	14	14	0	100%	2234	499	1735	22%
02/21/00	15087	33	0	33	0%	2267	499	1768	22%
03/01/00	15303	9	9	0	100%	2276	508	1768	22%
03/23/00	15831	22	22	0	100%	2298	530	1768	23%

Table 3
Soil Vapor Extraction System (1997-Present)
Operational Uptime Information

ARCO Service Station No. 2035
1001 San Pablo Avenue, Albany, California

Date	Period Operation					Cumulative Operation			
	Meter (hours)	Total (days)	Uptime (days)	Downtime (days)	Uptime (%)	Total (days)	Uptime (days)	Downtime (days)	Uptime (%)
10/17/00	15832	208	0	208	0%	2506	530	1976	21%
10/24/00	15998	7	7	0	99%	2513	537	1976	21%
11/13/00	16319	20	13	7	67%	2533	551	1982	22%
11/28/00	16319	15	0	15	0%	2548	551	1997	22%
12/20/00	16319	22	0	22	0%	2570	551	2019	21%
01/17/01	16324	28	0	28	1%	2598	551	2047	21%
02/14/01	16346	28	1	27	3%	2626	552	2074	21%
02/26/01	16458	12	5	7	39%	2638	556	2082	21%
03/13/01	16466	15	0	15	2%	2653	557	2096	21%
03/30/01	16872	17	17	0	99%	2670	574	2096	21%
04/19/01	**17029**	**20**	**7**	**13**	**33%**	**2690**	**580**	**2110**	**22%**
04/30/01	**17292**	**11**	**11**	**0**	**99%**	**2701**	**591**	**2110**	**22%**
05/14/01	**17601**	**14**	**13**	**1**	**92%**	**2715**	**604**	**2111**	**22%**
05/22/01	**17793**	**8**	**8**	**0**	**100%**	**2723**	**612**	**2111**	**22%**
06/05/01	**18126**	**14**	**14**	**0**	**99%**	**2737**	**626**	**2111**	**23%**
06/25/01	**18305**	**20**	**7**	**13**	**37%**	**2757**	**633**	**2124**	**23%**

Table 4
Soil Vapor Extraction System
Flow Rates and Analytical Results of Air Samples (1997 - present)

Arco Service Station No. 2035
1001 San Pablo Avenue, Albany, California

Date	Sample Location	Vacuum (in. H20)	Velocity /Actual Flow (fpm/acfm)	Flowrate[1, 2] (scfm)	Hydrocarbon Concentrations (ppmv) TPHg	Benzene	Toluene	Ethylbenzene	Xylene	MTBE
12/01/97	Influent			221	160	0.6	<0.1	1.6	2.5	
	Effluent				8	<0.1	0.1	<0.1	0.3	
01/27/98	Influent	NA	NA	NA	NA	NA	NA	NA	NA	
	Effluent									
08/12/98	Influent	NA	NA	NA	NA	NA	NA	NA	NA	
	Effluent									
09/02/98	Influent	30.0	600	27	610	<1	<1	2	3	
	Effluent		1050	92	9	<0.1	<0.1	0.1	<0.2	
10/19/98	Influent	20.0	500	23	64	<0.1	0.7	<0.1	<0.2	
	Effluent		1200	106	<5	<0.1	<0.1	<0.1	<0.2	
11/10/98	Influent	20.0	500	23	8	<0.1	0.1	<0.1	<0.2	
	Effluent		1200	106	<5	<0.1	<0.1	<0.1	<0.2	
06/10/99	Influent	35.0	1500	67	100	0.5	3	<0.1	0.9	<1
	Effluent		975	75	<5	<0.1	<0.1	<0.1	<0.2	<1
09/09/99	Influent	15.4	1900	90	<49	0.7	1.1	<0.1	<0.2	33
	Effluent		1200	92	<5	<0.1	<0.1	<0.1	<0.2	<0.8
10/06/99	Influent	16.0	1825	86	240	1	2.9	<0.1	0.7	67
	Effluent		900	69	9	<0.1	0.1	0.1	<0.2	<0.8
12/01/99	Influent	11.0	1900	91	210	0.7	0.8	<0.2	0.2	61
	Effluent		1500	115	<5	<0.1	<0.1	<0.1	<0.2	1.4
01/05/00	Influent	9.8	800	38	90	0.4	0.7	0.1	<0.2	33
	Effluent		1450	111	<5	<0.1	<0.1	<0.1	<0.2	<0.8
03/01/00	Influent	9.8	2000	96	54	1.3	4.8	1.1	7.2	19
	Effluent		1500	115	<5	<0.1	<0.1	<0.1	<0.2	<0.8
10/17/00	Influent	10.0	--	27	77	1.4	1.8	0.33	1.4	20
	Effluent		--	103	6.0	0.044	0.16	0.055	0.38	0.59

Table 4
Soil Vapor Extraction System
Flow Rates and Analytical Results of Air Samples (1997 - present)

Arco Service Station No. 2035
1001 San Pablo Avenue, Albany, California

Date	Sample Location	Vacuum (in. H20)	Velocity /Actual Flow (fpm/acfm)	Flowrate[1, 2] (scfm)	Hydrocarbon Concentrations (ppmv) TPHg	Benzene	Toluene	Ethylbenzene	Xylene	MTBE
02/26/01	Influent	60.0	180	153	50.4	0.850	3.84	0.390	2.02	11.6
	Effluent		180	153	<2.84	<0.0314	0.0769	<0.0230	0.754	0.132
04/19/01	**Influent**	**45.0**	**124**	**110**	**180**	**2.0**	**2.6**	**0.25**	**2.0**	**<1.5**
	Effluent		**124**	**110**	**<10.0**	**<0.15**	**0.24**	**<0.15**	**0.79**	**<1.5**
05/14/01	**Influent**	**40.0**	**76**	**69**	**41.0**	**0.511**	**0.299**	**0.0357**	**0.293**	**0.492**
	Effluent		**76**	**69**	**<2.84**	**<0.0314**	**<0.0266**	**<0.0230**	**<0.0230**	**<0.111**
06/05/01	**Influent**	**45.0**	**108**	**96**	**6.6**	**<0.31**	**0.41**	**0.072**	**0.32**	**2.2**
	Effluent		**108**	**96**	**<2.40**	**<0.31**	**<0.027**	**<0.023**	**0.068**	**<0.14**

[1] Influent Flow Rate previous to 10/17/00, 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] Influent Flow Rate 10/17/00 to present, cfm =(Actual flow, acfm)(406.8 in.H20 - Vacuum, in.H20) / (406.8 in.H20)

Effluent Flow Rate 10/17/00 to present, scfm = (Actual flow, acfm)[(460° R + 77° F)/(460° R + Vapor Temp F)]
when dilution valve is open. If dilution valve is closed, influent flow = effluent flow

Table 5
Soil Vapor Extraction System
Extraction Rates, Emission Rates, Destruction Efficiency, and Mass Removed
(1997 - present)

ARCO Service Station No. 2035
1001 San Pablo Avenue, Albany, California

Date	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)
12/01/97	13.0	0.0381	0.651	<0.0064	95%	NC	0.000	0.000	3023	250.5
09/02/98	6.11	0.0000	0.306	<0.0027	95%	NC	135	0.000	3157	250.5
10/19/98	0.549	0.0000	<0.196	<0.0031	NC	NC	0.000	0.000	3157	250.5
11/10/98	0.0686	0.0000	<0.196	<0.0031	NC	NC	0.000	0.000	3157	250.5
06/10/99	2.47	0.0097	<0.138	<0.0021	94%	NC	34.7	0.135	3192	250.7
09/09/99	0.000	0.0180	<0.169	<0.0026	NC	NC	0.000	0.217	3192	250.9
10/06/99	7.59	0.0247	0.229	<0.0020	97%	92%	316	1.03	3509	251.9
12/01/99	7.00	0.0182	<0.212	<0.0033	97%	82%	176	0.458	3685	252.4
01/05/00	1.27	0.0044	<0.205	<0.0032	84%	27%	17.7	0.0615	3702	252.4
03/01/00	1.90	0.0357	<0.212	<0.0033	89%	91%	58.9	1.11	3761	253.5
10/17/00	0.77	0.0110	<0.226	<0.0013	71%	88%	20.2	0.287	3781	253.8
02/26/01	2.84	0.0374	<0.160	<0.0014	94%	96%	67.6	0.891	3849	254.7
04/19/01	**7.29**	**0.0633**	**<0.405**	**<0.0047**	**94%**	**93%**	**174**	**1.51**	**4023**	**256.2**
05/14/01	**1.03**	**0.0100**	**<0.0715**	**<0.0006**	**93%**	**94%**	**22.6**	**0.220**	**4045**	**256.4**
06/25/01	**0.233**	**<0.0085**	**<0.0847**	**<0.0085**	**64%**	NC	**1.74**	**0.0639**	**4047**	**256.5**

[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); NC = Not Calculated due to non-detection.

