



Atlantic Richfield Company  
(a BP affiliated company)

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**Alameda County**  
July 30, 2003  
AUG 04 2003  
**Environmental Health**

Re: Second Quarter 2003 Groundwater Monitoring Report  
ARCO Service Station #6041  
7249 Village Parkway  
Dublin, California

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



July 30, 2003

Ms. Eva Chu  
Hazardous Materials Specialist  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

Alameda County  
AUG 04 2003  
Environmental Health

**Re: Second Quarter 2003 Groundwater Monitoring Report  
ARCO Service Station #6041  
7249 Village Parkway  
Dublin, California  
URS Project #38486131**

Dear Ms. Chu:

On behalf of Atlantic Richfield Company (ARCO – an affiliated company of the Group Environmental Management Company), URS Corporation (URS) is submitting the *Second Quarter 2003 Groundwater Monitoring Report* for the ARCO Service Station #6041, located at 7249 Village Parkway, Dublin, California.

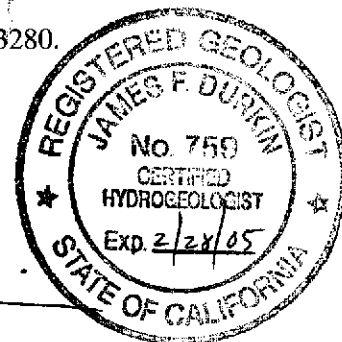
If you have any questions regarding this submission, please call (510) 874-3280.

Sincerely,

**URS CORPORATION**

Scott Robinson  
Project Manager

James F. Durkin, C.Hg.  
Senior Geologist



Enclosure: Second Quarter 2003 Groundwater Monitoring Report

cc: Ms. Karen Petryna, Equiva Services, LLC, PO Box 7869, Burbank, CA 91510-7869  
Mr. Paul Supple, ARCO, PO Box 6549 Moraga, CA 94570

# **R E P O R T**

## **SECOND QUARTER 2003 GROUNDWATER MONITORING**

**ARCO SERVICE STATION #6041  
7249 VILLAGE PARKWAY  
DUBLIN, CALIFORNIA**

*Prepared for*  
**Atlantic Richfield Company**

**July 30, 2003**

# **URS**

**URS Corporation  
500 12th Street, Suite 200  
Oakland, California 94607**

**38486131**

Date: July 30, 2003  
Quarter: 2Q 03

## ATLANTIC RICHFIELD COMPANY QUARTERLY GROUNDWATER MONITORING REPORT

Former Facility No.: 6041 Address: 7249 Village Parkway, Dublin, California  
Atlantic Richfield Co. Environmental Engineer: Paul Supple  
Consulting Co./Contact Person: URS Corporation / Scott Robinson  
Consultant Project No.: 38486131  
Primary Agency: Alameda County Health Care Services Agency (ACHCSA)

### WORK PERFORMED THIS QUARTER (Second – 2003):

1. Performed second quarter 2003 groundwater monitoring event on June 28, 2003.
2. Prepared and submitted first quarter 2003 groundwater monitoring report.

### WORK PROPOSED FOR NEXT QUARTER (Third – 2003):

1. Perform third quarter 2003 groundwater monitoring event.
2. Prepare and submit second quarter 2003 groundwater monitoring report.
3. Re-survey wells MW-2, MW-3 MW-7 and MW-8.

Current Phase of Project:	<u>GW monitoring/sampling</u>
Frequency of Groundwater Sampling:	<u>Quarterly: Wells MW-2 to MW-4 and MW-6 to MW-8</u> <u>Annual (4<sup>th</sup> Qtr.): MW-5</u>
Frequency of Groundwater Monitoring:	<u>Quarterly</u>
Is Free Product (FP) Present On-Site:	<u>No</u>
Bulk Soil Removed to Date:	<u>3,208 cubic yards</u>
Current Remediation Techniques:	<u>Natural Attenuation</u>
Approximate Depth to Groundwater:	<u>7.49 (MW-2) to 8.60 (MW-3)</u>
Groundwater Gradient (direction):	<u>Not Calculated</u>
Groundwater Gradient (magnitude):	<u>Not Calculated</u>

### DISCUSSION:

All groundwater samples were analyzed by EPA Method 8260B for TPH-g, BTEX and fuel oxygenates. TPH-g was not detected in any of the five wells sampled this quarter. Benzene was detected in two wells at concentrations of 20 micrograms per liter ( $\mu\text{g/L}$ ) (MW-3) and 680  $\mu\text{g/L}$  (MW-8). MTBE was detected in all five wells at concentrations ranging from 0.62  $\mu\text{g/L}$  (MW-6) to 2,900  $\mu\text{g/L}$  (MW-8). TBA was detected in two wells at concentrations of 12,000  $\mu\text{g/L}$  (MW-8) to 29,000  $\mu\text{g/L}$  (MW-3). Well MW-7 was dry and could not be sampled.

This site is scheduled to be resurveyed during the month of July, 2003. Once the site is resurveyed, a groundwater contour map for this site will be constructed and submitted in the *Third Quarter 2003 Groundwater Report*.

### RECOMMENDATIONS:

We recommend changing well MW-6 from quarterly to annual sampling. This well is the farthest upgradient well and historically has either been non-detect or had very low detections for the constituents of concern.

**ATTACHMENTS:**

- Table 1 – Groundwater Elevation and Analytical Data
- Table 2 – Groundwater Flow Direction and Gradient
- Table 3 – Fuel Oxygenate Analytical Data
- Figure 1 – Groundwater Elevation Contour and Analytical Summary Map – June 28, 2003
- Attachment A – Field Procedures and Field Data Sheets
- Attachment B – Laboratory Procedures, Certified Analytical Reports and Chain-of-Custody Records
- Attachment C – EDCC and EDF/Geowell Submittal Confirmation

