



Atlantic Richfield Company
(a BP affiliated company)

P.O. Box 6549
Moraga, California 94570
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October 19, 2005

Re: Third Quarter 2005 Groundwater Monitoring Report
ARCO Service Station #4977
2770 Castro Valley Blvd.
Castro Valley, California
ACEH Case No. 01-0097

I declare, that to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached document are true and correct.

Submitted by:

Paul Supple
Environmental Business Manager

Alameda County
OCT 21 2005
Environmental Health



October 19, 2005

Ms. Donna Drogos
Alameda County Environmental Health (ACEH)
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Alameda County
OCT 21 2005
Environmental Health

Re: Third Quarter 2005 Groundwater Monitoring Report
ARCO Service Station #4977
2770 Castro Valley Blvd
Castro Valley, California
ACEH Case No. 01-0097

Dear Ms. Drogos:

On behalf of Atlantic Richfield Company, a BP affiliated company, URS Corporation (URS) is submitting the *Third Quarter 2005 Groundwater Monitoring Report* for ARCO Service Station #4977, located at 2770 Castro Valley Boulevard, Castro Valley, California.

If you have any questions regarding this submission, please call (510) 874-3280.

Sincerely,

URS CORPORATION

Scott Robinson, P.G.
Project Manager



Enclosure: Third Quarter 2005 Groundwater Monitoring Report

cc: Mr. Paul Supple, Atlantic Richfield Company (RM), electronic copy uploaded to ENFOS

R E P O R T

**THIRD QUARTER 2005
GROUNDWATER MONITORING
REPORT**

ARCO SERVICE STATION #4977
2770 CASTRO VALLEY BLVD
CASTRO VALLEY, CALIFORNIA

Prepared for
RM

October 19, 2005

URS

URS Corporation
1333 Broadway, Suite 800
Oakland, California 94612

Date: October 19, 2005
Quarter: 3Q 05

THIRD QUARTER 2005 GROUNDWATER MONITORING REPORT

Facility No.: 4977 Address: 2770 Castro Valley Blvd, Castro Valley, CA
RM Environmental Business Manager: Paul Supple
Consulting Co./Contact Person: URS Corporation / Scott Robinson
Primary Agency: Alameda County Environmental Health (ACEH)
ACEH Case No.: 01-0097

WORK PERFORMED THIS QUARTER (Third – 2005):

1. Prepared and submitted the Second Quarter 2005 Groundwater Monitoring Report.
2. Performed the third quarter 2005 groundwater monitoring event on September 16, 2005.

WORK PROPOSED FOR NEXT QUARTER (Fourth – 2005):

1. Prepared and submitted this Third Quarter 2005 Groundwater Monitoring Report.
2. Perform the fourth quarter 2005 groundwater monitoring event.

SITE SUMMARY:

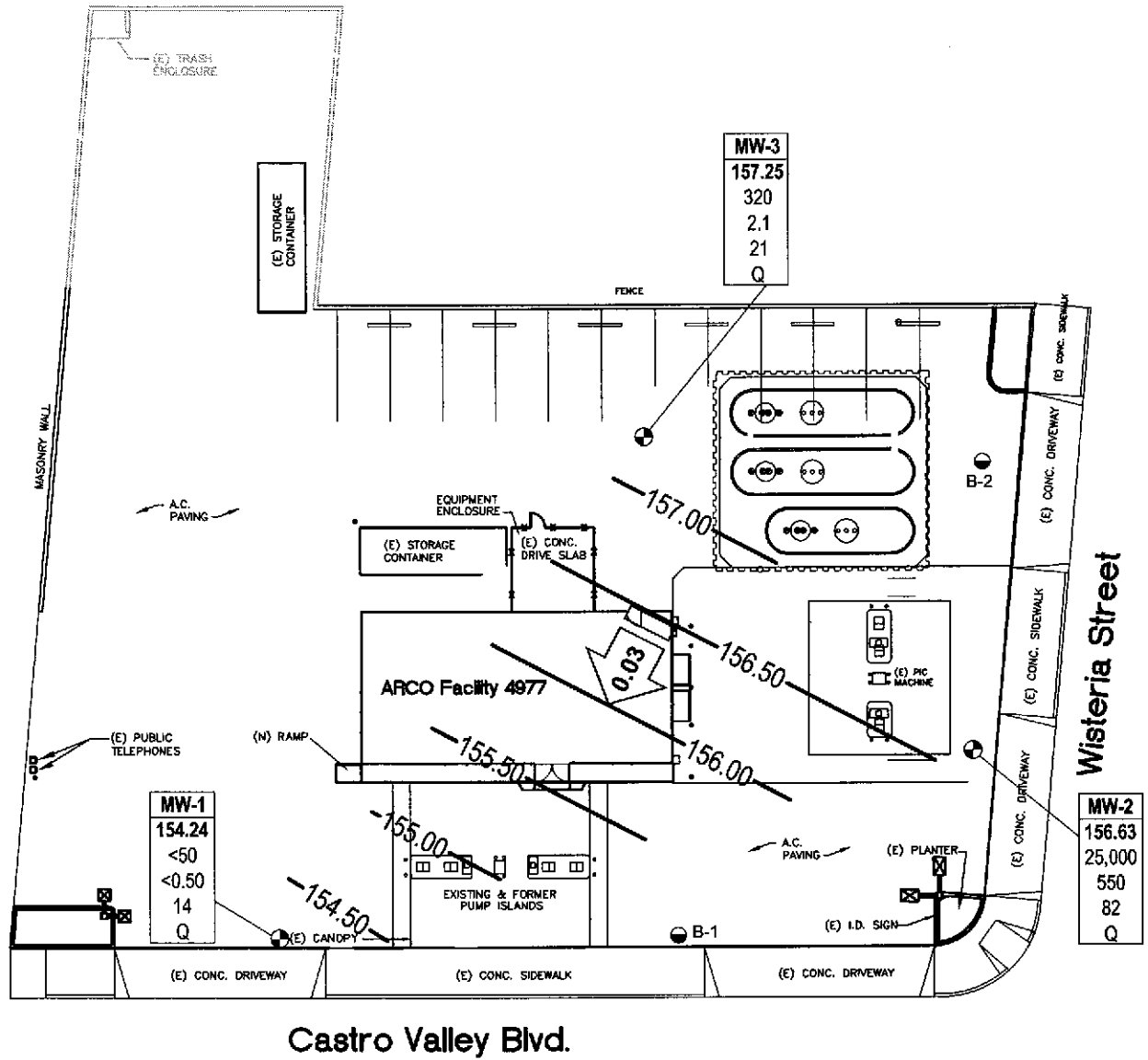
Current Phase of Project:	<u>Groundwater monitoring/sampling</u>
Frequency of Groundwater Sampling:	<u>Quarterly: Wells MW-1 through MW-3</u>
Frequency of Groundwater Monitoring:	<u>Quarterly</u>
Is Free Product (FP) Present On-Site:	<u>No</u>
Current Remediation Techniques:	<u>None</u>
Approximate Depth to Groundwater:	<u>7.28 ft (MW-3) to 9.20 ft (MW-1)</u>
Groundwater Gradient (direction):	<u>Southeast</u>
Groundwater Gradient (magnitude):	<u>0.03 feet per foot</u>

DISCUSSION:

During purging prior to sampling, well MW-1 dewatered at 5 gallons, well MW-2 dewatered at 10 gallons, and well MW-3 dewatered at 11 gallons. Gasoline range organics were detected at or above laboratory reporting limit in two of the three wells sampled this quarter at concentrations of 320 micrograms per liter ($\mu\text{g/L}$) (MW-3) and 25,000 $\mu\text{g/L}$ (MW-2). Benzene was detected at or above laboratory reporting limit in two wells at concentrations of 2.1 $\mu\text{g/L}$ (MW-3) and 550 $\mu\text{g/L}$ (MW-2). Ethylbenzene was detected at or above the laboratory reporting limit in two wells at concentrations of 5.4 $\mu\text{g/L}$ (MW-3) to 1,400 $\mu\text{g/L}$ (MW-2). Xylenes were detected at or above the laboratory reporting limit in all three wells at concentrations ranging from 0.60 $\mu\text{g/L}$ (MW-3) to 3,000 $\mu\text{g/L}$ (MW-2). Methyl-tert-butyl ether was detected at or above laboratory reporting limit in all three wells at concentrations ranging from 14 $\mu\text{g/L}$ (MW-1) to 82 $\mu\text{g/L}$ (MW-2). Tert-butyl alcohol was detected at or above laboratory reporting limit in one well at a concentration of 44 $\mu\text{g/L}$ (MW-3). No other fuel components were detected at or above their respective laboratory reporting limits.