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

APPENDIX A

SAMPLING AND ANALYSIS PROCEDURES

APPENDIX A

SAMPLING AND ANALYSIS PROCEDURES

The sampling and analysis procedures for water quality monitoring programs are contained in this appendix. The procedures provided for consistent and reproducible sampling methods, proper application of analytical methods, and accurate and precise analytical results. Finally, these procedures provided guidelines so that the overall objectives of the monitoring program were achieved.

The following documents have been used as guidelines for developing these procedures:

- Procedures Manual for Groundwater Monitoring at Solid Waste Disposal Facilities, Environmental Protection Agency (EPA)-530/SW-611, August 1977
- Resource Conservation and Recovery Act (RCRA) Groundwater Monitoring Technical Enforcement Guidance Document, Office of Solid Waste and Emergency Response (OSWER) 9950.1, September 1986
- Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, EPA SW-846, 3rd edition, November 1986
- Methods for Organic Chemical Analysis of Municipal and Industrial Waste Water, EPA-600/4-82-057, July 1982
- Methods for Organic Chemical Analysis of Water and Wastes, EPA-600/4-79-020, revised March 1983
- Leaking Underground Fuel Tank (LUFT) Field Manual, California State Water Resources Control Board, revised October 1989

Sample Collection

Sample collection procedures include equipment cleaning, water level and total well depth measurements, and well purging and sampling.

Equipment Cleaning

Before the sampling event was started, equipment that was used to sample groundwater was disassembled and cleaned with detergent water and then rinsed with tap water. During field sampling, equipment surfaces that were placed in the well or came into

contact with groundwater during field sampling were washed with detergent and double rinsed with tap water before the next well was purged or sampled.

Water Level, Floating Hydrocarbon, and Total Well Depth Measurements

Before purging and sampling occurred, the depth to water, floating hydrocarbon thickness and total well depth were measured using an oil/water interface measuring system. The oil/water interface measuring system consists of a probe that emits a continuous audible tone when immersed in a nonconductive fluid, such as oil or gasoline and an intermittent tone when immersed in a conductive fluid, such as water. The floating hydrocarbon thickness and water level were measured by lowering the probe into the well. Liquid levels were recorded relative to the tone emitted at the groundwater surface. The sonic probe was decontaminated after each use. A bottom-filling, clear disposable bailer was used to verify floating hydrocarbon thickness measurements of less than 0.02 foot. Alternatively, an electric sounder and a bottom-filling Teflon bailer may have been used to record floating hydrocarbon thickness and depth to water.

The electric sounder is a transistorized instrument that uses a reel-mounted, two-conductor, coaxial cable that connects the control panel to the sensor. Cable markings are stamped at 1-foot intervals. The water level was measured by lowering the sensor into the monitoring well. A low-current circuit was completed when the sensor contacted the water, which served as an electrolyte. The current was amplified and fed into an indicator light and audible buzzer, signaling when water had been contacted. A sensitivity control compensated for highly saline or conductive water. The electric sounder was decontaminated after each use. The bailer was lowered to a point just below the liquid level, retrieved, and observed for floating hydrocarbon.

Liquid measurements were recorded to the nearest 0.01 foot on the depth to water/floating product survey form. The groundwater elevation at each monitoring well was calculated by subtracting the measured depth to water from the surveyed elevation of the top of the well casing. (Every attempt was made to measure depth to water for all wells on the same day.) Total well depth was then measured by lowering the sensor to the bottom of the well. Total well depth, used to calculate purge volumes and to determine whether the well screen was partially obstructed by silt, was recorded to the nearest 0.1 foot on the depth to water/floating product survey form.

Well Purging

If the depth to groundwater was above the top of screens of the monitoring wells, then the wells were purged, otherwise non-purge groundwater samples were collected. Before sampling occurred, a polyvinyl chloride (PVC) bailer, centrifugal pump, low-flow submersible pump, or disposable bailer was used to purge standing water in the casing and gravel pack from the monitoring well. 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.

Groundwater purged from the monitoring wells was transported in a 240-gallon truck-mounted tank to Integrated Waste Management's Milpitas storage facility for disposal.

Field measurements of pH, specific conductance, and temperature were recorded in a waterproof field logbook. Field data sheets were reviewed for completeness by the sampling coordinator after the sampling event was completed.

The pH, specific conductance, and temperature meter were calibrated each day before field activities were begun. The calibration was checked once each day to verify meter performance. Field meter calibrations were recorded on the water sample field data sheet.

Well Sampling

A disposable bailer was the only equipment acceptable for well sampling. When samples for volatile organic analysis were being collected, the flow of groundwater from the bailer was regulated to minimize turbulence and aeration. Glass bottles of at least 40-milliliters volume and fitted with Teflon-lined septa were used in sampling for volatile organics. These bottles were filled completely to prevent air from remaining in the bottle. A positive meniscus formed when the bottle was completely full. A convex Teflon septum was placed over the positive meniscus to eliminate air. After the bottle was capped, it was inverted and tapped to verify that it contained no air bubbles. The sample containers for other parameters were filled, filtered as required, and capped.

When required, dissolved concentrations of metals were determined using appropriate field filtration techniques. The sample was filtered by emptying the contents of the disposable bailer into a pressure transfer vessel. A disposable 0.45-micron acrylic copolymer filter was threaded onto the transfer vessel at the discharge point, and the vessel was sealed. Pressure was applied to the vessel with a hand pump and the filtrate directed into the appropriate containers. Each filter was used once and discarded.

Sample Preservation and Handling

The following section specifies sample containers, preservation methods, and sample handling procedures.

Sample Containers and Preservation

Sample containers vary with each type of analytical parameter. Container types and materials were selected to be nonreactive with the particular analytical parameter tested.

Sample Handling

Sample containers were labeled immediately prior to sample collection. Samples were kept cool with cold packs or ice until received by the laboratory. At the time of

sampling, each sample was logged on an ARCO chain-of-custody record that accompanied the sample to the laboratory. Samples that required overnight storage prior to shipping to the laboratory were kept cool (4° C) in a refrigerator.

Samples were transferred from Cambria to an ARCO-approved laboratory by courier or taken directly to the laboratory by the environmental sampler. Sample shipments from Cambria to laboratories performing the selected analyses routinely occurred within two to three days of sample collection.

Sample Documentation

The following procedures were used during sampling and analysis to provide chain-of-custody control during sample handling from collection through storage. Sample documentation included the use of the following:

- Water sample field data sheets to document sampling activities in the field
- Labels to identify individual samples
- Chain-of-custody record sheets for documenting possession and transfer of samples
- Laboratory analysis request sheets for documenting analyses to be performed

Field Logbook

In the field, the sampler recorded the following information on the water sample field data sheet (see Figure A-2) for each sample collected:

- Project number
- Client's name
- Location
- Name of sampler
- Date and time
- Well accessibility and integrity
- Pertinent well data (e.g., casing diameter, depth to water, well depth)
- Calculated and actual purge volumes
- Purging equipment used
- Sampling equipment used
- Appearance of each sample (e.g., color, turbidity, sediment)
- Results of field analyses (temperature, pH, specific conductance)
- General comments

The water sample field data sheet was signed by the sampler and reviewed by the sampling coordinator.