**Table 1**  
**Groundwater Elevation and Analytical Data**

ARCO Service Station #6041  
7249 Village Parkway  
Dublin, California

Well Number	Date of Sampling/ Monitoring	TOC Elevation (ft-MSL)	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	TPH Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	Dissolved Oxygen (mg/L)	
MW-1	02/15/95	336.56	8.53	328.03	820	15	ND<1	5.2	1.4	--	--		
	05/24/95		9.00	327.56	640	12	ND<1	7.3	ND<1	--	--		
	08/25/95		10.30	326.26	780	2	ND<1	2	2	2,500	--		
	11/28/95		11.01	325.55	570	2.2	ND<0.5	1.4	0.9	--	--		
	02/26/96		7.35	329.21	1,100	28	ND<7	13	7	3,400	--		
	05/23/96		8.73	327.83	560	8.5	ND<1	1.1	ND<1	3,900	--		
	08/23/96		10.25	326.31	860	ND<1	ND<1	ND<4	2	5,600	--		
	03/21/97		9.35	327.21	520	12	ND<0.5	2.7	1.5	6,200	--		
	08/20/97		10.75	325.81	ND<5,000	ND<50	ND<50	ND<50	ND<50	7,400	--		
	11/21/97		11.10	325.46	ND<5,000	ND<50	ND<50	ND<50	ND<50	8,500	--		
	02/12/98	P	7.05	329.51	210	ND<0.5	ND<0.5	ND<0.5	ND<0.5	8,900	--	1.71	
	07/31/98	P	10.04	326.52	ND<20,000	ND<200	ND<200	ND<200	ND<200	18,000	--	2.43	
	02/17/99		8.50	328.06	ND<20,000	ND<200	ND<200	ND<200	ND<200	16,000	--	1.0	
	08/24/99	P	10.40	326.16	190	ND<0.5	4.4	ND<0.5	1.1	15,000	--		
	03/01/00	P	8.85	327.71	310	20	0.5	7.6	4	80,000	--	1.57	
	08/18/00	P	9.35	327.21	ND<10,000	ND<100	ND<100	ND<100	ND<100	48,400	63,700	1.50	
	12/27/00	P	10.81	325.75	ND<10,000	309	ND<100	ND<100	289	44,400	--	0.51	
	02/09/01	P	10.65	325.91	2,820	368	ND<25.0	116	176	23,300	--	0.58	
	DUP		NR	NR	3,490	432	9.56	146	235	31,800	--		
		P		11.09	325.47	2,900	66.0	ND<10.0	33.2	25.1	46,500	--	0.63
	DUP		NR	NR	NR	2,600	70.1	ND<20.0	32.7	30.6	45,400	--	
		P		11.07	325.49	ND<10,000	ND<100	ND<100	130	520	42,000	--	0.69
		12/21/01	Well abandoned during station upgrade activities										

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Well Number	Date of Sampling/ Monitoring	TOC Elevation (ft-MSL)	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	TPH Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	Dissolved Oxygen (mg/L)	
MW-2	02/15/95	334.80	6.75	328.05	730	110	1.7	25	66	--	--		
	05/24/95		6.88	327.92	370	110	ND<1	17	1.9	--	--		
	08/25/95		7.91	326.89	150	6	ND<1	ND<1	ND<1	2,700	--		
	11/28/95		9.06	325.74	ND<50	ND<0.5	ND<0.5	ND<0.5	0.8	--	--		
	02/26/96		6.65	328.15	350	66	ND<0.5	11	1.7	ND<3	--		
	05/23/96		6.90	327.90	540	140	ND<2.5	13	ND<2.5	4,600	--		
	08/23/96		8.45	326.35	180	0.8	2	0.7	2.6	4,000	--		
	03/21/97		7.28	327.52	410	90	ND<1	14	4	3,800	--		
	08/20/97		8.87	325.93	ND<5,000	ND<50	ND<50	ND<50	ND<50	3,100	--		
	11/21/97		9.28	325.52	ND<2,000	ND<20	ND<20	ND<20	ND<20	2,600	--		
	02/12/98		P	5.90	328.90	310	54	ND<0.5	6.2	1.1	3,800	--	3.76
	07/31/98		P	8.12	326.68	6,100	52	220	110	1100	7,700	--	2.96
	02/17/99		P	7.18	327.62	ND<5,000	ND<50	ND<50	ND<50	ND<50	4,200	--	1.0
	08/24/99		P	8.68	326.12	200	1.8	16	3.0	32	3,100	--	
	03/01/00		P	7.02	327.78	760	24	12	13	59	6,300	--	1.92
	08/18/00		P	7.75	327.05	ND<500	ND<5.00	ND<5.00	ND<5.00	ND<5.00	1,610	1,980	2.03
	12/27/00			8.85	325.95	Not Sampled: Well sampled during first and third quarters							
	02/09/01		P	8.50	326.30	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	9.11	--	0.53
	04/17/01			9.12	325.68	Not Sampled: Well sampled during first and third quarters							
	DUP	07/17/01	P	8.99	325.81	1,200	ND<10	ND<10	ND<10	ND<10	4,200	--	0.69
07/17/01			NR	NR	3,500	ND<10	ND<10	ND<10	ND<10	3,500	--		
12/21/01		NP	8.65	326.15	65	ND<0.50	1.2	0.61	6.7	11	6.5	0.48	
03/06/02		NP	8.61	326.19	ND<50	ND<0.50	ND<0.50	ND<0.50	1.8	31	--	0.35	
04/26/02		NP	8.20	326.60	92	ND<0.5	ND<0.50	ND<0.50	0.64	98	180	0.19	
09/23/02		P	8.50 <sup>4</sup>	326.30 <sup>4</sup>	250 <sup>1</sup>	ND<1.2	ND<1.2	ND<1.2	ND<1.2	NA	1,500	2.1	
12/27/02		P	7.15 <sup>4</sup>	327.65 <sup>4</sup>	440 <sup>1</sup>	ND<2.5	ND<2.5	ND<2.5	ND<2.5	NA	790	1.4	
3/12/2003 <sup>7</sup>		P	7.33	NR <sup>6</sup>	ND<50	1.6	ND<0.50	ND<0.50	1.2	NA	11	2.7	
06/28/03		P	7.49	NR <sup>6</sup>	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	1.2	2.0	