ATTACHMENTS:

- Figure 1 - Groundwater Elevation Contour and Analytical Summary Map -- September 16, 2005
- Table 1 - Groundwater Elevation and Analytical Data
- Table 2 - Fuel Additives Analytical Data
- Table 3 - Groundwater Gradient Data
- Attachment A - Field Procedures and Field Data Sheets
- Attachment B - Laboratory Procedures, Certified Analytical Reports and Chain-of-Custody Records
- Attachment C - Error Check Reports and EDF/Geowell Submittal Confirmations



LEGEND

- MONITORING WELL
- SOIL BORING
- Well** WELL DESIGNATION
- ELEV** GROUNDWATER ELEVATION (FT ABOVE MSL)
- GRO** CONCENTRATION OF GRO, BENZENE AND MTBE IN GROUNDWATER (µg/L)
- Benzene**
- MTBE**
- Q** SAMPLING FREQUENCY
- < NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMITS
- Q SAMPLED QUARTERLY
- 157.00 GROUNDWATER ELEVATION CONTOUR (FT ABOVE MSL)
- GROUNDWATER FLOW DIRECTION AND GRADIENT (FT/FT)



NOTE: SITE MAP ADAPTED FROM DELTA ENVIRONMENTAL FIGURES. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

Oct 14, 2005 - 8:06pm K:\x_env_waste\BP_GEH\Stres\Scott_Robinson\Paul_Supplic\4977\Monitoring\2005 Dr. 3\Drawings\4977-3005-GV.dwg



Project No. 38487184
Arco Service Station #4977
2770 Castro Valley Boulevard
Castro Valley, California

GROUNDWATER ELEVATION CONTOUR
AND ANALYTICAL SUMMARY MAP
Third Quarter 2005 (September 16, 2005)

FIGURE
1

Table 1

Groundwater Elevation and Analytical Data

ARCO Service Station #4977

2770 Castro Valley Blvd., Castro Valley, CA

Well No.	Date	P/ NP	Footnotes/ Comments	TOC (ft MSL)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (ft bgs)	GWE (ft MSL)	GRO/TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO (mg/L)	pH
MW-1	4/19/2002	--		161.11	5.00	15.00	11.21	149.90	660	12	1.3	4.3	0.8	38	--	--
	9/27/2002	--		161.11	5.00	15.00	9.29	151.82	130	7.7	0.87	5.4	0.79	39	1.7	6.9
	12/16/2002	--	a	161.11	5.00	15.00	8.55	152.56	77	1.8	<0.50	0.69	<1.0	42	1.6	6.9
	3/11/2003	--		161.11	5.00	15.00	8.07	153.04	140	9.8	<0.50	5.6	<0.50	20	1.4	7.4
	6/17/2003	--		161.11	5.00	15.00	8.31	152.80	510	60	1.4	81	<1.0	23	2.2	7
	9/18/2003	--	b	161.11	5.00	15.00	9.45	151.66	72	2.4	1.4	1.6	1.5	39	2.7	7
	12/11/2003	P		161.11	5.00	15.00	8.80	152.31	79	1.5	<0.50	1.5	4.4	48	2.10	7.0
	03/11/2004	P		163.44	5.00	15.00	7.61	155.83	<50	1.3	<0.50	0.77	1.3	17	1.40	6.8
	06/02/2004	P		163.44	5.00	15.00	8.95	154.49	53	1.4	<0.50	0.93	<0.50	39	2.30	7.1
	09/22/2004	P		163.44	5.00	15.00	9.42	154.02	70	<0.50	<0.50	<0.50	<0.50	48	1.70	6.8
	12/15/2004	P		163.44	5.00	15.00	7.88	155.56	63	<0.50	<0.50	<0.50	<0.50	45	1.80	6.9
	03/07/2005	P		163.44	5.00	15.00	7.02	156.42	<50	<0.50	<0.50	<0.50	<0.50	4.0	2.40	6.8
	06/27/2005	P		163.44	5.00	15.00	7.53	155.91	52	2.0	<0.50	1.9	0.78	8.1	2.80	7.1
	09/16/2005	P		163.44	5.00	15.00	9.20	154.24	<50	<0.50	<0.50	<0.50	0.76	14	1.82	6.9
	MW-2	4/19/2002	--		161.87	5.00	15.00	6.59	155.28	28,000	970	120	860	6,900	760	--
9/27/2002		--		161.87	5.00	15.00	7.18	154.69	17,000	1,400	<50	1,200	3,700	1,400	1.5	6.8
12/16/2002		--	a	161.87	5.00	15.00	7.31	154.56	17,000	1,000	<50	980	3,300	980	1.9	6.8
3/11/2003		--		161.87	5.00	15.00	6.02	155.85	24,000	1,600	70	1,300	4,300	920	1.7	7.4
6/17/2003		--		161.87	5.00	15.00	6.31	155.56	28,000	1,300	55	1,300	4,500	610	1.4	6.9
9/18/2003		--		161.87	5.00	15.00	7.61	154.26	19,000	960	63	1,100	3,100	580	2.7	6.8
12/11/2003		P		161.87	5.00	15.00	6.50	155.37	29,000	710	53	1,300	3,800	490	2.0	7.0
03/11/2004		P		164.29	5.00	15.00	6.02	158.27	19,000	830	49	1,500	4,000	410	0.80	6.5
06/02/2004		P		164.29	5.00	15.00	7.14	157.15	25,000	680	<50	1,300	3,900	240	4.30	7.1
09/22/2004		--		164.29	5.00	15.00	7.63	156.66	15,000	980	<25	980	940	390	--	6.7
12/15/2004		P	c	164.29	5.00	15.00	6.48	157.81	22,000	610	26	1,300	3,200	290	0.30	6.9
03/07/2005		P		164.29	5.00	15.00	6.08	158.21	25,000	570	33	1,400	3,900	120	2.30	6.8
06/27/2005		P		164.29	5.00	15.00	6.90	157.39	24,000	630	32	1,200	2,900	86	2.50	7.2
09/16/2005		P		164.29	5.00	15.00	7.66	156.63	25,000	550	<25	1,400	3,000	82	1.41	7.0
MW-3		4/19/2002	--		162.14	5.00	15.00	6.94	155.20	1,200	29	1.1	43	62	1,700	--
	9/27/2002	--		162.14	5.00	15.00	8.26	153.88	740	7.8	<2.5	6.8	4.4	1,100	1	6.7
	12/16/2002	--	a	162.14	5.00	15.00	6.76	155.38	1,200	13	<10	170	88	910	2.3	6.8
	3/11/2003	--		162.14	5.00	15.00	6.92	155.22	<2,500	<25	<25	<25	<25	470	1.7	7.5
	6/17/2003	--		162.14	5.00	15.00	7.44	154.70	<1,000	<10	<10	14	<10	530	1.9	7