Labels

Sample labels contained the following information:

- Project number
- Sample number (i.e., well designation)
- Sample depth
- Sampler's initials
- Date and time of collection
- Type of preservation used (if any)

Sampling and Analysis Chain-of-Custody Record

The ARCO chain-of-custody record initiated at the time of sampling contained, at a minimum, the sample designation (including the depth at which the sample was collected), sample type, analytical request, date of sampling, and the name of the sampler. The record sheet was signed, timed, and dated by the sampler when transferring the samples. The number of custodians in the chain of possession was minimized. A copy of the ARCO chain-of-custody record was returned to Cambria with the analytical results.

Groundwater Sampling and Analysis Request Form

A groundwater sampling and analysis request form (see Figure A-3) was used to communicate to the environmental sampler the requirements of the monitoring event. At a minimum, the groundwater sampling and analysis request form included the following information:

- Date scheduled
- Site-specific instructions
- Specific analytical parameters
- Well number
- Well specifications (expected total depth, depth of water, and product thickness)

APPENDIX B

CERTIFIED ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Cambria Environmental Technology 6262 Hollis Street Emeryville, CA 94608	Client Project ID: #438-1608-4; Arco 2035	Date Sampled: 04/19/01
		Date Received: 04/20/01
	Client Contact: Ron Scheele	Date Extracted: 04/20/01
	Client P.O:	Date Analyzed: 04/20/01

04/27/2001

Dear Ron:

Enclosed are:

1). the results of **2** samples from your **#438-1608-4; Arco 2035** project,

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Cambria Environmental Technology	Client Project ID: #438-1608-4; Arco 2035	Date Sampled: 04/19/01
6262 Hollis Street		Date Received: 04/20/01
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Extracted: 04/20/01
	Client P.O:	Date Analyzed: 04/20/01

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)[+]	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Recovery Surrogate
65929	IN	Air	180,a	ND	2.0	2.6	0.25	2.0	---[#]
65930	EF	Air	ND	ND	ND	0.24	ND	0.79	---[#]

[%] ppm (mg/L) to ppmv (uL/L) conversion for TPH(g) assumes the molecular weight of gasoline to be equal to that of hexane.

Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		Air	10 uL/L	1.5	0.15	0.15	0.15	0.25	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in uL/L(ppmv), wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

[#] cluttered chromatogram; sample peak coelutes with surrogate peak

[+]The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Ave. South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

QC REPORT

Date: 04/20/0104/21/01 Matrix: Air

Extraction: TTLC

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 41801					Instrument:		GC-7
Surrogate1	0.000	99.0	102.0	100.00	99	102	3.0
Xylenes	0.000	30.3	29.1	30.00	101	97	4.0
Ethyl Benzene	0.000	9.4	9.3	10.00	94	93	1.1
Toluene	0.000	9.6	9.4	10.00	96	94	2.1
Benzene	0.000	9.2	9.0	10.00	92	90	2.2
MTBE	0.000	8.3	8.2	10.00	83	82	1.2
GAS	0.000	97.3	94.8	100.00	97	95	2.6

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

25537 ZC374

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

Report To: Ron Scheele Bill To: Same
Company: Cambria Environmental Technology
1144 65th Street, Suite C
Oakland, CA 94608
Tele: (510) ~~420-0700~~ 450-1983 Fax: (510) 420-9170 450-8295
Project #: 438-1608-4 Project Name: Arco 2035
Project Location: Arco 2035
Sampler Signature: ~~[signature]~~

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED Ice	METHOD PRESERVED HCl	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	BTEX & TPH as Gas (602/8020 + 8015) MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI
IN	Arco2035	4-19	11:00	1	BAG			X							X														
EF	Arco2035	4-19	11:00	1	BAG			X							X														

ICE/t
GOOD CONDITION ✓
HEAD SPACE ABSENT

PRESERVATION APPROPRIATE CONTAINERS ✓

VOAS | O&G | METALS | OTHER

Other: 65929 65930

Comments:

Relinquished By:	Date:	Time:	Received By:
Greg Bentley	4-19-01	1630	"SECURED LOCATION"
	4-20-01	1715	
Relinquished By:	Date:	Time:	Received By:

Remarks: Report in ppmv. Fax results ASAP.
Reporting limit of 10 ppmv. (20ml injection Volume.)

Sequoia Analytical

1455 McDowell Blvd. North, Ste. D
Petaluma, CA 94954
(707) 792-1865
FAX (707) 792-0342
www.sequoialabs.com

May 18 , 2001

Ron Scheele
Cambria Environmental - Emeryville
6262 Hollis Street
Emeryville, CA 94608
RE: ARCO / P105288

Enclosed are the results of analyses for samples received by the laboratory on 05/15/01. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Angelee Cari
Client Services Representative

CA ELAP Certificate Number 2374

Sequoia Analytical

1455 McDowell Blvd. North, Ste. D
Petaluma, CA 94954
(707) 792-1865
FAX (707) 792-0342
www.sequoialabs.com

Cambria Environmental - Emeryville	Project: ARCO	
6262 Hollis Street	Project Number: 2035/Albany	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	05/18/01 10:16

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
IN	P105288-01	Air	05/14/01 14:30	05/15/01 16:20
EFF	P105288-02	Air	05/14/01 14:30	05/15/01 16:20

Sequoia Analytical

1455 McDowell Blvd. North, Ste, D
Petaluma, CA 94954
(707) 792-1865
FAX (707) 792-0342
www.sequoialabs.com

Cambria Environmental - Emeryville	Project: ARCO	
6262 Hollis Street	Project Number: 2035/Albany	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	05/18/01 10:16

Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M

Sequoia Analytical - Petaluma

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
IN (P105288-01) Air Sampled: 05/14/01 14:30 Received: 05/15/01 16:20									
Gasoline	**41.0**	2.84	ppmv	0.2	1050374	05/16/01	05/16/01	EPA 8015M/8020M	
Benzene	**0.511**	0.0314	"	"	"	"	"	"	QR-04
Toluene	**0.299**	0.0266	"	"	"	"	"	"	QR-04
Ethylbenzene	**0.0357**	0.0230	"	"	"	"	"	"	
Xylenes (total)	**0.293**	0.0230	"	"	"	"	"	"	
Methyl tert-butyl ether	**0.492**	0.111	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*107 %*	*65-135*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*106 %*	*65-135*		"	"	"	"	
EFF (P105288-02) Air Sampled: 05/14/01 14:30 Received: 05/15/01 16:20									
Gasoline	ND	2.84	ppmv	0.2	1050373	05/16/01	05/16/01	EPA 8015M/8020M	
Benzene	ND	0.0314	"	"	"	"	"	"	
Toluene	ND	0.0266	"	"	"	"	"	"	
Ethylbenzene	ND	0.0230	"	"	"	"	"	"	
Xylenes (total)	ND	0.0230	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.111	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*108 %*	*65-135*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*101 %*	*65-135*		"	"	"	"	

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1455 McDowell Blvd. North, Ste. D
Petaluma, CA 94954
(707) 792-1865
FAX (707) 792-0342
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Cambria Environmental - Emeryville	Project: ARCO	
6262 Hollis Street	Project Number: 2035/Albany	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	05/18/01 10:16

Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M - Quality Control
Sequoia Analytical - Petaluma