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Dublin, California

Well Number	Date of Sampling/ Monitoring	TOC Elevation (ft-MSL)	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	TPH Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	Dissolved Oxygen (mg/L)
MW-3	02/15/95	335.53	8.55	326.98	100	14	ND<0.5	6.3	ND<0.5	--	--	
	05/24/95		8.17	327.36	110	8	ND<0.5	2.7	ND<0.5	--	--	
	08/25/95		9.27	326.26	210	3.6	ND<0.5	2.9	0.6	20,000	--	
	11/28/95		9.91	325.62	81	1.5	ND<0.5	1.4	ND<0.5	--	15,000	
	02/26/96		8.42	327.11	16,000	1,600	1,200	300	2,000	9,500	--	
	05/23/96		7.70	327.83	6,500	690	ND<10	120	14	8,600	--	
	08/23/96		9.25	326.28	1,700	85	2	61	5.3	11,000	--	
	03/21/97		8.72	326.81	100	2	ND<1	1	ND<1	6,600	--	
	08/20/97		9.73	325.80	ND<5,000	ND<50	ND<50	ND<50	ND<50	7,700	--	
	11/21/97		10.10	325.43	ND<5,000	ND<50	ND<50	ND<50	ND<50	9,700	--	
	02/12/98		P	6.68	328.85	110	11	ND<0.5	1.9	10,000	--	1.02
	07/31/98		P	7.98	327.55	ND<10,000	ND<100	ND<100	ND<100	13,000	--	2.59
	02/17/99		P	8.40	327.13	ND<20,000	ND<200	ND<200	ND<200	23,000	--	1.0
	08/24/99		P	9.45	326.08	200	0.6	5.6	0.6	22,000	--	
	03/01/00		P	8.32	327.21	320	32	1.0	6.1	4	58,000	2.42
	08/18/00		P	8.35	327.18	ND<10,000	ND<100	ND<100	ND<100	46,200	55,600	1.59
DUP	08/18/00		NR	NR	ND<10,000	ND<100	ND<100	ND<100	ND<100	45,500	51,700	
	12/27/00		P	9.75	325.78	29,700	1,620	1,730	ND<250	6,230	--	1.59
	02/09/01		P	9.61	325.92	29,300	2,590	3,530	440	7,080	--	0.51
	04/17/01		P	9.94	325.59	16,400	1,680	ND<25.0	310	2,290	48,700	0.41
	07/17/01		P	9.93	325.60	21,000	1,500	ND<100	1,100	690	82,000	0.51
DUP	12/21/01		P	9.40	326.13	ND<5,000	ND<50	ND<50	ND<50	4,300	3,800	0.40
	12/21/01		NR	NR	ND<5,000	ND<50	ND<50	ND<50	ND<50	4,500	3,500	
	03/06/02		P	9.33	326.20	ND<50	1.2	ND<0.50	1.1	13	880	0.43
	04/26/02		P	9.19	326.34	260	3.7	ND<1.0	1.1	1.80	460	0.2
	09/23/02		P	9.30 <sup>4</sup>	326.23 <sup>4</sup>	1,500 <sup>2</sup>	41	2.4	9.8	14	NA	1.5
	12/27/02		P	7.30 <sup>4</sup>	328.23 <sup>4</sup>	1,500 <sup>3</sup>	300	100	21	66	NA	2.2
	3/12/2003 <sup>7</sup>		P	8.06	NR <sup>6</sup>	ND<1,000	ND<10	ND<10	ND<10	NA	45	1.6
	06/28/03		P	8.60	NR <sup>6</sup>	1,500	20	27	12	45	140	1.7



**Table 1**  
**Groundwater Elevation and Analytical Data**

ARCO Service Station #6041  
7249 Village Parkway  
Dublin, California

Well Number	Date of Sampling/ Monitoring	TOC Elevation (ft-MSL)	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	TPH Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	Dissolved Oxygen (mg/L)
MW-4	02/15/95	334.22	7.85	326.37	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	
	05/24/95		6.68	327.54	Not sampled: well sampled semi-annually, during the first and third quarters							
	08/25/95		6.93	327.29	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	11/28/95		8.21	326.01	Not sampled: well sampled semi-annually, during the first and third quarters							
	02/26/96		6.65	327.57	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	05/23/96		6.47	327.75	Not sampled: well sampled semi-annually, during the first and third quarters							
	08/23/96		7.66	326.56	Not sampled: well not part of sampling program							
	03/21/97		6.84	327.38	Not sampled: well not part of sampling program							
	08/20/97		8.32	325.90	Not sampled: well not part of sampling program							
	11/21/97		8.65	325.57	Not sampled: well not part of sampling program							
	02/12/98		6.35	327.87	Not sampled: well not part of sampling program							
	07/31/98		6.84	327.38	Not sampled: well not part of sampling program							
	02/17/99		7.50	326.72	Not sampled: well not part of sampling program							
	08/24/99		9.50	324.72	Not sampled: well not part of sampling program							
	03/01/00		6.93	327.29	Not sampled: well not part of sampling program							
	08/18/00		7.03	327.19	Not sampled: well not part of sampling program							
	12/27/00		8.10	326.12	Not sampled: well not part of sampling program							
	02/09/01		7.97	326.25	Not sampled: well not part of sampling program							
	04/17/01		8.90	325.32	Not sampled: well not part of sampling program							
	07/17/01		8.59	325.63	Not sampled: well not part of sampling program							
	12/21/01	NP	8.31	325.91	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	4.1	2.0	0.68
	03/06/02	P	8.27	325.95	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	0.37
	04/26/02	P	8.05	326.17	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	3.6	--	0.3
	09/23/02	P	7.94	326.28	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	2.9	4.1
	12/27/02	P	7.56	326.66	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	2.6	2.1
	3/12/2003 <sup>7</sup>	P	7.67	326.55	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	1.6	2.8
	06/28/03	P	7.60	326.62	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	2.1	--

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Well Number	Date of Sampling/ Monitoring	TOC Elevation (ft-MSL)	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	TPH Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	Dissolved Oxygen (mg/L)
MW-5	02/15/95	335.87	7.80	328.07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	
	05/24/95		8.10	327.77	Not sampled: well sampled annually, during the first quarter							
	08/25/95		9.43	326.44	Not sampled: well sampled annually, during the first quarter							
	11/28/95		10.12	325.75	Not sampled: well sampled annually, during the first quarter							
	02/26/96		6.73	329.14	03-13-96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	05/23/96		7.87	328.00	Not sampled: well sampled annually, during the first quarter							
	08/23/96		9.46	326.41	Not sampled: well not part of sampling program							
	03/21/97		8.23	327.64	Not sampled: well not part of sampling program							
	08/20/97		9.92	325.95	Not sampled: well not part of sampling program							
	11/21/97		10.18	325.69	Not sampled: well not part of sampling program							
	02/12/98		6.45	329.42	Not sampled: well not part of sampling program							
	07/31/98		8.98	326.89	Not sampled: well not part of sampling program							
	02/17/99		7.65	328.22	Not sampled: well not part of sampling program							
	08/24/99		8.10	327.77	Not sampled: well not part of sampling program							
	03/01/00		7.31	328.56	Not sampled: well not part of sampling program							
	08/18/00		8.65	327.22	Not sampled: well not part of sampling program							
	12/27/00		9.80	326.07	Not sampled: well not part of sampling program							
	02/09/01		9.65	326.22	Not sampled: well not part of sampling program							
	04/17/01		9.92	325.95	Not sampled: well not part of sampling program							
	07/17/01		9.95	325.92	Not sampled: well not part of sampling program							
	12/21/01		Well inaccessible									
	03/06/02		Well inaccessible									
	04/26/02		Well inaccessible									
	09/23/02		7.94	327.93	Not sampled: well not part of sampling program							
	12/27/02	P	7.57	328.30	ND<50	ND<0.50	ND<0.50	ND<0.50	0.76	NA	15	0.7
	3/12/2003 <sup>7</sup>		8.32	327.55	NS	NS	NS	NS	NS	NS	NS	NA
	06/28/03		8.58	327.29	NS	NS	NS	NS	NS	NS	NS	NA

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ARCO Service Station #6041  
7249 Village Parkway  
Dublin, California