Table 1

Groundwater Elevation and Analytical Data

ARCO Service Station #4977

2770 Castro Valley Blvd., Castro Valley, CA

Well No.	Date	P/ NP	Footnotes/ Comments	TOC (ft MSL)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (ft bgs)	GWE (ft MSL)	GRO/ TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO (mg/L)	pH
MW-3	9/18/2003	-		162.14	5.00	15.00	8.43	153.71	470	4.8	<2.5	10	9.2	300	2.9	6.8
	12/11/2003	P		162.14	5.00	15.00	6.72	155.42	<500	<5.0	<5.0	7.0	13	180	1.90	6.9
	03/11/2004	P		164.53	5.00	15.00	6.09	158.44	360	1.9	<1.0	5.6	5.0	110	2.60	6.8
	06/02/2004	P		164.53	5.00	15.00	7.50	157.03	380	2.8	<0.50	8.0	2.1	43	3.60	7.3
	09/22/2004	P		164.53	5.00	15.00	8.00	156.53	270	<0.50	<0.50	0.54	<0.50	50	1.80	6.9
	12/15/2004	P		164.53	5.00	15.00	6.43	158.10	390	3.5	<0.50	20	3.7	49	1.10	6.9
	03/07/2005	P		164.53	5.00	15.00	6.12	158.41	1,900	13	<1.0	93	29	70	2.30	6.8
	06/27/2005	P		164.53	5.00	15.00	7.08	157.45	830	4.0	<0.50	13	2.8	33	3.30	7.3
	09/16/2005	P		164.53	5.00	15.00	7.28	157.25	320	2.1	<0.50	5.4	0.60	21	2.11	7.0

Table 1

Groundwater Elevation and Analytical Data

ARCO Service Station #4977

2770 Castro Valley Blvd., Castro Valley, CA

SYMBOLS AND ABBREVIATIONS:

< = not detected at or above laboratory reporting limits

--- = not measured, sampled, analyzed, applicable

ft bgs = feet below ground surface

DO = dissolved oxygen

DTW = depth to water in ft bgs

GRO/TPH-g = gasoline range organics (changed from C6-C10 to C4-C12 2Q2004)/total petroleum hydrocarbons in the gasoline range (C5-C9).

GWE = groundwater elevation in ft MSL

mg/L = milligrams per liter

ft MSL = feet above mean sea level

MTBE = methyl tertiary butyl ether analyzed by EPA Method 8021B unless otherwise noted. (before 12/16/02)

P/NP = Well was purged/not purged prior to sampling

pH = measured in field

TOC = top of casing measured in ft MSL

ug/L = micrograms per liter

FOOTNOTES:

a =TPH, BTEX, and MTBE analyzed by EPA Method 8260B beginning on 4th quarter sampling event (12/16/02)

b = This sample was originally analyzed within the EPA recommended hold time. Re-analysis for confirmation or dilution was performed past the recommended hold time. The results may still be used for their intended purpose.

c = Sheen

NOTES:

The data within this table collected prior to September 2002 was provided to URS by RM and their previous consultants. URS has not verified the accuracy of this information.

Beginning in the fourth quarter 2003, the laboratory modified the reported analyte list. TPHg was changed to GRO. The resulting data may be impacted by the potential inclusion of non-TPHg analytes within the requested fuel range resulting in a higher concentration being reported.

Wells were re-surveyed on 3/23/2004.

Beginning in the second quarter 2004, the carbon range for GRO was changed from C6-C10 to C4-C12.

Table 2

Fuel Additives Analytical Data

ARCO Service Station #4977
2770 Castro Valley Blvd., Castro Valley, CA

Well Number	Date Sampled	Ethanol (µg/L)	TBA (µg/L)	MTBE (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	Footnotes/ Comments
MW-1	12/16/2002	<50	<5.0	42	<0.50	<0.50	<0.50	<0.50	<0.50	
	3/11/2003	<100	<20	20	<0.50	<0.50	<0.50	<0.50	<0.50	
	6/17/2003	<200	<40	23	<1.0	<1.0	<1.0	<1.0	<1.0	
	9/18/2003	<100	<20	39	<0.50	<0.50	<0.50	<0.50	<0.50	a
	12/11/2003	<100	<20	48	<0.50	<0.50	<0.50	<0.50	<0.50	
	03/11/2004	<100	<20	17	<0.50	<0.50	<0.50	<0.50	<0.50	
	06/02/2004	<100	<20	39	<0.50	<0.50	<0.50	<0.50	<0.50	
	09/22/2004	<100	<20	48	<0.50	<0.50	<0.50	<0.50	<0.50	
	12/15/2004	<100	<20	45	<0.50	<0.50	<0.50	<0.50	<0.50	a
	03/07/2005	<100	<20	4.0	<0.50	<0.50	<0.50	<0.50	<0.50	
	06/27/2005	<100	<20	8.1	<0.50	<0.50	<0.50	<0.50	<0.50	
	09/16/2005	<100	<20	14	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-2	12/16/2002	<5,000	<500	980	<50	<50	<50	<50	<50	
	3/11/2003	<10,000	<2,000	920	<50	<50	<50	<50	<50	
	6/17/2003	<10,000	<2,000	610	<50	<50	<50	<50	<50	
	9/18/2003	<5,000	<1,000	580	<25	<25	<25	<25	<25	
	12/11/2003	<5,000	<1,000	490	<25	<25	<25	<25	<25	
	03/11/2004	<2,000	<400	410	<10	<10	<10	<10	<10	
	06/02/2004	<10,000	<2,000	240	<50	<50	<50	<50	<50	
	09/22/2004	<5,000	<1,000	390	<25	<25	<25	<25	<25	
	12/15/2004	<2,000	<400	290	<10	<10	<10	<10	<10	a
	03/07/2005	<5,000	<1,000	120	<25	<25	<25	<25	<25	
	06/27/2005	<5,000	<1,000	86	<25	<25	<25	<25	<25	
	09/16/2005	<5,000	<1,000	82	<25	<25	<25	<25	<25	
MW-3	12/16/2002	<1,000	<100	910	<10	<10	12	<10	<10	
	3/11/2003	<5,000	<1,000	470	<25	<25	<25	<25	<25	
	6/17/2003	<2,000	<400	530	<10	<10	<10	<10	<10	
	9/18/2003	<500	<100	300	<2.5	<2.5	3.2	<2.5	<2.5	
	12/11/2003	<1,000	<200	180	<5.0	<5.0	<5.0	<5.0	<5.0	
	03/11/2004	<200	570	110	<1.0	<1.0	<1.0	<1.0	<1.0	
	06/02/2004	<100	130	43	<0.50	<0.50	0.56	<0.50	<0.50	
	09/22/2004	<100	28	50	<0.50	<0.50	0.51	<0.50	<0.50	
	12/15/2004	<100	110	49	<0.50	0.52	0.61	<0.50	<0.50	a
03/07/2005	<200	190	70	<1.0	<1.0	<1.0	<1.0	<1.0		

Table 2

Fuel Additives Analytical Data

ARCO Service Station #4977

2770 Castro Valley Blvd., Castro Valley, CA

Well Number	Date Sampled	Ethanol (µg/L)	TBA (µg/L)	MTBE (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	Footnotes/ Comments
MW-3	06/27/2005	<100	130	33	<0.50	<0.50	<0.50	<0.50	<0.50	
	09/16/2005	<100	44	21	<0.50	<0.50	<0.50	<0.50	<0.50	

Table 2

Fuel Additives Analytical Data

ARCO Service Station #4977
2770 Castro Valley Blvd., Castro Valley, CA

SYMBOLS AND ABBREVIATIONS:

< = Not detected at or above laboratory reporting limit

-- = Not sampled, analyzed

1,2-DCA = 1,2-Dichloroethane

DIPE = Di-isopropyl ether

EDB = 1, 2 Dibromoethane

ETBE = Ethyl tert butyl ether

MTBE = Methyl tert-butyl ether

TAME = Tert-amyl methyl ether

TBA = Tert-butyl alcohol

ug/L = Micrograms per liter

FOOTNOTES:

a = This sample was originally analyzed within the EPA recommended hold time. Re-analysis for confirmation or dilution was performed past the recommended hold time. The results may still be used for their intended purpose.