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1050373 - EPA 5030, waters										
Blank (1050373-BLK1)				Prepared & Analyzed: 05/16/01						
Gasoline	ND	14.2	ppmv							
Benzene	ND	0.157	"							
Toluene	ND	0.133	"							
Ethylbenzene	ND	0.115	"							
Xylenes (total)	ND	0.115	"							
Methyl tert-butyl ether	ND	0.556	"							
Surrogate: a,a,a-Trifluorotoluene	*54.5*		"	*50.3*		*108*	*65-135*			
Surrogate: 4-Bromofluorobenzene	*41.0*		"	*41.9*		*97.9*	*65-135*			
LCS (1050373-BS1)				Prepared & Analyzed: 05/16/01						
Gasoline	770	14.2	ppmv	780		98.7	65-135			
Benzene	13.4	0.157	"	10.0		134	65-135			
Toluene	57.5	0.133	"	51.3		112	65-135			
Ethylbenzene	11.9	0.115	"	10.6		112	65-135			
Xylenes (total)	59.5	0.115	"	53.3		112	65-135			
Methyl tert-butyl ether	16.4	0.556	"	14.5		113	65-135			
Surrogate: a,a,a-Trifluorotoluene	*61.7*		"	*50.3*		*123*	*65-135*			
Surrogate: 4-Bromofluorobenzene	*44.2*		"	*41.9*		*105*	*65-135*			
Matrix Spike (1050373-MS1)	**Source: P105236-02**			Prepared & Analyzed: 05/16/01						
Gasoline	762	14.2	ppmv	780	ND	97.7	65-135			
Benzene	12.9	0.157	"	10.0	ND	129	65-135			
Toluene	58.1	0.133	"	51.3	ND	113	65-135			
Ethylbenzene	12.6	0.115	"	10.6	ND	119	65-135			
Xylenes (total)	61.7	0.115	"	53.3	ND	116	65-135			
Methyl tert-butyl ether	17.4	0.556	"	14.5	ND	120	65-135			
Surrogate: a,a,a-Trifluorotoluene	*58.9*		"	*50.3*		*117*	*65-135*			
Surrogate: 4-Bromofluorobenzene	*42.9*		"	*41.9*		*102*	*65-135*			

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1455 McDowell Blvd. North, Ste. D
Petaluma, CA 94954
(707) 792-1865
FAX (707) 792-0342
www.sequoialabs.com

Cambria Environmental - Emeryville	Project: ARCO	
6262 Hollis Street	Project Number: 2035/Albany	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	05/18/01 10:16

Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M - Quality Control

Sequoia Analytical - Petaluma

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1050373 - EPA 5030, waters										
Matrix Spike Dup (1050373-MSD1)	**Source: P105236-02**			Prepared & Analyzed: 05/16/01						
Gasoline	770	14.2	ppmv	780	ND	98.7	65-135	1.04	20	
Benzene	13.4	0.157	"	10.0	ND	134	65-135	3.80	20	
Toluene	58.5	0.133	"	51.3	ND	114	65-135	0.686	20	
Ethylbenzene	12.4	0.115	"	10.6	ND	117	65-135	1.60	20	
Xylenes (total)	61.2	0.115	"	53.3	ND	115	65-135	0.814	20	
Methyl tert-butyl ether	16.8	0.556	"	14.5	ND	116	65-135	3.51	20	
Surrogate: a,a,a-Trifluorotoluene	*63.7*		"	*50.3*		*127*	*65-135*			
Surrogate: 4-Bromofluorobenzene	*42.6*		"	*41.9*		*102*	*65-135*			
Batch 1050374 - EPA 5030, waters										
Blank (1050374-BLK1)				Prepared & Analyzed: 05/16/01						
Gasoline	ND	14.2	ppmv							
Benzene	ND	0.157	"							
Toluene	ND	0.133	"							
Ethylbenzene	ND	0.115	"							
Xylenes (total)	ND	0.115	"							
Methyl tert-butyl ether	ND	0.556	"							
Surrogate: a,a,a-Trifluorotoluene	*51.7*		"	*50.3*		*103*	*65-135*			
Surrogate: 4-Bromofluorobenzene	*42.8*		"	*41.9*		*102*	*65-135*			
LCS (1050374-BS1)				Prepared & Analyzed: 05/16/01						
Gasoline	803	14.2	ppmv	780		103	65-135			
Benzene	12.9	0.157	"	10.0		129	65-135			
Toluene	56.2	0.133	"	51.3		110	65-135			
Ethylbenzene	10.2	0.115	"	10.6		96.2	65-135			
Xylenes (total)	51.9	0.115	"	53.3		97.4	65-135			
Methyl tert-butyl ether	17.9	0.556	"	14.5		123	65-135			
Surrogate: a,a,a-Trifluorotoluene	*57.2*		"	*50.3*		*114*	*65-135*			
Surrogate: 4-Bromofluorobenzene	*45.5*		"	*41.9*		*109*	*65-135*			

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1455 McDowell Blvd. North, Ste. D
Petaluma, CA 94954
(707) 792-1865
FAX (707) 792-0342
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Cambria Environmental - Emeryville	Project: ARCO	
6262 Hollis Street	Project Number: 2035/Albany	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	05/18/01 10:16

Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M - Quality Control

Sequoia Analytical - Petaluma

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1050374 - EPA 5030, waters										
Matrix Spike (1050374-MS1)	**Source: P105266-01**			Prepared & Analyzed: 05/16/01						
Gasoline	787	14.2	ppmv	780	ND	101	65-135			
Benzene	13.1	0.157	"	10.0	ND	131	65-135			
Toluene	56.9	0.133	"	51.3	ND	111	65-135			
Ethylbenzene	10.5	0.115	"	10.6	ND	99.1	65-135			
Xylenes (total)	52.5	0.115	"	53.3	ND	98.5	65-135			
Methyl tert-butyl ether	17.9	0.556	"	14.5	ND	123	65-135			
Surrogate: a,a,a-Trifluorotoluene	*60.7*		"	*50.3*		*121*	*65-135*			
Surrogate: 4-Bromofluorobenzene	*44.9*		"	*41.9*		*107*	*65-135*			
Matrix Spike Dup (1050374-MSD1)	**Source: P105266-01**			Prepared & Analyzed: 05/16/01						
Gasoline	806	14.2	ppmv	780	ND	103	65-135	2.39	20	
Benzene	13.1	0.157	"	10.0	ND	131	65-135	0	20	
Toluene	58.1	0.133	"	51.3	ND	113	65-135	2.09	20	
Ethylbenzene	10.6	0.115	"	10.6	ND	100	65-135	0.948	20	
Xylenes (total)	53.7	0.115	"	53.3	ND	101	65-135	2.26	20	
Methyl tert-butyl ether	18.1	0.556	"	14.5	ND	125	65-135	1.11	20	
Surrogate: a,a,a-Trifluorotoluene	*58.1*		"	*50.3*		*116*	*65-135*			
Surrogate: 4-Bromofluorobenzene	*44.3*		"	*41.9*		*106*	*65-135*			

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Cambria Environmental - Emeryville	Project: ARCO	
6262 Hollis Street	Project Number: 2035/Albany	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	05/18/01 10:16

Notes and Definitions

QR-04	The results between the primary and confirmation columns varied by greater than 40% RPD. The results may still be useful for their intended purpose.
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.

Chain of Custody

ARCO Facility no. 2035	City (Facility) Albany	Project manager (Consultant) Ron Scheel	Laboratory name
ARCO engineer Paul Supple	Telephone no. (ARCO) 925-299-8891	Telephone no. (Consultant) 510 450 1983	Fax no. (Consultant) 510 450 8295	Contract number
Consultant name Cambria	Address (Consultant) 6262 Hollis St, Emeryville		Method of shipment

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/MTBE EPA M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ Semi VOA ☐ VOA ☐	CAM METALS EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐	
FN		1			X			5-14-01	2:30P		X				P105285-01						
EF		1			X			5-14-01	2:30P		X						↓				-02

Special detection Limit/reporting: Report Results in ppm. Lowest possible detection limit

Special QA/QC

Remarks

Lab number

COOLER CUSTODY SEALS INTACT ☐
NOT INTACT ☐ N/A
COOLER TEMPERATURE 22 °C

Turnaround time

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

Condition of sample:		Temperature received:	
Relinquished by sampler	Date 5-15-01 Time 1:05	Received by	
Relinquished by	Date Time	Received by	
Relinquished by	Date Time	Received by	Date Time

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

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Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
www.sequoialabs.com

21 May, 2001

Jason Olson
Cambria - Emeryville
6262 Hollis St.
Emeryville, CA 94608

RE: Arco
Sequoia Report: MKE0291

Enclosed are the results of analyses for samples received by the laboratory on 05/11/01 15:01. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeff Smyly
Project Manager

CA ELAP Certificate #1210

Sequoia Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
www.sequoialabs.com

Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco # 2035	**Reported:**
Emeryville CA, 94608	Project Manager: Jason Olson	05/21/01 10:31

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	MKE0291-01	Water	05/04/01 16:40	05/11/01 15:01
MW-2	MKE0291-02	Water	05/04/01 16:00	05/11/01 15:01
MW-3	MKE0291-03	Water	05/04/01 15:25	05/11/01 15:01
MW-4	MKE0291-04	Water	05/04/01 17:55	05/11/01 15:01
MW-5	MKE0291-05	Water	05/04/01 18:00	05/11/01 15:01
MW-6	MKE0291-06	Water	05/04/01 18:05	05/11/01 15:01
RW-1	MKE0291-07	Water	05/04/01 17:50	05/11/01 15:01
DUP	MKE0291-08	Water	05/04/01 00:00	05/11/01 15:01

Sequoia Analytical - Morgan Hill

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.