Well Number	Date of Sampling/ Monitoring	TOC Elevation (ft-MSL)	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	TPH Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	Dissolved Oxygen (mg/L)
MW-6	02/15/95	335.84	7.81	328.03	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	
	05/24/95		8.35	327.49	Not sampled: well sampled annually, during the first quarter							
	08/25/95		9.71	326.13	Not sampled: well sampled annually, during the first quarter							
	11/28/95		10.28	325.56	Not sampled: well sampled annually, during the first quarter							
	02/26/96		6.60	329.24	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	05/23/96		8.05	327.79	Not sampled: well sampled annually, during the first quarter							
	08/23/96		9.58	326.26	Not sampled: well not part of sampling program							
	03/21/97		8.39	327.45	Not sampled: well not part of sampling program							
	08/20/97		9.98	325.86	Not sampled: well not part of sampling program							
	11/21/97		10.31	325.53	Not sampled: well not part of sampling program							
	02/12/98		3.15	332.69	Not sampled: well not part of sampling program							
	07/31/98		9.29	326.55	Not sampled: well not part of sampling program							
	02/17/99		7.72	328.12	Not sampled: well not part of sampling program							
	08/24/99		9.65	326.19	Not sampled: well not part of sampling program							
	03/01/00		7.35	328.49	Not sampled: well not part of sampling program							
	08/18/00		8.65	327.19	Not sampled: well not part of sampling program							
	12/27/00		9.83	326.01	Not sampled: well not part of sampling program							
	02/09/01		9.62	326.22	Not sampled: well not part of sampling program							
	04/17/01		10.03	325.81	Not sampled: well not part of sampling program							
	07/17/01		9.95	325.89	Not sampled: well not part of sampling program							
	12/21/01	NP	9.47	326.37	ND<50	ND<0.50	ND<0.50	ND<0.50	0.57	ND<2.5	--	0.55
	03/06/02	P	9.31	326.53	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	0.33
	04/26/02	P	9.09	326.75	ND<50	ND<0.50	ND<0.50	ND<0.50	0.7	ND<2.5	--	0.31
	09/23/02	P	9.14	326.70	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	ND<0.50	2.1
	12/27/02	P	7.26	328.58	ND<50	ND<0.50	ND<0.50	ND<0.50	0.63	NA	0.91	0.8
	3/12/2003 <sup>7</sup>	P	8.41	327.43	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	0.64	1.3
	06/28/03	P	8.56	327.28	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	0.62	1.6

**Table 1**  
**Groundwater Elevation and Analytical Data**

ARCO Service Station #6041  
7249 Village Parkway  
Dublin, California

Well Number	Date of Sampling/ Monitoring		TOC Elevation (ft-MSL)	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	TPH Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	Dissolved Oxygen (mg/L)
MW-7	12/21/01		NR	NR	NR	Not sampled: well dry							
	03/06/02		NR	NR	NR	Not sampled: well dry							
	04/26/02		NR	NR	NR	Not sampled: well dry							
	09/23/02		NR	NR	NR	Not sampled: well dry							
	12/27/02	P <sup>5</sup>	NR	7.74	NR	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	4.7	2.7
	3/12/2003 <sup>7</sup>		NR	DRY	NR	Not sampled: well dry							
	06/28/03		NR	DRY	NR	Not sampled: well dry							
MW-8	12/21/01	NP	NR	8.70	NR	ND<5,000	67	ND<50	ND<50	ND<50	2,400	1,300	0.60
	03/06/02	P	NR	8.63	NR	210	41	0.64	0.79	2.0	940	--	0.25
DUP	03/06/02		NR	NR	NR	170	37	0.67	0.70	1.9	740	--	
	04/26/02	P	NR	8.15	NR	680	95	ND<1.0	14	2.5	490	--	0.31
DUP	04/26/02		NR	NR	NR	480	74	3.5	11.00	ND<1.0	640	--	
	09/30/02	P	NR	9.37	NR	1,100 <sup>3</sup>	120	ND<5.0	57	8.7	NA	1,100	1.3
	12/27/02	P	NR	7.55	NR	350 <sup>2</sup>	13	ND<0.50	2.4	2.2	NA	73	0.8
	3/12/2003 <sup>7</sup>	P	NR	8.25	NR	ND<2,500	89	ND<25	ND<25	ND<25	NA	740	1.4
	06/28/03	P	NR	8.38	NR	7,000	680	ND<25	110	180	--	2,900	1.9
VW-2	03/21/97		NR	8.22	NR	150	8.9	ND<0.5	ND<0.5	0.6	270	--	
	08/20/97		NR	9.16	NR	Not sampled: well not part of sampling program							
	11/21/97		NR	8.27	NR	ND<200	3	ND<2	ND<2	ND<2	180	--	
	02/12/98		NR	6.65	NR	200	19	ND<0.5	0.6	ND<0.5	2,200	--	
	07/31/98		NR	7.01	NR	Not sampled: well not part of sampling program							
	02/17/99		NR	8.47	NR	Not sampled: well not part of sampling program							
	08/24/99		NR	8.20	NR	Not sampled: well not part of sampling program							
	03/01/00		NR	8.72	NR	Not sampled: well not part of sampling program							
	08/18/00	NP	NR	8.40	NR	ND<250	ND<2.50	ND<2.50	ND<2.50	ND<2.50	537	--	1.59
	12/27/00		NR	8.95	NR	Not sampled: Well Dry							
	02/09/01		NR	8.87	NR	Not sampled: Well Dry							
	04/17/01		NR	9.00	NR	Not sampled: Well Dry							
	07/17/01		NR	8.97	NR	Not sampled: Well Dry							
	12/21/01		Well abandoned during station upgrade activities										

**Table 1**  
**Groundwater Elevation and Analytical Data**

ARCO Service Station #6041  
7249 Village Parkway  
Dublin, California

Well Number	Date of Sampling/ Monitoring		TOC Elevation (ft-MSL)	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	TPH Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	Dissolved Oxygen (mg/L)
Shell MW-6 DUP	12/27/00	P	NR	9.13	NR	74.7	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	1.30
	12/27/00		NR	NR	NR	79.3	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	
	02/09/01	P	NR	9.05	NR	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	1.29
	04/17/01	P	NR	10.17	NR	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	0.95
	07/17/01	P	NR	9.50	NR	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	4.2	--	1.03
	12/21/01	P	NR	9.98	NR	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.5	--	0.97
	03/06/02	P	NR	9.90	NR	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	0.97
	04/26/02	P	NR	9.47	NR	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.5	--	0.97
	09/27/02		Well destroyed										
Shell MW-7	12/27/00	P	NR	6.45	NR	ND<50.0	ND<0.500	0.696	ND<0.500	0.795	ND<2.50	--	1.33
	02/09/01	P	NR	6.39	NR	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	1.13
	04/17/01	P	NR	7.22	NR	ND<50.0	ND<0.500	ND<0.500	ND<0.500	ND<0.500	ND<2.50	--	1.12
	07/17/01	P	NR	6.93	NR	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.5	--	1.05
	12/21/01	P	NR	7.15	NR	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.5	--	
	03/06/02	P	NR	7.03	NR	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	0.95
	04/26/02	P	NR	7.15	NR	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.5	--	0.95
	09/27/02		Well destroyed										