Table 3

Groundwater Gradient Data
ARCO Service Station #4977
2770 Castro Valley Blvd., Castro Valley, CA

Date Sampled	Approximate Flow Direction	Approximate Hydraulic Gradient
4/19/2002	Southwest	0.038
9/27/2002	Southwest	0.021
12/16/2002	Southeast	0.029
3/11/2003	South	0.024
6/17/2003	South-Southwest	0.022
9/18/2003	South-Southwest	0.022
3/11/2004	South-Southwest	0.024
6/2/2004	South	0.025
9/22/2004	South	0.025
12/15/2004	South	0.020
3/7/2005	South	0.02
6/27/2005	South	0.01
9/16/2005	Southeast	0.03

Source : The data within this table collected prior to September 2002 was provided to URS by RM and their previous consultants. URS has not verified the accuracy of this information.

ATTACHMENT A
FIELD PROCEDURES AND FIELD DATA SHEETS

FIELD PROCEDURES

Sampling Procedures

The sampling procedure for each well consists first of measuring the water level and depth to bottom, and checking for the presence of free phase petroleum product (free product), using either an electronic indicator and a clear Teflon™ bailer or an oil-water interface probe. Wells not containing free product are purged approximately three casing volumes of water (or until dewatered) using a centrifugal pump, gas displacement pump, or bailer. Equipment and purging method used for the current sampling event is noted on the attached field data sheets. During purging, temperature, pH, and electrical conductivity are monitored to document that these parameters are stable prior to collecting samples. After purging, water levels are allowed to partially (approximately 80%) recover. Groundwater samples (both purge and no purge) are collected using a Teflon bailer, placed into appropriate Environmental Protection Agency- (EPA) approved containers, labeled, logged onto chain-of-custody records, and transported on ice to a California State-certified laboratory. Wells with free product are not sampled and free product is removed according to California Code of Regulation, Title 23, Div. 3, Chap. 16, Section 2655, UST Regulations.

ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>050916-WC-2</u>	Station # <u>4977</u>
Sampler: <u>WC</u>	Date: <u>9/16/05</u>
Well I.D.: <u>MW-1</u>	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth: <u>15.13</u>	Depth to Water: <u>9.20</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVE</u> Grade	D.O. Meter (if req'd): <u>XST</u> HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Purge Method: Bailer Sampling Method: Bailer
 Disposable Bailer Disposable Bailer
 Positive Air Displacement Extraction Port
 Electric Submersible Other: _____
 Extraction Pump
Other: _____

Top of Screen: _____ If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

<u>3.9</u>	X	<u>3</u>	=	<u>11.7</u>	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Conductivity (mS or <u>µS</u>)	Gals. Removed	Observations
<u>1119</u>	<u>76.9</u>	<u>6.8</u>	<u>1251</u>	<u>4</u>	<u>clear</u>
<u>1119 well dewatered @ 3 gallons</u>					
<u>1226</u>	<u>73.1</u>	<u>6.9</u>	<u>1328</u>	<u>7</u>	<u>cloudy / DTW=12.22</u>

Did well dewater? Yes No Gallons actually evacuated: 5

Sampling Time: 1228 Sampling Date: 9/16/05

Sample I.D.: MW-1 Laboratory: Pace Sequoia Other: _____

Analyzed for: GRO BTEX MTBE DRO Oxy's 1,2-DCA EDB Ethanol Other: _____

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	<u>282</u>	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:		mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 050916-WC-2	Station # 4977
Sampler: WC	Date: 9/16/05
Well I.D.: MW-2	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth: 14.71	Depth to Water: 7.60
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade:	D.O. Meter (if req'd): <u>YSI</u> HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Purge Method: <input type="checkbox"/> Bailer <input type="checkbox"/> Disposable Bailer <input type="checkbox"/> Positive Air Displacement <input checked="" type="checkbox"/> Electric Submersible <input type="checkbox"/> Extraction Pump Other: _____	Sampling Method: <input type="checkbox"/> Bailer <input checked="" type="checkbox"/> Disposable Bailer <input type="checkbox"/> Extraction Port Other: _____
---	---

Top of Screen: _____ If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

4.6	x	3	=	13.8	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Conductivity (mS or <u>µS</u>)	Gals. Removed	Observations
1140	73.6	7.0	827	5	
1141	73.6	6.9	818	5 10	
1141	well dewatered @			10 gallons	
1146	74.5	7.0	748	OTW = 5.47	clear
1246					

Did well dewater? Yes No Gallons actually evacuated: ~~5~~ 10

Sampling Time: ~~1146~~ 1246 Sampling Date: 9/16/05

Sample I.D.: MW-2 Laboratory: Pace Sequoia Other _____

Analyzed for: GRO BTEX MTBE DRO Oxy's 1,2-DCA EDB Ethanol Other: _____

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	1.41	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:		mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>050916-WC-2</u>	Station # <u>4977</u>
Sampler: <u>WC</u>	Date: <u>9/16/05</u>
Well I.D.: <u>MW-3</u>	Well Diameter: 2 3 <u>4</u> 6 8 <u> </u>
Total Well Depth: <u>15.05</u>	Depth to Water: <u>7.28</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>(PVC)</u> Grade	D.O. Meter (if req'd): <u>(H)</u> HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Purge Method: Bailer Sampling Method: Bailer

Disposable Bailer Disposable Bailer

Positive Air Displacement Extraction Port

Electric Submersible Other: _____

Extraction Pump

Other: _____

Top of Screen: _____ If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

<u>5.1</u>	x	<u>3</u>	=	<u>15.3</u>	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Conductivity (mS or <u>µS</u>)	Gals. Removed	Observations
<u>1128</u>	<u>74.5</u>	<u>6.9</u>	<u>758</u>	<u>6</u>	<u>clear</u>
<u>1129</u>	<u>74.4</u>	<u>7.0</u>	<u>753</u>	<u>11</u>	<u>"</u>
<u>1129</u>	<u>well dewatered @</u>			<u>11 gallons</u>	
<u>1136</u>	<u>75.2</u>	<u>7.0</u>	<u>746</u>	<u>OTW = 847</u>	<u>clear</u>
<u>1236</u>					

Did well dewater? Yes No Gallons actually evacuated: 11

Sampling Time: ~~1138~~ 1236 Sampling Date: 9/16/05

Sample I.D.: MW-3 Laboratory: Pace Séquoia Other _____

Analyzed for: <u>(GRO BTEX MTBE DRO Oxy's 1,2-DCA EDB Ethanol)</u> Other: _____		
D.O. (if req'd):	Pre-purge: _____ mg/L	Post-purge: <u>2.11</u> mg/L
O.R.P. (if req'd):	Pre-purge: _____ mV	Post-purge: _____ mV

BP GEM OIL COMPANY TYPE A BILL OF LADING

SOURCE RECORD **BILL OF LADING** FOR NON-HAZARDOUS PURGEWATER RECOVERED FROM GROUNDWATER WELLS AT BP GEM OIL COMPANY FACILITIES IN THE STATE OF CALIFORNIA. THE NON-HAZARDOUS PURGE- WATER WHICH HAS BEEN RECOVERED FROM GROUND- WATER WELLS IS COLLECTED BY THE CONTRACTOR, MADE UP INTO LOADS OF APPROPRIATE SIZE AND HAULED BY DILLARD ENVIRONMENTAL TO THE ALTAMONT LANDFILL AND RESOURCE RECOVERY FACILITY IN LIVERMORE, CALIFORNIA.

The contractor performing this work is BLAINE TECH SERVICES, INC. (BTS), 1680 Rogers Avenue, San Jose, CA 95112 (phone [408] 573-0555). Blaine Tech Services, Inc. is authorized by BP GEM OIL COMPANY to recover, collect, apportion into loads the Non-Hazardous Well Purgewater that is drawn from wells at the BP GEM Oil Company facility indicated below and deliver that purgewater to BTS. Transport routing of the Non-Hazardous Well Purgewater may be direct from one BP GEM facility to the designated destination point; from one BP GEM facility to the designated destination point via another BP GEM facility; from a BP GEM facility to the designated destination point via the contractor's facility, or any combination thereof. The Non-Hazardous Well Purgewater is and remains the property of BP GEM Oil Company.