Jeff Smyly, Project Manager

Sequoia Analytical

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Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
www.sequoialabs.com

Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco # 2035	**Reported:**
Emeryville CA, 94608	Project Manager: Jason Olson	05/21/01 10:31

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

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (MKE0291-01) Water Sampled: 05/04/01 16:40 Received: 05/11/01 15:01									
Purgeable Hydrocarbons	**714**	500	ug/l	10	1E15002	05/15/01	05/15/01	DHS LUFT	P-03
Benzene	**392**	5.00	"	"	"	"	"	"	
Toluene	ND	5.00	"	"	"	"	"	"	
Ethylbenzene	ND	5.00	"	"	"	"	"	"	
Xylenes (total)	ND	5.00	"	"	"	"	"	"	
Methyl tert-butyl ether	**26.1**	25.0	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*96.8 %*		*70-130*	"	"	"	"	
MW-2 (MKE0291-02) Water Sampled: 05/04/01 16:00 Received: 05/11/01 15:01									
Purgeable Hydrocarbons	ND	50.0	ug/l	1	1E15002	05/15/01	05/15/01	DHS LUFT	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	**32.7**	2.50	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*97.7 %*		*70-130*	"	"	"	"	
MW-3 (MKE0291-03) Water Sampled: 05/04/01 15:25 Received: 05/11/01 15:01									
Purgeable Hydrocarbons	**316**	50.0	ug/l	1	1E15002	05/15/01	05/15/01	DHS LUFT	P-03
Benzene	**15.7**	0.500	"	"	"	"	"	"	
Toluene	**1.14**	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	**178**	2.50	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*94.2 %*		*70-130*	"	"	"	"	

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885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco # 2035	**Reported:**
Emeryville CA, 94608	Project Manager: Jason Olson	05/21/01 10:31

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

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-4 (MKE0291-04) Water Sampled: 05/04/01 17:55 Received: 05/11/01 15:01									
Purgeable Hydrocarbons	ND	50.0	ug/l	1	1E15002	05/15/01	05/15/01	DHS LUFT	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	**83.6**	2.50	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*96.3 %*	*70-130*		"	"	"	"	
MW-5 (MKE0291-05) Water Sampled: 05/04/01 18:00 Received: 05/11/01 15:01									
Purgeable Hydrocarbons	ND	50.0	ug/l	1	1E15002	05/15/01	05/15/01	DHS LUFT	
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		*99.4 %*	*70-130*		"	"	"	"	
MW-6 (MKE0291-06) Water Sampled: 05/04/01 18:05 Received: 05/11/01 15:01									
Purgeable Hydrocarbons	ND	50.0	ug/l	1	1E15002	05/15/01	05/15/01	DHS LUFT	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	**10.5**	2.50	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*98.8 %*	*70-130*		"	"	"	"	

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885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco # 2035	**Reported:**
Emeryville CA, 94608	Project Manager: Jason Olson	05/21/01 10:31

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

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
RW-1 (MKE0291-07) Water Sampled: 05/04/01 17:50 Received: 05/11/01 15:01									
Purgeable Hydrocarbons	**244000**	100000	ug/l	2000	1E17003	05/17/01	05/17/01	DHS LUFT	P-01
Benzene	**8420**	1000	"	"	"	"	"	"	
Toluene	**56000**	1000	"	"	"	"	"	"	
Ethylbenzene	**5660**	1000	"	"	"	"	"	"	
Xylenes (total)	**36200**	1000	"	"	"	"	"	"	
Methyl tert-butyl ether	**23400**	5000	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*118 %*	*70-130*		"	"	"	"	
DUP (MKE0291-08) Water Sampled: 05/04/01 00:00 Received: 05/11/01 15:01									
Purgeable Hydrocarbons	ND	50.0	ug/l	1	1E15002	05/15/01	05/15/01	DHS LUFT	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	**1.18**	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	**31.5**	2.50	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*99.0 %*	*70-130*		"	"	"	"	

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885 Jarvis Drive
Morgan Hill, CA 95037
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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco # 2035	**Reported:**
Emeryville CA, 94608	Project Manager: Jason Olson	05/21/01 10:31

MTBE by EPA Method 8260A

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-6 (MKE0291-06) Water Sampled: 05/04/01 18:05 Received: 05/11/01 15:01									
Methyl tert-butyl ether	**12.3**	1.00	ug/l	1	1E15007	05/14/01	05/14/01	EPA 8260A	
Surrogate: 1,2-Dichloroethane-d4		*94.5 %*	*70-130*		"	"	"	"	

Sequoia Analytical

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Morgan Hill, CA 95037
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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco # 2035	**Reported:**
Emeryville CA, 94608	Project Manager: Jason Olson	05/21/01 10:31

MTBE Confirmation by EPA Method 8260A

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
RW-1 (MKE0291-07) Water Sampled: 05/04/01 17:50 Received: 05/11/01 15:01									
Methyl tert-butyl ether	**11000**	1000	ug/l	1000	1E18008	05/17/01	05/17/01	EPA 8260A	
Surrogate: 1,2-Dichloroethane-d4		*99.9 %*	*70-130*		"	"	"	"	

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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco # 2035	**Reported:**
Emeryville CA, 94608	Project Manager: Jason Olson	05/21/01 10:31

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1E15002 - EPA 5030B [P/T]										
Blank (1E15002-BLK1)				Prepared & Analyzed: 05/15/01						
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	*9.52*		"	*10.0*		*95.2*	*70-130*			
LCS (1E15002-BS1)				Prepared & Analyzed: 05/15/01						
Benzene	9.35	0.500	ug/l	10.0		93.5	70-130			
Toluene	8.62	0.500	"	10.0		86.2	70-130			
Ethylbenzene	8.47	0.500	"	10.0		84.7	70-130			
Xylenes (total)	26.9	0.500	"	30.0		89.7	70-130			
Surrogate: a,a,a-Trifluorotoluene	*9.75*		"	*10.0*		*97.5*	*70-130*			
Matrix Spike (1E15002-MS1)		**Source: MKE0291-05**		Prepared & Analyzed: 05/15/01						
Benzene	10.5	0.500	ug/l	10.0	ND	105	60-140			
Toluene	10.2	0.500	"	10.0	ND	102	60-140			
Ethylbenzene	10.3	0.500	"	10.0	ND	103	60-140			
Xylenes (total)	30.5	0.500	"	30.0	ND	102	60-140			
Surrogate: a,a,a-Trifluorotoluene	*10.3*		"	*10.0*		*103*	*70-130*			
Matrix Spike Dup (1E15002-MSD1)		**Source: MKE0291-05**		Prepared & Analyzed: 05/15/01						
Benzene	10.9	0.500	ug/l	10.0	ND	109	60-140	3.74	25	
Toluene	10.6	0.500	"	10.0	ND	106	60-140	3.85	25	
Ethylbenzene	10.7	0.500	"	10.0	ND	107	60-140	3.81	25	
Xylenes (total)	31.6	0.500	"	30.0	ND	105	60-140	3.54	25	
Surrogate: a,a,a-Trifluorotoluene	*10.7*		"	*10.0*		*107*	*70-130*			

Sequoia Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco # 2035	**Reported:**
Emeryville CA, 94608	Project Manager: Jason Olson	05/21/01 10:31