Notes:

- TOC: = Top of casing  
ft-MSL = Elevation in feet, relative to mean sea level  
TPH = Total Petroleum Hydrocarbons analyzed using EPA Method 8015B modified  
BTEX = Benzene, toluene, ethylbenzene, total xylenes by EPA method 8021B. (EPA method 8020 prior to 03/01/00).  
MTBE = Methyl tert-butyl ether analyzed using EPA Method 8260B  
EPA = United States Environmental Protection Agency  
\* = EPA method 8020 prior to 03/01/00  
µg/L = Micrograms per liter  
mg/L = Milligrams per liter  
NR = Not reported; data not available or not measurable  
-- = Not analyzed or not applicable  
ND< = Denotes concentration not present at or above laboratory detection limit stated to the right.  
\*\* = For previous historical groundwater elevation and analytical data please refer to Fourth Quarter 1995 Groundwater Monitoring Program Results, ARCO Service Station 6041, Dublin, California, (EMCON, February 26, 1996).  
DUP = Duplicate  
1 = Discrete peak at C6-C7.  
2 = Hydrocarbon pattern is present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel.  
3 = Chromatogram Pattern: C6-C10  
4 = Well casing broken, TOC unknown.  
5 = Well mistakenly sampled this quarter  
6 = Well casing was repaired and needs to be resurveyed.  
7 = Beginning the 1st quarter of 2003, TPH-g, BTEX and MTBE were analyzed by EPA Method 8260B.

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

**Table 2**  
**Groundwater Flow Direction and Gradient**

ARCO Service Station #6041  
7249 Village Parkway  
Dublin, California

<b>Date</b> <b>Measured</b>	<b>Average</b> <b>Flow Direction</b>	<b>Average</b> <b>Hydraulic Gradient</b>
02/15/95	NR	NR
05/24/95	East-Southeast	0.002
08/25/95	Northwest	0.006
11/28/95	North	0.006
02/26/96	East	0.012
05/23/96	Flat Gradient	Flat Gradient
08/23/96	Flat Gradient	Flat Gradient
03/21/97	South-Southeast	0.005
08/20/97	South-Southwest	0.001
11/21/97	South-Southwest	0.002
02/12/98	East	0.024
07/31/98	Northwest	0.01
02/17/99	Southeast	0.007
08/24/99	South-Southwest	0.013
03/01/00	South-Southeast	0.005
09/26/00	South-Southeast	0.002
12/27/00	West-Southwest	0.003
02/09/01	West-Southwest	0.003
04/17/01	South-Southwest	0.015
07/17/01	South-Southwest	0.003
12/21/01	East	0.002
03/06/02	East	0.003
04/26/02	Southeast	0.003
09/27/02	South	0.013
12/27/02	Southeast	0.011
03/12/03	South-Southeast	0.008
06/28/03	NC	NC

**Notes**

NC = The site is scheduled to be resurveyed during the 3rd quarter 2003, at which point, a gradient will be calculated and the table will be updated

**Source:**

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

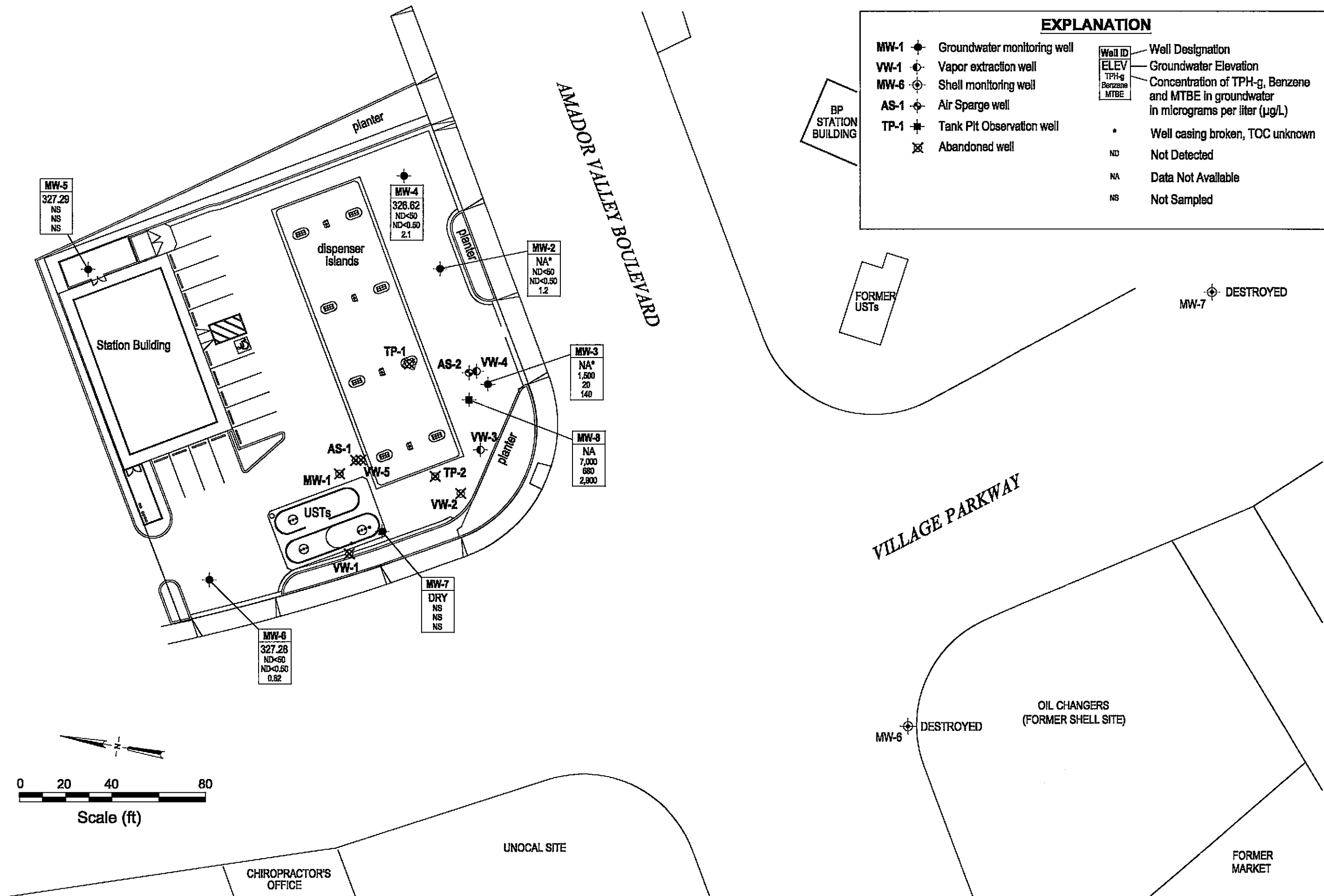
**Table 3**  
**Fuel Oxygenate Analytical Data**