This **Source Record BILL OF LADING** was initiated to cover the recovery of Non-Hazardous Well Purgewater from wells at the BP GEM Oil Company facility described below:

4977

Station #

2770 Castro Valley Blvd, CV

Station Address

Total Gallons Collected From Groundwater Monitoring Wells:

26 Gallons

added equip. rinse water

1 gal.

any other adjustments

X

TOTAL GALS. RECOVERED

27 gal.

loaded onto BTS vehicle #

22

BTS event #

050916-wc-2

time date

1300 9/16/05

signature

Will Crow

REC'D AT

Blaine Tech

time date

1630 9/16/05

unloaded by signature

Will Crow

ATTACHMENT B

**LABORATORY PROCEDURES,
CERTIFIED ANALYTICAL REPORTS,
AND CHAIN-OF-CUSTODY RECORDS**

LABORATORY PROCEDURES

Laboratory Procedures

The groundwater samples were analyzed for the presence of the chemicals mentioned in the chain of custody using standard EPA methods. The methods of analysis for the groundwater samples are documented in the certified analytical report. The certified analytical reports and chain-of-custody record are presented in this attachment. The analytical data provided by the laboratory approved by RM have been reviewed and verified by that laboratory.



4 October, 2005

Scott Robinson
URS Corporation [Arco]
1333 Broadway, Suite 800
Oakland, CA 94612

RE: ARCO #4977, Castro Valley, CA
Work Order: MOI0627

Enclosed are the results of analyses for samples received by the laboratory on 09/19/05 11:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamshid Kekobad
Project Manager

CA ELAP Certificate #1210

The results in this laboratory report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the BPGCLN Technical Specifications, applicable Federal, State, local regulations and certification requirements as well as the methodologies as described in laboratory SOPs reviewed by the BPGCLN. This entire report was reviewed and approved for release.

URS Corporation [Arco]
1333 Broadway, Suite 800
Oakland CA, 94612

Project: ARCO #4977, Castro Valley, CA
Project Number: G0C2H-0004
Project Manager: Scott Robinson

MOI0627
Reported:
10/04/05 10:06

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	MOI0627-01	Water	09/16/05 12:28	09/19/05 11:40
MW-2	MOI0627-02	Water	09/16/05 12:48	09/19/05 11:40
MW-3	MOI0627-03	Water	09/16/05 12:38	09/19/05 11:40
TB-4977-09162005	MOI0627-04	Water	09/16/05 00:00	09/19/05 11:40

The carbon range for the TPH-GRO has been changed from C6-C10 to C4-C12. The carbon range for TPH-DRO has been changed from C10-C28 to C10-C36. EPA 8015B has been modified to better meet the requirements of California regulatory agencies.

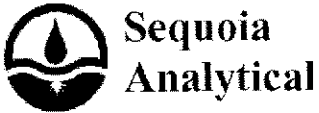
These samples were received with intact custody seals.



URS Corporation [Arco] 1333 Broadway, Suite 800 Oakland CA, 94612	Project: ARCO #4977, Castro Valley, CA Project Number: G0C2H-0004 Project Manager: Scott Robinson	MOI0627 Reported: 10/04/05 10:06
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**Volatile Organic Compounds by EPA Method 8260B
Sequoia Analytical - Morgan Hill**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (MOI0627-01) Water Sampled: 09/16/05 12:28 Received: 09/19/05 11:40									
tert-Amyl methyl ether	ND	0.50	ug/l	1	5I30007	09/30/05	09/30/05	EPA 8260B	
Benzene	ND	0.50	"	"	"	"	"	"	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
Ethanol	ND	100	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	14	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	0.76	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	ND	50	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>104 %</i>	<i>60-135</i>		"	"	"	"	
MW-2 (MOI0627-02) Water Sampled: 09/16/05 12:48 Received: 09/19/05 11:40									
tert-Amyl methyl ether	ND	25	ug/l	50	5I29011	09/29/05	09/29/05	EPA 8260B	
Benzene	550	25	"	"	"	"	"	"	
tert-Butyl alcohol	ND	1000	"	"	"	"	"	"	
Di-isopropyl ether	ND	25	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	25	"	"	"	"	"	"	
1,2-Dichloroethane	ND	25	"	"	"	"	"	"	
Ethanol	ND	5000	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	25	"	"	"	"	"	"	
Ethylbenzene	1400	25	"	"	"	"	"	"	
Methyl tert-butyl ether	82	25	"	"	"	"	"	"	
Toluene	ND	25	"	"	"	"	"	"	
Xylenes (total)	3000	25	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	25000	2500	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>89 %</i>	<i>60-135</i>		"	"	"	"	



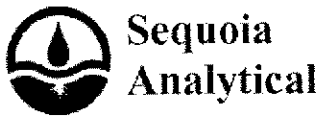
URS Corporation [Arco]
 1333 Broadway, Suite 800
 Oakland CA, 94612

Project: ARCO #4977, Castro Valley, CA
 Project Number: G0C2H-0004
 Project Manager: Scott Robinson

MOI0627
 Reported:
 10/04/05 10:06

Volatile Organic Compounds by EPA Method 8260B
Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (MOI0627-03) Water Sampled: 09/16/05 12:38 Received: 09/19/05 11:40									
tert-Amyl methyl ether	ND	0.50	ug/l	1	5I29011	09/29/05	09/29/05	EPA 8260B	
Benzene	2.1	0.50	"	"	"	"	"	"	
tert-Butyl alcohol	44	20	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
Ethanol	ND	100	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	5.4	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	21	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	0.60	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	320	50	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		88 %		60-135	"	"	"	"	



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

URS Corporation [Arco] 1333 Broadway, Suite 800 Oakland CA, 94612	Project: ARCO #4977, Castro Valley, CA Project Number: G0C2H-0004 Project Manager: Scott Robinson	MOI0627 Reported: 10/04/05 10:06
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Volatile Organic Compounds by EPA Method 8260B - Quality Control
Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5I29011 - EPA 5030B P/T / EPA 8260B

Blank (5I29011-BLK1)										
										Prepared & Analyzed: 09/29/05
tert-Amyl methyl ether	ND	0.50	ug/l							
Benzene	ND	0.50	"							
tert-Butyl alcohol	ND	20	"							
Di-isopropyl ether	ND	0.50	"							
1,2-Dibromoethane (EDB)	ND	0.50	"							
1,2-Dichloroethane	ND	0.50	"							
Ethanol	ND	100	"							
Ethyl tert-butyl ether	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Methyl tert-butyl ether	ND	0.50	"							
Toluene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Gasoline Range Organics (C4-C12)	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	2.12		"	2.50		85	60-135			

Laboratory Control Sample (5I29011-BS1)										
										Prepared & Analyzed: 09/29/05
tert-Amyl methyl ether	17.1	0.50	ug/l	15.0		114	80-115			
Benzene	4.95	0.50	"	5.16		96	65-115			
tert-Butyl alcohol	151	20	"	143		106	75-150			
Di-isopropyl ether	16.1	0.50	"	15.1		107	75-125			
1,2-Dibromoethane (EDB)	16.0	0.50	"	14.8		108	85-120			
1,2-Dichloroethane	15.1	0.50	"	14.7		103	85-130			
Ethanol	164	100	"	141		116	70-135			
Ethyl tert-butyl ether	17.3	0.50	"	15.0		115	75-130			
Ethylbenzene	6.99	0.50	"	7.54		93	75-135			
Methyl tert-butyl ether	7.52	0.50	"	7.02		107	65-125			
Toluene	35.5	0.50	"	37.2		95	85-120			
Xylenes (total)	37.1	0.50	"	41.4		90	85-125			
Gasoline Range Organics (C4-C12)	546	50	"	440		124	70-124			
Surrogate: 1,2-Dichloroethane-d4	2.32		"	2.50		93	60-135			

Sequoia Analytical - Morgan Hill

The results in this report apply to the samples analyzed in accordance with the chain of custody document. Unless otherwise stated, results are reported on a wet weight basis. This analytical report must be reproduced in its entirety.