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1E17003 - EPA 5030B [P/T]										
Blank (1E17003-BLK1)				Prepared & Analyzed: 05/17/01						
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	*10.3*		"	*10.0*		*103*	*70-130*			
LCS (1E17003-BS1)				Prepared & Analyzed: 05/17/01						
Purgeable Hydrocarbons	237	50.0	ug/l	250		94.8	70-130			
Surrogate: a,a,a-Trifluorotoluene	*12.2*		"	*10.0*		*122*	*70-130*			
Matrix Spike (1E17003-MS1)		**Source: MKE0324-01**		Prepared & Analyzed: 05/17/01						
Purgeable Hydrocarbons	258	50.0	ug/l	250	ND	103	60-140			
Surrogate: a,a,a-Trifluorotoluene	*14.3*		"	*10.0*		*143*	*70-130*			*S-02*
Matrix Spike Dup (1E17003-MSD1)		**Source: MKE0324-01**		Prepared & Analyzed: 05/17/01						
Purgeable Hydrocarbons	218	50.0	ug/l	250	ND	87.2	60-140	16.8	25	
Surrogate: a,a,a-Trifluorotoluene	*14.7*		"	*10.0*		*147*	*70-130*			*S-02*

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Morgan Hill, CA 95037
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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco # 2035	**Reported:**
Emeryville CA, 94608	Project Manager: Jason Olson	05/21/01 10:31

MTBE by EPA Method 8260A - Quality Control
Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1E15007 - EPA 5030B P/T										
Blank (1E15007-BLK1)				Prepared & Analyzed: 05/14/01						
Methyl tert-butyl ether	ND	1.00	ug/l							
Surrogate: 1,2-Dichloroethane-d4	*9.28*		"	*10.0*		*92.8*	*70-130*			
LCS (1E15007-BS1)				Prepared & Analyzed: 05/14/01						
Methyl tert-butyl ether	11.3	1.00	ug/l	10.0		113	70-130			
Surrogate: 1,2-Dichloroethane-d4	*9.44*		"	*10.0*		*94.4*	*70-130*			
Matrix Spike (1E15007-MS1)		**Source: MKE0250-01**		Prepared & Analyzed: 05/14/01						
Methyl tert-butyl ether	28700	1000	ug/l	10000	17800	109	70-130			
Surrogate: 1,2-Dichloroethane-d4	*8.89*		"	*10.0*		*88.9*	*70-130*			
Matrix Spike Dup (1E15007-MSD1)		**Source: MKE0250-01**		Prepared & Analyzed: 05/14/01						
Methyl tert-butyl ether	26100	1000	ug/l	10000	17800	83.0	70-130	9.49	25	
Surrogate: 1,2-Dichloroethane-d4	*9.16*		"	*10.0*		*91.6*	*70-130*			

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885 Jarvis Drive
Morgan Hill, CA 95037
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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco # 2035	**Reported:**
Emeryville CA, 94608	Project Manager: Jason Olson	05/21/01 10:31

MTBE Confirmation by EPA Method 8260A - Quality Control
Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1E18008 - EPA 5030B P/T										
Blank (1E18008-BLK1)				Prepared & Analyzed: 05/17/01						
Methyl tert-butyl ether	ND	1.00	ug/l							
Surrogate: 1,2-Dichloroethane-d4	*8.89*		"	*10.0*		*88.9*	*70-130*			
LCS (1E18008-BS1)				Prepared & Analyzed: 05/17/01						
Methyl tert-butyl ether	11.5	1.00	ug/l	10.0		115	70-130			
Surrogate: 1,2-Dichloroethane-d4	*9.45*		"	*10.0*		*94.5*	*70-130*			
Matrix Spike (1E18008-MS1)		**Source: MKE0329-01**		Prepared & Analyzed: 05/17/01						
Methyl tert-butyl ether	11.3	1.00	ug/l	10.0	ND	106	70-130			
Surrogate: 1,2-Dichloroethane-d4	*9.48*		"	*10.0*		*94.8*	*70-130*			
Matrix Spike Dup (1E18008-MSD1)		**Source: MKE0329-01**		Prepared & Analyzed: 05/17/01						
Methyl tert-butyl ether	11.9	1.00	ug/l	10.0	ND	112	70-130	5.17	25	
Surrogate: 1,2-Dichloroethane-d4	*9.55*		"	*10.0*		*95.5*	*70-130*			

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885 Jarvis Drive
Morgan Hill, CA 95037
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FAX (408) 782-6308
www.sequoialabs.com

Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco # 2035	**Reported:**
Emeryville CA, 94608	Project Manager: Jason Olson	05/21/01 10:31

Notes and Definitions

P-01	Chromatogram Pattern: Gasoline C6-C12
P-03	Chromatogram Pattern: Unidentified Hydrocarbons C6-C12
S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample.
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

AR Products Company
Division of Atlantic Richfield Company

Chain of Custody

Task Order No.: 27116.00

ARCO Facility no.: 2035	City (Facility): Albany	Project manager (Consultant): Ron Scheele / Jason Olson	Laboratory name: Sequoia
ARCO engineer: Paul Supple	Telephone no. (ARCO): 925-299-8891	Telephone no. (Consultant): 510-450-1983	Fax no. (Consultant): 510-450-8295
Consultant name: CAMBRIA ENV. TECH	Address (Consultant): 6262 Hollis St, Emeryville CA 94608		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/TPHg MTBE EPA M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ Semi VOA ☐ VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐	MTBE by 8260
MW-1	01	4		X		X	X	5-4-01	4:40		X										
MW-2	02	4		X		X	X	5-4-01	4:00		X										
MW-3	03	4		X		X	X	5-4-01	3:25		X										
MW-4	04	4		X		X	X	5-4-01	5:55		X										
MW-5	05	4		X		X	X	5-4-01	6:00		X										
MW-6	06	4		X		X	X	5-4-01	6:05		X										X
RW-1	07	4		X		X	X	5-4-01	5:50		X										
DUP	08	4		X		X	X	5-4-01			X										

Special detection Limit/reporting: Lowest Possible

Special QA/QC:

Method of shipment:

Remarks:
MW-6
MTBE by 8260

Lab number: MKE0291

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

Courier Typed
per Jason
8260 MTBE - MW-6
5-8-01 5:00 P.M

Condition of sample:

Temperature received:

	Date	Time	
Relinquished by sampler	5-4-01	1900	Received by: SECURED LOCATION
Relinquished by	8 May 01	1425	Received by: 5/8/01 1425
Relinquished by	5/9/01	1400	Received by laboratory: Date 5-11-01 Time 1501

White copy — ARCO Environmental Engineering; Pink copy — Consultant

JUL. 24. 2001 3:32PM NO. 1623 P. 2

Sequoia
Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
www.sequoialabs.com

18 June, 2001

Ron Scheele
Cambria - Emeryville
6262 Hollis St.
Emeryville, CA 94608

RE: Arco
Sequoia Report: MKF0112

Enclosed are the results of analyses for samples received by the laboratory on 06/06/01 12:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeff Smyly
Project Manager

CA ELAP Certificate #1210

Sequoia Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco 2035	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	06/18/01 10:11

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
IN	MKF0112-01	Air	06/05/01 12:30	06/06/01 12:55
EFF	MKF0112-02	Air	06/05/01 12:30	06/06/01 12:55

Sequoia Analytical - Morgan Hill

Jeff Smyly, Project Manager

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.