ARCO Service Station #6041  
7249 Village Parkway  
Dublin, California

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)
MW-2	12/27/02	ND<20,000	ND<10,000	790	ND<250	ND<250	ND<250	ND<250	ND<250
MW-2	03/12/03	ND<100	540	11	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
MW-2	06/28/03	ND<100	ND<20	1.2	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
MW-3	12/27/02	ND<40,000	ND<20,000	1,100	ND<500	ND<500	ND<500	ND<500	ND<500
MW-3	03/12/03	ND<2,000	6,100	45	ND<10	ND<10	ND<10	ND<10	ND<10
MW-3	06/28/03	ND<2,000	29,000	140	ND<10	ND<10	ND<10	ND<10	ND<10
MW-4	12/27/02	ND<40	ND<20	2.6	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
MW-4	03/12/03	ND<100	ND<20	1.6	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
MW-4	06/28/03	ND<100	ND<20	2.1	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
MW-5	12/27/02	ND<40	ND<20	15	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
MW-5	03/12/03	NS	NS	NS	NS	NS	NS	NS	NS
MW-5	06/28/03	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	12/27/02	ND<40	ND<20	0.91	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
MW-6	03/12/03	ND<100	ND<20	0.64	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
MW-6	06/28/03	ND<100	ND<20	0.62	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
MW-7	12/27/02	ND<40	ND<20	4.7	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
MW-7	03/12/03	Not sampled - well dry							
MW-7	06/28/03	Not sampled - well dry							
MW-8	12/27/02	ND<400	260	73	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
MW-8	03/12/03	ND<5,000	2,200	740	ND<25	ND<25	ND<25	ND<25	ND<25
MW-8	06/28/03	ND<5,000	12,000	2,900	ND<25	ND<25	ND<25	ND<25	ND<25

Note = All fuel oxygenate compounds analyzed using EPA Method 8260B  
TBA = tert-Butyl alcohol  
MTBE = Methyl tert-butyl ether  
DIPE = Di-isopropyl ether  
ETBE = Ethyl tert butyl ether  
TAME = tert-Amyl methyl ether  
1,2-DCA = 1,2-Dichloroethane  
EDB = 1,2-Dibromoethane  
µg/L = micrograms per liter  
NS = Not Sampled

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**URS**

Project No. 38486131

Arco Service Station #6041  
7249 Village Parkway  
Dublin, California

Ground Water Elevation and  
Analytical Summary Map  
Second Quarter 2003 (June 28, 2003)

FIGURE  
1



**ATTACHMENT A**  
**FIELD PROCEDURES AND FIELD DATA SHEETS**

## **FIELD PROCEDURES**

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### **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<sup>TM</sup> 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.

# WELL GAUGING DATA

Project # 030628-AC1 Date 6/28/05 Client 6041

Site 7249 Village Pkwy Dublin

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or <u>TOO</u>	
MW-2	4					7.49	9.62		
MW-3	4					8.60	13.95		
MW-4	4					7.60	14.50		
MW-5	4					8.58	17.45		
MW-6	4					8.56	12.74		
MW-7	4					DRY	8.16		
MW-8	4					8.38	12.75		

# ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>030628-AC1</u>	Station # <u>6041</u>
Sampler: <u>AC</u>	Date: <u>6/28/03</u>
Well I.D.: <u>MW-2</u>	Well Diameter: 2 3 <u>(4)</u> 6 8 <u>   </u>
Total Well Depth: <u>9.62</u>	Depth to Water: <u>7.49</u>
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 <sup>2</sup> * 0.163

Purge Method: ☒ Bailer      Sampling Method: ☐ Bailer  
                          ☐ Disposable Bailer      ☒ Disposable Bailer  
                          ☐ Middleburg      ☐ Extraction Port  
                          ☐ Electric Submersible      Other:                             
                          ☐ Extraction Pump

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>1.3</u>	X	<u>3</u>	=	<u>3.9</u>	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Conductivity (mS or $\mu$ S)	Gals. Removed	Observations
<u>1016</u>	<u>74.9</u>	<u>7.8</u>	<u>3681</u>	<u>1.5</u>	<u>brown</u>
<u>well dewatered</u>			<u>(@ 2 gal)</u>		<u>DTW = 8.49</u>
<u>1050</u>	<u>74.6</u>	<u>7.4</u>	<u>3328</u>	<u>—</u>	
					<u>80% = 7.91</u>
					<u>DTW @ sample = 7.86</u>

Did well dewater? <u>(Yes)</u> No		Gallons actually evacuated: <u>2</u>	
Sampling Time: <u>1050</u>		Sampling Date: <u>6/28/03</u>	
Sample I.D.: <u>MW-2</u>		Laboratory: Pace <u>(Sequoia)</u> Other <u>                          </u>	
Analyzed for: <u>(TPH-G)</u> <u>(BTEX)</u> MTBE TPH-D Other: <u>OX's (S), Ethanol, 1,2 DCA &amp; EDB</u>			
D.O. (if req'd):	Pre-purge:	mg/L	<u>(Post-purges)</u> <u>2.0</u> mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge: <u>                          </u> mV

# ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>030628-AC1</u>	Station # <u>6041</u>
Sampler: <u>AC</u>	Date: <u>6/28/03</u>
Well I.D.: <u>MW-3</u>	Well Diameter: 2 3 <u>(4)</u> 6 8 _____
Total Well Depth: <u>13.95</u>	Depth to Water: <u>8.60</u>
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 <sup>2</sup> * 0.163

Purge Method: Bailer      Sampling Method: Bailer  
                          Disposable Bailer      X Disposable Bailer  
                          Middleburg      Extraction Port  
                          X 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>3.4</u>	x	<u>3</u>	=	<u>10.2</u>	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Conductivity (mS or $\mu$ S)	Gals. Removed	Observations
0857	79.6	7.9	1025	3.5	cloudy slight odor
well dewatered			@ 4 gal		DTW = 10.04
1030	80.1	7.6	1038	—	
					80% = 9.67
					DTW @ sample = 9.16

Did well dewater? <u>(Yes)</u> No	Gallons actually evacuated: <u>4</u>
Sampling Time: <u>1030</u>	Sampling Date: <u>6/28/03</u>
Sample I.D.: <u>MW-3</u>	Laboratory: Pace <u>(Sequoia)</u> Other _____
Analyzed for: <u>(TPH-C)</u> <u>(BTEX)</u> MTBE TPH-D Other: <u>OX's (S)</u> , Ethanol, 1,2 DCA & EDB	
D.O. (if req'd):	Pre-purge: _____ mg/L      Post-purge: <u>1.7</u> mg/L
O.R.P. (if req'd):	Pre-purge: _____ mV      Post-purge: _____ mV

# ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>030628-AC1</u>	Station # <u>6041</u>
Sampler: <u>AC</u>	Date: <u>6/28/03</u>
Well I.D.: <u>MW-4</u>	Well Diameter: 2 3 <u>(4)</u> 6 8
Total Well Depth: <u>14.50</u>	Depth to Water: <u>7.60</u>
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 <sup>2</sup> * 0.163

Purge Method: Bailer      Sampling Method: Bailer  
                          Disposable Bailer      ~~X~~ Disposable Bailer  
                          Middleburg      Extraction Port  
                          ~~X~~ 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>4.4</u>	x	<u>3</u>	=	<u>13.2</u> Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume

Time	Temp (°F)	pH	Conductivity (mS or $\mu$ S)	Gals. Removed	Observations
<u>0939</u>	<u>74.2</u>	<u>5.9</u>	<u>4857</u>	<u>4.5</u>	<u>clear</u>
<u>0940</u>	<u>72.6</u>	<u>5.4</u>	<u>5004</u>	<u>9</u>	<u>"</u>
<u>well</u>	<u>dewatered @</u>		<u>10 gal</u>		<u>DTW = 11.67</u>
<u>1040</u>	<u>72.4</u>	<u>5.6</u>	<u>5241</u>	<u>—</u>	<u>80% = 8.98</u>
					<u>DTW @ sample = 7.94</u>

Did well dewater? (Yes) No      Gallons actually evacuated: 10

Sampling Time: 1040      Sampling Date: 6/28/03

Sample I.D.: MW-4      Laboratory: Pace (Sequoia) Other: \_\_\_\_\_

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D Other: OX'S (S), Ethanol, 1,2 DCA, EDB

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

# ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>030628-AC1</u>	Station # <u>6041</u>
Sampler: <u>AC</u>	Date: <u>6/28/03</u>
Well I.D.: <u>MW-6</u>	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth: <u>12.74</u>	Depth to Water: <u>8.56</u>
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 <sup>2</sup> * 0.163

Purge Method: Bailer      Sampling Method: Bailer  
                          Disposable Bailer      ☒ Disposable Bailer  
                          Middleburg      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>2.7</u>	X	<u>3</u>	=	<u>8.1</u>	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Conductivity (mS or $\mu$ S)	Gals. Removed	Observations
<u>0840</u>	<u>78.2</u>	<u>7.2</u>	<u>2916</u>	<u>3</u>	<u>cloudy</u>
<u>well</u>	<u>dewatered</u>		<u>② 3 gal</u>		<u>DTW = 9.49</u>
<u>1020</u>	<u>75.2</u>	<u>6.8</u>	<u>3792</u>	<u>—</u>	<u>cloudy</u>
					<u>80% = 9.39</u>
					<u>DTW @ Sample = 8.71</u>

Did well dewater? ☒ Yes      No      Gallons actually evacuated: 3

Sampling Time: 1020      Sampling Date: 6/28/03

Sample I.D.: MW-6      Laboratory: Pace Sequoia Other: \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE TPH-D Other: OX's (S), Ethanol, 1,2 DCA, EDB

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
				<u>1.6</u>
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

# ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>030628-AC1</u>	Station # <u>6041</u>
Sampler: <u>AC</u>	Date: <u>6/28/03</u>
Well I.D.: <u>MW-7</u>	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth: <u>8.16</u>	Depth to Water: <u>DRY</u>
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 <sup>2</sup> * 0.163

Purge Method: <u>Bailer</u> <del>Disposable Bailer</del> <del>Middleburg</del> <del>Electric Submersible</del> <del>Extraction Pump</del> Other: _____	Sampling Method: <u>Bailer</u> <del>Disposable Bailer</del> <del>Extraction Port</del> 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.

_____ 1 Case Volume (Gals.)	X	<u>3</u> Specified Volumes	=	_____ Gals. Calculated Volume
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Time	Temp (°F)	pH	Conductivity (mS or <u>µS</u> )	Gals. Removed	Observations
					<u>Well is Dry no sample taken</u>

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Gallons actually evacuated: _____
Sampling Time: _____	Sampling Date: <u>6/28/03</u>
Sample I.D.: <u>MW-7</u>	Laboratory: Pace <u>(Sequoia)</u> Other: _____
Analyzed for: <u>(TPH-G) (BTEX)</u> MTBE TPH-D Other: <u>OX'S (S), Ethanol, 1,2 DCA, EDB</u>	
D.O. (if req'd): _____	Pre-purge: _____ mg/L Post-purge: _____ mg/L
O.R.P. (if req'd): _____	Pre-purge: _____ mV Post-purge: _____ mV



## ARCO / BP WELL MONITORING DATA SHEET

BTS #: 030628-AC1	Station # 6041
Sampler: AC	Date: 6/28/03
Well I.D.: MW-8	Well Diameter: 2 3 ④ 6 8
Total Well Depth: 12.75	Depth to Water: 8.38
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH

<u>Well Diameter</u>	<u>Multiplier</u>	<u>Well Diameter</u>	<u>Multiplier</u>
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Purge Method: ☐ Bailer  
☐ Disposable Bailer  
☐ Middleburg  
☒ Electric Submersible  
☐ Extraction Pump  
 Other: \_\_\_\_\_

Sampling Method: ☒ Bailer  
☒ Disposable Bailer  
☐ 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.

$$\frac{2.8}{1 \text{ Case Volume (Gals.)}} \times \frac{3}{\text{Specified Volumes}} = \frac{8.4}{\text{Calculated Volume}} \text{ Gals.}$$

Time	Temp (°F)	pH	Conductivity (mS or $\mu$ S)	Gals. Removed	Observations
0913	78.8	6.3	1559	3	Cloudy, slight odor
0914	74.8	5.7	1784	6	" "
0915	74.0	4.8	1749	9	" "

Did well dewater? Yes No

Gallons actually evacuated: 9

Sampling Time: 0920

Sampling Date: 6/28/03

Sample I.D.: MW-8

Laboratory: Pace Sequoia Other \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE TPH-D Other: OX's (5), Ethanol, 1,2 DCA, EDB

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	1.9	mg/L
------------------	------------	------	-------------	-----	------

O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV
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# Chain of Custody Record

Page 1 of 2

Project Name 030628 - Acl  
BP BU/GEM CO Portfolio: \_\_\_\_\_  
BP Laboratory Contract Number: \_\_\_\_\_