URS Corporation [Arco]
 1333 Broadway, Suite 800
 Oakland CA, 94612

 Project: ARCO #4977, Castro Valley, CA
 Project Number: G0C2H-0004
 Project Manager: Scott Robinson

 MOI0627
 Reported:
 10/04/05 10:06

Volatile Organic Compounds by EPA Method 8260B - Quality Control Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5I29011 - EPA 5030B P/T / EPA 8260B										
Matrix Spike (5I29011-MS1)		Source: MOI0627-02			Prepared & Analyzed: 09/29/05					
tert-Amyl methyl ether	873	25	ug/l	752	ND	116	80-115			LM
Benzene	778	25	"	258	550	88	65-115			
tert-Butyl alcohol	7440	1000	"	7150	ND	104	75-120			
Di-isopropyl ether	820	25	"	757	ND	108	75-125			
1,2-Dibromoethane (EDB)	766	25	"	742	ND	103	85-120			
1,2-Dichloroethane	790	25	"	736	ND	107	85-130			
Ethanol	7580	5000	"	7070	ND	107	70-135			
Ethyl tert-butyl ether	888	25	"	751	ND	118	75-130			
Ethylbenzene	1650	25	"	377	1400	66	75-135			LN
Methyl tert-butyl ether	462	25	"	351	82	108	65-125			
Toluene	1770	25	"	1860	24	94	85-120			
Xylenes (total)	4710	25	"	2070	3000	83	85-125			LN
Gasoline Range Organics (C4-C12)	51100	2500	"	22000	25000	119	70-124			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	2.21		"	2.50		88	60-135			
Matrix Spike Dup (5I29011-MSD1)		Source: MOI0627-02			Prepared & Analyzed: 09/29/05					
tert-Amyl methyl ether	884	25	ug/l	752	ND	118	80-115	1	15	LM
Benzene	826	25	"	258	550	107	65-115	6	20	
tert-Butyl alcohol	7810	1000	"	7150	ND	109	75-120	5	25	
Di-isopropyl ether	839	25	"	757	ND	111	75-125	2	15	
1,2-Dibromoethane (EDB)	812	25	"	742	ND	109	85-120	6	15	
1,2-Dichloroethane	798	25	"	736	ND	108	85-130	1	20	
Ethanol	6580	5000	"	7070	ND	93	70-135	14	35	
Ethyl tert-butyl ether	898	25	"	751	ND	120	75-130	1	25	
Ethylbenzene	1750	25	"	377	1400	93	75-135	6	15	
Methyl tert-butyl ether	477	25	"	351	82	113	65-125	3	20	
Toluene	1880	25	"	1860	24	100	85-120	6	20	
Xylenes (total)	4940	25	"	2070	3000	94	85-125	5	20	
Gasoline Range Organics (C4-C12)	53600	2500	"	22000	25000	130	70-124	5	20	LM
<i>Surrogate: 1,2-Dichloroethane-d4</i>	2.36		"	2.50		94	60-135			

URS Corporation [Arco]
 1333 Broadway, Suite 800
 Oakland CA, 94612

 Project: ARCO #4977, Castro Valley, CA
 Project Number: G0C2H-0004
 Project Manager: Scott Robinson

 MOI0627
 Reported:
 10/04/05 10:06

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5130007 - EPA 5030B P/T / EPA 8260B
Blank (5130007-BLK1)

Prepared & Analyzed: 09/30/05

tert-Amyl methyl ether	ND	0.50	ug/l							
Benzene	ND	0.50	"							
tert-Butyl alcohol	ND	20	"							
Di-isopropyl ether	ND	0.50	"							
1,2-Dibromoethane (EDB)	ND	0.50	"							
1,2-Dichloroethane	ND	0.50	"							
Ethanol	ND	100	"							
Ethyl tert-butyl ether	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Methyl tert-butyl ether	ND	0.50	"							
Toluene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Gasoline Range Organics (C4-C12)	ND	50	"							

<i>Surrogate: 1,2-Dichloroethane-d4</i>	2.51	"	2.50	100	60-135
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Blank (5130007-BLK2)

Prepared & Analyzed: 09/30/05

tert-Amyl methyl ether	ND	0.50	ug/l							
Benzene	ND	0.50	"							
tert-Butyl alcohol	ND	20	"							
Di-isopropyl ether	ND	0.50	"							
1,2-Dibromoethane (EDB)	ND	0.50	"							
1,2-Dichloroethane	ND	0.50	"							
Ethanol	ND	100	"							
Ethyl tert-butyl ether	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Methyl tert-butyl ether	ND	0.50	"							
Toluene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Gasoline Range Organics (C4-C12)	ND	50	"							

<i>Surrogate: 1,2-Dichloroethane-d4</i>	2.67	"	2.50	107	60-135
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URS Corporation [Arco]
 1333 Broadway, Suite 800
 Oakland CA, 94612

 Project: ARCO #4977, Castro Valley, CA
 Project Number: G0C2H-0004
 Project Manager: Scott Robinson

 MOI0627
 Reported:
 10/04/05 10:06

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5I30007 - EPA 5030B P/T / EPA 8260B
Laboratory Control Sample (5I30007-BS1)

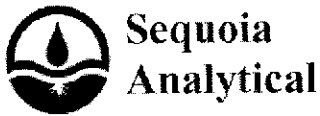
Prepared & Analyzed: 09/30/05

tert-Amyl methyl ether	14.8	0.50	ug/l	15.0		99	80-115			
Benzene	5.40	0.50	"	5.16		105	65-115			
tert-Butyl alcohol	150	20	"	143		105	75-150			
Di-isopropyl ether	15.2	0.50	"	15.1		101	75-125			
1,2-Dibromoethane (EDB)	14.4	0.50	"	14.8		97	85-120			
1,2-Dichloroethane	15.7	0.50	"	14.7		107	85-130			
Ethanol	154	100	"	141		109	70-135			
Ethyl tert-butyl ether	15.2	0.50	"	15.0		101	75-130			
Ethylbenzene	7.54	0.50	"	7.54		100	75-135			
Methyl tert-butyl ether	7.12	0.50	"	7.02		101	65-125			
Toluene	35.1	0.50	"	37.2		94	85-120			
Xylenes (total)	45.0	0.50	"	41.4		109	85-125			
Gasoline Range Organics (C4-C12)	487	50	"	440		111	70-124			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>2.38</i>		<i>"</i>	<i>2.50</i>		<i>95</i>	<i>60-135</i>			

Laboratory Control Sample (5I30007-BS2)

Prepared & Analyzed: 09/30/05

tert-Amyl methyl ether	15.2	0.50	ug/l	15.0		101	80-115			
Benzene	5.74	0.50	"	5.16		111	65-115			
tert-Butyl alcohol	161	20	"	143		113	75-150			
Di-isopropyl ether	15.4	0.50	"	15.1		102	75-125			
1,2-Dibromoethane (EDB)	15.0	0.50	"	14.8		101	85-120			
1,2-Dichloroethane	16.7	0.50	"	14.7		114	85-130			
Ethanol	175	100	"	141		124	70-135			
Ethyl tert-butyl ether	15.6	0.50	"	15.0		104	75-130			
Ethylbenzene	7.68	0.50	"	7.54		102	75-135			
Methyl tert-butyl ether	7.10	0.50	"	7.02		101	65-125			
Toluene	36.1	0.50	"	37.2		97	85-120			
Xylenes (total)	46.9	0.50	"	41.4		113	85-125			
Gasoline Range Organics (C4-C12)	488	50	"	440		111	70-124			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>2.46</i>		<i>"</i>	<i>2.50</i>		<i>98</i>	<i>60-135</i>			



URS Corporation [Arco] 1333 Broadway, Suite 800 Oakland CA, 94612	Project: ARCO #4977, Castro Valley, CA Project Number: G0C2H-0004 Project Manager: Scott Robinson	MOI0627 Reported: 10/04/05 10:06
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Volatile Organic Compounds by EPA Method 8260B - Quality Control
Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5I30007 - EPA 5030B P/T / EPA 8260B