Sequoia Analytical

885 Jarvis Drive
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(408) 776-9600
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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco 2035	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	06/18/01 10:11

- Total Purgeable Hydrocarbons (C6-C12) and BTEX in Air by DHS LUFT

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
IN (MKF0112-01) Air Sampled: 06/05/01 12:30 Received: 06/06/01 12:55									
Purgeable Hydrocarbons	**6.6**	2.4	ppmv	1	1F07002	06/07/01	06/07/01	DHS LUFT	P-01
Benzene	ND	0.31	"	"	"	"	"	"	
Toluene	**0.41**	0.027	"	"	"	"	"	"	
Ethylbenzene	**0.072**	0.023	"	"	"	"	"	"	
Xylenes (total)	**0.32**	0.023	"	"	"	"	"	"	
Methyl tert-butyl ether	**2.2**	0.14	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*112 %*	*70-130*		"	"	"	"	
EFF (MKF0112-02) Air Sampled: 06/05/01 12:30 Received: 06/06/01 12:55									
Purgeable Hydrocarbons	ND	2.4	ppmv	1	1F07002	06/07/01	06/07/01	DHS LUFT	
Benzene	ND	0.31	"	"	"	"	"	"	
Toluene	ND	0.027	"	"	"	"	"	"	
Ethylbenzene	ND	0.023	"	"	"	"	"	"	
Xylenes (total)	**0.068**	0.023	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.14	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*106 %*	*70-130*		"	"	"	"	

Sequoia Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
www.sequoialabs.com

Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco 2035	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	06/18/01 10:11

Total Purgeable Hydrocarbons (C6-C12) and BTEX in Air by DHS LUFT - Quality Control
Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1F07002 - EPA 5030B [P/T]										
Blank (1F07002-BLK1)				Prepared & Analyzed: 06/07/01						
Purgeable Hydrocarbons	ND	2.4	ppmv							
Benzene	ND	0.31	"							
Toluene	ND	0.027	"							
Ethylbenzene	ND	0.023	"							
Xylenes (total)	ND	0.023	"							
Methyl tert-butyl ether	ND	0.14	"							
Surrogate: a,a,a-Trifluorotoluene	*0.00196*		"	*0.00200*		*98.0*	*70-130*			

Sequoia Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
www.sequoialabs.com

Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco 2035	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	06/18/01 10:11

Notes and Definitions

P-01	Chromatogram Pattern: Gasoline C6-C12
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. 27116.00

Chain of Custody

ARCO Facility no. 2035	City (Facility) Albany	Project manager (Consultant) Ron Scheele	Laboratory name Sequoia
ARCO engineer Paul Supple	Telephone no. (ARCO) 925.799.8891	Telephone no. (Consultant) 510-450-1983	Fax no. (Consultant) 510-450-8295
Consultant name CAMBRIA	Address (Consultant) 6262 Hollis Street, Emeryville CA		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 M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ VOAs ☐ VOAs ☐	Semi CAM METALS EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐ ☐	BTEX, TPHg, MTBE
IN		1			AIR			6-5-01	1230												X
EFF		1			AIR			6-5-01	1230												X

Method of shipment: MKF 0112

Special detection Limit/reporting: ~~Lowest~~ Possible

Special QA/QC

Remarks: Report in ppmv. Reporting limit of 10 ppmv. (20ml injection volume)

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:

Relinquished by sampler	Date	Time	Received by
	6-5-01	1600	Secured Location
Relinquished by	6-6-01		Received by 6/6/01 1145
Relinquished by	6/6/01	1255	Received by Date 6/6/01 Time 1255

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

6/6/01 1940

Sequoia Analytical

1551 Industrial Road
San Carlos, CA 94070-4111
(650) 232-9600
FAX (650) 232-9612
www.sequoialabs.com

June 14 , 2001

Ron Scheele
Cambria Environmental
1144 65th St., Suite C.
Oakland, CA 94608
RE: ARCO (1) / L106031

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

Sincerely,

Latonya K. Pelt

Latonya Pelt
Project Manager

CA ELAP Certificate Number 2360

Cambria Environmental	Project: ARCO (1)	
1144 65th St., Suite C.	Project Number: ARCO#2035, Albany	**Reported:**
Oakland CA, 94608	Project Manager: Ron Scheele	06/14/01 06:25

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-5	L106031-01	Water	05/31/01 09:45	06/06/01 11:55

Cambria Environmental	Project: ARCO (1)	
1144 65th St., Suite C.	Project Number: ARCO#2035, Albany	**Reported:**
Oakland CA, 94608	Project Manager: Ron Scheele	06/14/01 06:25

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

Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
S-5 (L106031-01) Water Sampled: 05/31/01 09:45 Received: 06/06/01 11:55									
Purgeable Hydrocarbons as Gasoline	**310000**	25000	ug/l	500	1060045	06/12/01	06/12/01	DHS LUFT	P-01
Benzene	**3000**	250	"	"	"	"	"	"	
Toluene	**11000**	250	"	"	"	"	"	"	
Ethylbenzene	**4000**	250	"	"	"	"	"	"	
Xylenes (total)	**34000**	250	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	2500	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*105 %*	*70-130*		"	"	"	"	

Cambria Environmental	Project: ARCO (1)	
1144 65th St., Suite C.	Project Number: ARCO#2035, Albany	Reported:
Oakland CA, 94608	Project Manager: Ron Scheele	06/14/01 06:25

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

Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1060045 - EPA 5030B (P/T)										
Blank (1060045-BLK1)				Prepared & Analyzed: 06/12/01						
Purgeable Hydrocarbons as Gasoline	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	5.0	"							
Surrogate: a,a,a-Trifluorotoluene	*9.76*		"	*10.0*		*97.6*	*70-130*			
LCS (1060045-BS1)				Prepared & Analyzed: 06/12/01						
Benzene	7.98	0.50	ug/l	10.0		79.8	70-130			
Toluene	7.79	0.50	"	10.0		77.9	70-130			
Ethylbenzene	7.95	0.50	"	10.0		79.5	70-130			
Xylenes (total)	23.6	0.50	"	30.0		78.7	70-130			
Surrogate: a,a,a-Trifluorotoluene	*9.48*		"	*10.0*		*94.8*	*70-130*			
LCS (1060045-BS2)				Prepared & Analyzed: 06/12/01						
Purgeable Hydrocarbons as Gasoline	261	50	ug/l	250		104	70-130			
Surrogate: a,a,a-Trifluorotoluene	*10.3*		"	*10.0*		*103*	*70-130*			
Matrix Spike (1060045-MS1)		**Source: L106018-04**		Prepared & Analyzed: 06/12/01						
Benzene	8.52	0.50	ug/l	10.0	ND	85.2	60-140			
Toluene	8.23	0.50	"	10.0	ND	82.3	60-140			
Ethylbenzene	8.34	0.50	"	10.0	ND	83.4	60-140			
Xylenes (total)	25.5	0.50	"	30.0	ND	85.0	60-140			
Surrogate: a,a,a-Trifluorotoluene	*9.18*		"	*10.0*		*91.8*	*70-130*			
Matrix Spike Dup (1060045-MSD1)		**Source: L106018-04**		Prepared: 06/12/01 Analyzed: 06/13/01						
Benzene	9.44	0.50	ug/l	10.0	ND	94.4	60-140	10.2	25	
Toluene	9.09	0.50	"	10.0	ND	90.9	60-140	9.93	25	
Ethylbenzene	9.03	0.50	"	10.0	ND	90.3	60-140	7.94	25	
Xylenes (total)	28.0	0.50	"	30.0	ND	93.3	60-140	9.35	25	
Surrogate: a,a,a-Trifluorotoluene	*9.45*		"	*10.0*		*94.5*	*70-130*			

Cambria Environmental	Project: ARCO (1)	
1144 65th St., Suite C.	Project Number: ARCO#2035, Albany	**Reported:**
Oakland CA, 94608	Project Manager: Ron Scheele	06/14/01 06:25

Notes and Definitions

P-01	Chromatogram Pattern: Gasoline C6-C12
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.