Matrix Spike (5I30007-MS1)	Source: MOI0664-11			Prepared: 09/30/05 Analyzed: 10/01/05						
tert-Amyl methyl ether	774	25	ug/l	752	12	101	80-115			
Benzene	406	25	"	258	110	115	65-115			
tert-Butyl alcohol	8470	1000	"	7150	490	112	75-120			
Di-isopropyl ether	785	25	"	757	ND	104	75-125			
1,2-Dibromoethane (EDB)	744	25	"	742	ND	100	85-120			
1,2-Dichloroethane	832	25	"	736	ND	113	85-130			
Ethanol	9190	5000	"	7070	1000	116	70-135			
Ethyl tert-butyl ether	788	25	"	751	ND	105	75-130			
Ethylbenzene	1460	25	"	377	980	127	75-135			
Methyl tert-butyl ether	420	25	"	351	56	104	65-125			
Toluene	2630	25	"	1860	740	102	85-120			
Xylenes (total)	6990	25	"	2070	4400	125	85-125			
Gasoline Range Organics (C4-C12)	47300	2500	"	22000	19000	129	70-124			LM
Surrogate: 1,2-Dichloroethane-d4	2.46		"	2.50		98	60-135			

Matrix Spike Dup (5I30007-MSD1)	Source: MOI0664-11			Prepared: 09/30/05 Analyzed: 10/01/05						
tert-Amyl methyl ether	782	25	ug/l	752	12	102	80-115	1	15	
Benzene	412	25	"	258	110	117	65-115	1	20	LM
tert-Butyl alcohol	8230	1000	"	7150	490	108	75-120	3	25	
Di-isopropyl ether	785	25	"	757	ND	104	75-125	0	15	
1,2-Dibromoethane (EDB)	748	25	"	742	ND	101	85-120	0.5	15	
1,2-Dichloroethane	811	25	"	736	ND	110	85-130	3	20	
Ethanol	8840	5000	"	7070	1000	111	70-135	4	35	
Ethyl tert-butyl ether	798	25	"	751	ND	106	75-130	1	25	
Ethylbenzene	1510	25	"	377	980	141	75-135	3	15	LM
Methyl tert-butyl ether	428	25	"	351	56	106	65-125	2	20	
Toluene	2660	25	"	1860	740	103	85-120	1	20	
Xylenes (total)	7110	25	"	2070	4400	131	85-125	2	20	LM
Gasoline Range Organics (C4-C12)	47300	2500	"	22000	19000	129	70-124	0	20	LM
Surrogate: 1,2-Dichloroethane-d4	2.36		"	2.50		94	60-135			

URS Corporation [Arco]
1333 Broadway, Suite 800
Oakland CA, 94612Project: ARCO #4977, Castro Valley, CA
Project Number: G0C2H-0004
Project Manager: Scott RobinsonMOI0627
Reported:
10/04/05 10:06**Notes and Definitions**

LN MS and/or MSD below acceptance limits. See Blank Spike(LCS).

LM MS and/or MSD above acceptance limits. See Blank Spike(LCS).

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference



Chain of Custody Record

Project Name: Analytical for QMR sampling
 BP BU/AR Region/Enfos Segment: BP > Americas > West Coast > Retail > WCBU > CA > Central > 4977 > Historical/BL
 State or Lead Regulatory Agency: California Regional Water Quality Control Board - San Francisco
 Requested Due Date (mm/dd/yy): 10 Day TAT

On-site Time: <u>1045</u>	Temp: <u>66°F</u>
Off-site Time: <u>1300</u>	Temp: <u>-</u>
Sky Conditions: <u>Clear</u>	
Meteorological Events: <u>-</u>	
Wind Speed: <u>-</u>	Direction: <u>-</u>

Lab Name: <u>Sequoia</u>	BP/AR Facility No.: <u>4977</u>	Consultant/Contractor: <u>URS</u>
Address: <u>885 Jarvis Drive</u>	BP/AR Facility Address: <u>2770 Castro Valley Blvd., Castro Valley, CA</u>	Address: <u>1333 Broadway, Suite 800</u>
<u>Morgan Hill, CA 95037</u>	Site Lat/Long: <u>37.694794 / -122.084</u>	<u>Oakland, CA 94612</u>
Lab PM: <u>Lisa Race / Jamshid Kekobad</u>	California Global ID No.: <u>T0600100089</u>	Consultant/Contractor Project No.: <u>38487034</u>
Tele/Fax: <u>408.782.8156 / 408.782.6308</u>	Enfos Project No.: <u>G0C2H-0004</u>	Consultant/Contractor PM: <u>Scott Robinson</u>
BP/AR PM Contact: <u>Paul Supple</u>	Provision or RCOP: <u>Provision</u>	Tele/Fax: <u>510.874.3280 / 510.874.3268</u>
Address: <u>P.O. Box 6549</u>	Phase/WBS: <u>04 - Mon/Remed by Natural Attenuation</u>	Report Type & QC Level: <u>Level 1 with EDF</u>
<u>Moraga, CA 94570</u>	Sub Phase/Task: <u>03 - Analytical</u>	E-mail BDD To: <u>Donna Cosper@urscorp.com</u>
Tele/Fax: <u>925.299.8891 / 925.299.8872</u>	Cost Element: <u>05 - Subcontracted Costs</u>	Invoice to: <u>Atlantic Richfield Company</u>

Item No.	Sample Description	Time	Date	Matrix			Laboratory No.	No. of Containers	Preservative					Requested Analysis					Sample Point Lat/Long and Comments
				Soil/Solid	Water/Liquid	Air			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Methanol	GRX / BTEX (\$260)	MTBE, TAME, ETBE (\$260)	DIPE, TBA (\$260)	EDB, 1,2-DCA (\$260)	Summed (\$260)	
1	WW-1	1248	9/16/05	X			61	3						X	X	X	X	X	MOF6L27 on hold
2	WW-2	1248	9/16/05				62	1						X	X	X	X	X	
3	WW-3	1238	9/16/05				63	1						X	X	X	X	X	
4	TD-4977-09162005	-	9/16/05				41	2						X	X	X	X	X	
5																			
6																			
7																			
8																			
9																			
10																			

Sampler's Name:	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
<u>Will Crow</u>	<u>Will Crow</u>	<u>9/16/05</u>	<u>1748</u>	<u>Will Crow (Sample Custodian)</u>	<u>9/16/05</u>	<u>1748</u>
<u>Blaine Tech</u>	<u>Blaine Tech</u>	<u>9/16/05</u>	<u>1027</u>	<u>Blaine Tech</u>	<u>9/16/05</u>	<u>1027</u>
	<u>Blaine Tech</u>	<u>9/16/05</u>	<u>1190</u>	<u>Blaine Tech</u>	<u>9/19/05</u>	<u>1345</u>

Special Instructions: 4.