Chain of Custody

ARCO Facility no. 2035	City (Facility) Albany	Project manager (Consultant) Ron Scheele	Laboratory name Sequoia - Simi Carlos
ARCO engineer	Telephone no. (ARCO)	Telephone no. (Consultant) 510-450-1483	Fax no. (Consultant) 510-420-9170
Consultant name Cambria Environmental		Address (Consultant) 1144 65th Street, Suite C, Oakland 94608	Contract number

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX/MTBE 602/EPA 8020	BTEX/TPH EPA M602/8020/8015	TPH Modified 8015 Gas X Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ VOA ☐ Semi VOA ☐	CAM METALS EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐		
S-5	01			X		X		5-31-01	945	X		X										

Special detection Limit/reporting

Method of shipment

Special QA/QC

Billing #: WA #27116

Remarks

*Confirm the highest detected MTBE by 8260

Lab number 106031

Turnaround time

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

Condition of sample:

Temperature received:

	Date	Time		Date	Time
Relinquished by sampler [signature] by Timothy Myers	6-5-01		Received by [signature]	6/6/01	830
Relinquished by [signature]	6/6/01	1155	Received by K. Cox	6/6/01	1155
Relinquished by	Date	Time	Received by	Date	Time

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

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APPENDIX C

FIELD DATA SHEETS

CAMBRIA

WELL DEPTH MEASUREMENTS

Well ID	Order	Time	Top of Screen	DTB	DTP	DTW	DOP	Casing Dia	Comment
MW-1	6	2:45	15'	30.1'		9.28		4"	
MW-2	4	2:38	20'	29.1'		10.15		4"	
MW-3	3	2:35	12.5'	33.5'		10.17		4"	
MW-4	5	2:40	8.5'	25.8'		9.21		4"	
MW-5	1	2:30	8.5'	25.1'		9.42		4"	
MW-6	2	2:33	8'	24.8'		11.29		2"	
RW-1	7	2:50	11'	25.4'		8:57		6"	

Project Name: **ARCO 2035**

Project Number: **438-1608**

Measured By: S. Hill

Date: 5-4-01

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CAMBRIA

WELL SAMPLING FORM

Project Name: **ARCO 2035**	Cambria Mgr: **Ron Scheele**	Well ID: **MW-1**
Project Number: **438 - 1608**	Date: 5-4-01	Well Yield:
Site Address: **1001 San Pablo Ave, Albany**	Sampling Method: **Disposable bailer**	Well Diameter: 4" pvc
		Technician(s): SS
Initial Depth to Water: 9.25	Total Well Depth: 30.10	Water Column Height: 20.85
Volume/ft: 0.65	1 Casing Volume: 1355	3 Casing Volumes: 40.65
Purge/No Purge:		
Purging Device: **Submersible Pump**	Did Well Dewater?: no	Total Gallons Purged: 40
Start Purge Time: 4:10	Stop Purge Time: 4:34	Total Time: 24 mins

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. C	pH	Cond. uS	Comments
4:15	15	16.5	7.12	811	
4:25	30	16.6	7.59	890	
4:35	40	16.3	7.24	851	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-1	5-4-01	4:40	**4 VOA**	**HCL**	**TPHg, BTEX, MTBE**	**8021B**

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WELL SAMPLING FORM

Project Name: **ARCO 2035**	Cambria Mgr: **Ron Scheele**	Well ID: **MW-2**
Project Number: **438 - 1608**	Date: 5-4-01	Well Yield:
Site Address: **1001 San Pablo Ave, Albany**	Sampling Method: **Disposable bailer**	Well Diameter: 4" pvc
		Technician(s): SC
Initial Depth to Water: 10.15	Total Well Depth: 29.01	Water Column Height: 18.86
Volume/ft: 0.65	1 Casing Volume: 12.25	3 Casing Volumes: 36.77
Purge/No Purge:		
Purging Device: **Submersible Pump**	Did Well Dewater?: NO	Total Gallons Purged: 36
Start Purge Time: 3:35	Stop Purge Time: 3:54	Total Time: 19 mins

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. C	pH	Cond. uS	Comments
3:45	12	16.5	7.24	921	
3:50	24	16.8	7.13	1047	
3:55	36	16.2	7.19	1019	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-2	5-4-01	4:00	**4 VOA**	**HCL**	**TPHg, BTEX, MTBE**	**8021B**
DUP						

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WELL SAMPLING FORM

Project Name: **ARCO 2035**	Cambria Mgr: **Ron Scheele**	Well ID: **MW-3**
Project Number: **438 - 1608**	Date: 5-4-01	Well Yield:
Site Address: **1001 San Pablo Ave, Albany**	Sampling Method: **Disposable bailer**	Well Diameter: **4" pvc**
		Technician(s): SG
Initial Depth to Water: 10.17	Total Well Depth: 33.50	Water Column Height: 23.33
Volume/ft: 0.65	1 Casing Volume: 15.16	3 Casing Volumes: 45.48
Purge/No Purge:		
Purging Device: **Submersible Pump**	Did Well Dewater?: no	Total Gallons Purged: 45
Start Purge Time: 3:00	Stop Purge Time: 3:19	Total Time: 19 mins

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. C	pH	Cond. uS	Comments
3:05	15	15.4	7.42	2154	
3:15	30	15.7	7.57	2817	
3:20	45	15.7	7.59	2899	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-3	5-4-01	3:25	**4 VOA**	**HCL**	**TPHg, BTEX, MTBE**	**8021B**

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WELL SAMPLING FORM

Project Name: **ARCO 2035**	Cambria Mgr: **Ron Scheele**	Well ID: **MW-4**
Project Number: **438 - 1608**	Date: 5-4-01	Well Yield:
Site Address: **1001 San Pablo Ave, Albany**	Sampling Method: **Disposable bailer**	Well Diameter: 4" pvc
		Technician(s): SS
Initial Depth to Water: 9.21	Total Well Depth:	Water Column Height:
Volume/ft:	1 Casing Volume:	3 Casing Volumes:
Purge/No Purge:		
Purging Device: **Submersible Pump**	Did Well Dewater?:	Total Gallons Purged:
Start Purge Time:	Stop Purge Time:	Total Time:

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. C	pH	Cond. uS	Comments
	NO PURGE				

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-4	5-4-01	5:55	**4 VOA**	**HCL**	**TPHg, BTEX, MTBE**	**8021B**

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WELL SAMPLING FORM

Project Name: **ARCO 2035**	Cambria Mgr: **Ron Scheele**	Well ID: **MW-5**
Project Number: **438 - 1608**	Date: ~~5-4-01~~ 5-4-01	Well Yield:
Site Address: **1001 San Pablo Ave, Albany**	Sampling Method: **Disposable bailer**	Well Diameter: 4" **pvc**
		Technician(s): SG
Initial Depth to Water: 9.42	Total Well Depth:	Water Column Height:
Volume/ft:	1 Casing Volume:	3 Casing Volumes:
Purge/No Purge:		
Purging Device: **Submersible Pump**	Did Well Dewater?:	Total Gallons Purged:
Start Purge Time:	Stop Purge Time:	Total Time:

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. C	pH	Cond. uS	Comments
		NO PURGE			

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-5	5-4-01	6:00	**4 VOA**	**HCL**	**TPHg, BTEX, MTBE**	**8021B**

CAMBRIA

WELL SAMPLING FORM

Project Name: **ARCO 2035**	Cambria Mgr: **Ron Scheele**	Well ID: **MW-6**
Project Number: **438 - 1608**	Date: 5-4-01	Well Yield:
Site Address: **1001 San Pablo Ave, Albany**	Sampling Method: **Disposable bailer**	Well Diameter: 2" **pvc**
		Technician(s): SG
Initial Depth to Water: 11.29	Total Well Depth:	Water Column Height:
Volume/ft:	1 Casing Volume:	3 Casing Volumes:
Purge/No Purge:		
Purging Device: **Submersible Pump**	Did Well Dewater?:	Total Gallons Purged:
Start Purge Time:	Stop Purge Time:	Total Time:

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. C	pH	Cond. uS	Comments
	NO	purge			

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-6	5-4-01	6:05	**4 VOA**	**HCL**	**TPHg, BTEX, MTBE**	**8021B / 8260**

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CAM

WELL SAMPLING FORM

Project Name: **ARCO 2035**	Cambria Mgr: **Ron Scheele**	Well ID: **RW-1**
Project Number: **438 - 1608**	Date: 5-4-01	Well Yield:
Site Address: **1001 San Pablo Ave, Albany**	Sampling Method: **Disposable bailer**	Well Diameter: "pvc 6
		Technician(s): SG
Initial Depth to Water: 8.57	Total Well Depth: 25.40	Water Column Height: 16.83
Volume/ft: 1.47	1 Casing Volume: 24.74	3 Casing Volumes: 74.22
Purge/No Purge: Purge		
Purging Device: **Submersible Pump**	Did Well Dewater?: no	Total Gallons Purged: 75
Start Purge Time: 4:50	Stop Purge Time: 5:44	Total Time: 54 mins

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. C	pH	Cond. uS	Comments
5:15	25	16.5	7.90	1219	
5:30	50	15.3	7.51	1357	
5:45	75	15.2	7.32	1399	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
RW-1	5-4-01	5:50	**4 VOA**	**HCL**	**TPHg, BTEX, MTBE**	**8021B**