Seals In Place Yes No Temp Blank Yes No Cooler Temperature on Receipt FIC Trip Blank Yes No

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: bp
 REC. BY (PRINT) JT
 WORKORDER: M010627

DATE REC'D AT LAB: 9/19/05
 TIME REC'D AT LAB: 13:15
 DATE LOGGED IN: 9-20-05

For Regulatory Purposes?
 DRINKING WATER YES / NO
 WASTE WATER YES / NO

CIRCLE THE APPROPRIATE RESPONSE	LAB SAMPLE #	DASH #	CLIENT ID	CONTAINER DESCRIPTION	PRESERVATIVE	pH	SAMPLE MATRIX	DATE SAMPLED	REMARKS: CONDITION (ETC.)
1. Custody Seal(s) <input checked="" type="radio"/> Present / <input type="radio"/> Absent Intact / Broken*	01	A-C	KW-1	Voa-3	Hcl	-	W	9/16/05	
2. Chain-of-Custody <input checked="" type="radio"/> Present / <input type="radio"/> Absent*	02	L	↓ - 2	↓	↓	↓	↓	↓	
3. Traffic Reports or Packing List: <input type="radio"/> Present / <input checked="" type="radio"/> Absent	03	↓	↓ - 3	↓	↓	↓	↓	↓	
4. Airbill: <input type="radio"/> Airbill / <input checked="" type="radio"/> Sticker <input type="radio"/> Present / <input checked="" type="radio"/> Absent	04	A/B	TB-4977-09162005	Voa-2	↓	↓	↓	↓	
5. Airbill #:									
6. Sample Labels: <input checked="" type="radio"/> Present / <input type="radio"/> Absent									
7. Sample IDs: <input checked="" type="radio"/> Listed / <input type="radio"/> Not Listed on Chain-of-Custody									
8. Sample Condition: <input checked="" type="radio"/> Intact / <input type="radio"/> Broken* / <input type="radio"/> Leaking*									
9. Does information on chain-of-custody, traffic reports and sample labels agree? <input checked="" type="radio"/> Yes / <input type="radio"/> No*									
10. Sample received within hold time? <input checked="" type="radio"/> Yes / <input type="radio"/> No*									
11. Adequate sample volume received? <input checked="" type="radio"/> Yes / <input type="radio"/> No*									
12. Proper preservatives used? <input checked="" type="radio"/> Yes / <input type="radio"/> No*									
13. Trip Blank / Temp Blank Received? (circle which, if yes) <input checked="" type="radio"/> Yes / <input type="radio"/> No*									
14. Read Temp: <u>6.0°C</u> Corrected Temp: <u>6.0°C</u> Is corrected temp 4 +/- 2°C? <input checked="" type="radio"/> Yes / <input type="radio"/> No** <small>(Acceptance range for samples requiring thermal pres.)</small>									
**Exception (if any): METALS / DFF ON ICE or Problem COC									

*IF CIRCLED, CONTACT PROJECT MANAGER AND ATTACH RECORD OF RESOLUTION.

ATTACHMENT C

**ERROR CHECK REPORTS AND EDF/GEOWELL
SUBMITTAL CONFIRMATIONS**

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<u>USER NAME:</u>	URSCORP-OAKLAND
<u>DATE CHECKED:</u>	10/11/2005 4:17:09 PM

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SUCCESSFUL EDF CHECK - NO ERRORS

<u>ORGANIZATION NAME:</u>	URS Corporation- Oakland Office
<u>USER NAME:</u>	URSCORP-OAKLAND
<u>DATE CHECKED:</u>	10/11/2005 4:14:19 PM
<u>GLOBAL ID:</u>	T0600100089
<u>FILE UPLOADED:</u>	ARCO#4977-EDF- MOI0627.zip

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ARCO 2770 CASTRO VALLEY BLVD CASTRO VALLEY, CA 94546	<u>Regional Board - Case #: 01-0097</u> SAN FRANCISCO BAY RWQCB (REGION 2) - (RDB) <u>Local Agency (lead agency) - Case #: 01-0097</u> ALAMEDA COUNTY LOP - (RWS)
---	---

SAMPLE DETECTIONS REPORT

# FIELD POINTS SAMPLED	3
# FIELD POINTS WITH DETECTIONS	3
# FIELD POINTS WITH WATER SAMPLE DETECTIONS ABOVE MCL	2
SAMPLE MATRIX TYPES	WATER

METHOD QA/QC REPORT

METHODS USED	8260FA
TESTED FOR REQUIRED ANALYTES?	N

MISSING PARAMETERS NOT TESTED:

- 8260FA REQUIRES DBFM TO BE TESTED

- 8260FA REQUIRES BR4FBZ TO BE TESTED
 - 8260FA REQUIRES BZMED8 TO BE TESTED
 LAB NOTE DATA QUALIFIERS Y

QA/QC FOR 8021/8260 SERIES SAMPLES

TECHNICAL HOLDING TIME VIOLATIONS 0
 METHOD HOLDING TIME VIOLATIONS 0
 LAB BLANK DETECTIONS ABOVE REPORTING DETECTION LIMIT 0
 LAB BLANK DETECTIONS 0
 DO ALL BATCHES WITH THE 8021/8260 SERIES INCLUDE THE FOLLOWING?
 - LAB METHOD BLANK Y
 - MATRIX SPIKE Y
 - MATRIX SPIKE DUPLICATE Y
 - BLANK SPIKE Y
 - SURROGATE SPIKE Y

WATER SAMPLES FOR 8021/8260 SERIES

MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135% Y
 MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30% Y
 SURROGATE SPIKES % RECOVERY BETWEEN 85-115% Y
 BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130% Y

SOIL SAMPLES FOR 8021/8260 SERIES

MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135% n/a
 MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30% n/a
 SURROGATE SPIKES % RECOVERY BETWEEN 70-125% n/a
 BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130% n/a

FIELD QC SAMPLES

<u>SAMPLE</u>	<u>COLLECTED</u>	<u>DETECTIONS > REPD</u>
QCTB SAMPLES	N	0
QCEB SAMPLES	N	0
QCAB SAMPLES	N	0

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Confirmation Number: 3621902763
Date/Time of Submittal: 10/11/2005 4:15:29 PM
Facility Global ID: T0600100089
Facility Name: ARCO
Submittal Title: 3Q 2005 QMR EDF BP/ARCO 4977
Submittal Type: GW Monitoring Report

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ARCO 2770 CASTRO VALLEY BLVD CASTRO VALLEY, CA 94546	Regional Board - Case #: 01-0097 SAN FRANCISCO BAY RWQCB (REGION 2) - (RDB) Local Agency (lead agency) - Case #: 01-0097 ALAMEDA COUNTY LOP - (RWS)
---	--

CONF #	TITLE	QUARTER
3621902763	3Q 2005 QMR EDF BP/ARCO 4977	Q3 2005
SUBMITTED BY	SUBMIT DATE	STATUS
Srijesh Thapa	10/11/2005	PENDING REVIEW

SAMPLE DETECTIONS REPORT

# FIELD POINTS SAMPLED	3
# FIELD POINTS WITH DETECTIONS	3
# FIELD POINTS WITH WATER SAMPLE DETECTIONS ABOVE MCL	2
SAMPLE MATRIX TYPES	WATER

METHOD QA/QC REPORT

METHODS USED	8260FA
TESTED FOR REQUIRED ANALYTES?	N
MISSING PARAMETERS NOT TESTED:	
- 8260FA REQUIRES DBFM TO BE TESTED	
- 8260FA REQUIRES BR4FBZ TO BE TESTED	
- 8260FA REQUIRES BZMED8 TO BE TESTED	
LAB NOTE DATA QUALIFIERS	Y

QA/QC FOR 8021/8260 SERIES SAMPLES

TECHNICAL HOLDING TIME VIOLATIONS	0
METHOD HOLDING TIME VIOLATIONS	0
LAB BLANK DETECTIONS ABOVE REPORTING DETECTION LIMIT	0
LAB BLANK DETECTIONS	0

DO ALL BATCHES WITH THE 8021/8260 SERIES INCLUDE THE FOLLOWING?

- LAB METHOD BLANK Y
- MATRIX SPIKE Y
- MATRIX SPIKE DUPLICATE Y
- BLANK SPIKE Y
- SURROGATE SPIKE Y

WATER SAMPLES FOR 8021/8260 SERIES

- MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135% Y
- MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30% Y
- SURROGATE SPIKES % RECOVERY BETWEEN 85-115% Y
- BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130% Y

SOIL SAMPLES FOR 8021/8260 SERIES

- MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135% n/a
- MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30% n/a
- SURROGATE SPIKES % RECOVERY BETWEEN 70-125% n/a
- BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130% n/a

FIELD QC SAMPLES

<u>SAMPLE</u>	<u>COLLECTED</u>	<u>DETECTIONS > REPD</u>
QCTB SAMPLES	N	0
QCEB SAMPLES	N	0
QCAB SAMPLES	N	0

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