Date: 10/28/03 Requested Due Date (mm/dd/yy) Standard

On-site Time:	Temp:
Off-site Time:	Temp:
Sky Conditions:	
Meteorological Events:	
Wind Speed:	Direction:

end To:	BP/GEM Facility No.:	Consultant/Contractor: URS
ab Name: SEQUOIA	BP/GEM Facility Address: 7249 Village PKWY, DUBLIN, CA	Address: 500 12th St., Ste. 200
ab Address: 885 Jarvis Dr. Morgan Hill, CA 95037	Site ID No. ARCO 6041	Oakland, CA 94609-4014
	Site Lat/Long:	e-mail EDD: syed_rehan@urscorp.com
	California Global ID #:	Consultant/Contractor Project No.: J5-00006041.01 00427
ab PM: Latonya Pelt	BP/GEM PM Contact: PAUL SUPPLE	Consultant Tele/Fax: 510-874-1735/510-874-3268
ele/Fax: 408-776-9600 / 408-782-6308	Address:	Consultant/Contractor PM: Scott Robinson
gport Type & QC Level: Send EDF Reports		Invoice to: Consultant/Contractor or BP/GEM (Circle one)
P/GEM Account No.:	Tele/Fax:	BP/GEM Work Release No: INTRIM -50691

ab Bottle Order No:			Matrix				Laboratory No.	No. of containers	Preservatives					Requested Analysis								Sample Point Lat/Long and Comments
tem No.	Sample Description	Time	Soil/Solid	Water/Liquid	Sediments	Air			Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl		TPH-G/BTEX (8015+8024) 8260	TPH-D (8015)	MTBE (8021)	MTBE, TAME, ETBE DIPE, TEA (8260)	1,2-DCA & EDB (8260)	Ethanol 8260			
1	MW-2	1050		X				3				X		X		X	X	X	X			
2	MW-3	1030		X				3				X		X		X	X	X	X			
3	MW-4	1040		X				3				X		X		X	X	X	X			
4	MW-6	1020		X				3				X		X		X	X	X	X			
5	MW-8	0920		X				3				X		X		X	X	X	X			
6																						
7																						
8																						
9																						
10																						

ampler's Name: <u>Aaron Cook</u>	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
ampler's Company: <u>Blaine Tech</u>	<u>(Signature) Blaine Tech</u>					
hipment Date:						
hipment Method:						
hipment Tracking No:						

pecial Instructions: Address Invoice to BP/GEM but send to URS for approval

Custody Seals in Place Yes \_\_\_ No \_\_\_ Temperature Blank Yes \_\_\_ No \_\_\_ Cooler Temperature on Receipt \_\_\_ °F/C \_\_\_ Trip Blank Yes \_\_\_ No \_\_\_

Distribution: White Copy - Laboratory / Yellow Copy - BP/GEM / Pink Copy - Consultant/Contractor

BP CCR Rev 1 3/5/02

## Page 1 of 1

Job Number 030628-Ac1 Technician Ac

[illegible]

NOTES:

# 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 PLAINE 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:

6041

Station #

7249 Village Pkwy Dublin

Station Address

Total Gallons Collected From Groundwater Monitoring Wells:

35

added equip.

rinse water 10

any other

adjustments

TOTAL GALS.

RECOVERED 45

loaded onto

BTS vehicle # 53

BTS event #

030628- A4

time

date

1100

6/28/03

signature

*Blaine Tech*

\*\*\*\*\*

RECD AT

time

date

unloaded by

signature

**ATTACHMENT B**

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

## **LABORATORY PROCEDURES**

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### **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 Group Environmental Management Company have been reviewed and verified by that laboratory.



22 July, 2003

Scott Robinson  
URS Corporation [Arco]  
500 12th Street, Suite 100  
Oakland, CA 94607

RE: ARCO #6041, Dublin, CA  
Work Order: MMG0041

Enclosed are the results of analyses for samples received by the laboratory on 07/01/03 11:12. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Theresa Allen  
Project Manager

CA ELAP Certificate #1210



URS Corporation [Arco]  
500 12th Street, Suite 100  
Oakland CA, 94607

Project: ARCO #6041, Dublin, CA  
Project Number: INTRIM - 50691  
Project Manager: Scott Robinson

MMG0041  
**Reported:**  
07/22/03 08:54

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-2	MMG0041-01	Water	06/28/03 10:50	07/01/03 11:12
MW-3	MMG0041-02	Water	06/28/03 10:30	07/01/03 11:12
MW-4	MMG0041-03	Water	06/28/03 10:40	07/01/03 11:12
MW-6	MMG0041-04	Water	06/28/03 10:20	07/01/03 11:12
MW-8	MMG0041-05	Water	06/28/03 09:20	07/01/03 11:12

There were no custody seals that were received with this project.



URS Corporation [Arco]  
500 12th Street, Suite 100  
Oakland CA, 94607

Project: ARCO #6041, Dublin, CA  
Project Number: INTRIM - 50691  
Project Manager: Scott Robinson

MMG0041  
**Reported:**  
07/22/03 08:54

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**MW-2 (MMG0041-01) Water**    **Sampled: 06/28/03 10:50**    **Received: 07/01/03 11:12**

Ethanol	ND	100	ug/l	1	3G09001	07/09/03	07/09/03	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
<b>Methyl tert-butyl ether</b>	<b>1.2</b>	<b>0.50</b>	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C6-C10)	ND	50	"	"	"	"	"	"	

*Surrogate: 1,2-Dichloroethane-d4*                      99.6 %                      78-129                      "                      "                      "                      "

**MW-3 (MMG0041-02) Water**    **Sampled: 06/28/03 10:30**    **Received: 07/01/03 11:12**

Ethanol	ND	2000	ug/l	20	3G09002	07/09/03	07/10/03	EPA 8260B	
<b>tert-Butyl alcohol</b>	<b>29000</b>	<b>400</b>	"	"	"	"	"	"	
<b>Methyl tert-butyl ether</b>	<b>140</b>	<b>10</b>	"	"	"	"	"	"	
Di-isopropyl ether	ND	10	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	10	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	10	"	"	"	"	"	"	
1,2-Dichloroethane	ND	10	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	10	"	"	"	"	"	"	
<b>Benzene</b>	<b>20</b>	<b>10</b>	"	"	"	"	"	"	
<b>Toluene</b>	<b>27</b>	<b>10</b>	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>12</b>	<b>10</b>	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>45</b>	<b>10</b>	"	"	"	"	"	"	
<b>Gasoline Range Organics (C6-C10)</b>	<b>1500</b>	<b>1000</b>	"	"	"	"	"	"	

*Surrogate: 1,2-Dichloroethane-d4*                      109 %                      78-129                      "                      "                      "                      "

URS Corporation [Arco]  
500 12th Street, Suite 100  
Oakland CA, 94607

Project: ARCO #6041, Dublin, CA  
Project Number: INTRIM - 50691  
Project Manager: Scott Robinson

MMG0041  
Reported:  
07/22/03 08:54

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**MW-4 (MMG0041-03) Water**    Sampled: 06/28/03 10:40    Received: 07/01/03 11:12

Ethanol	ND	100	ug/l	1	3G09001	07/09/03	07/09/03	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
<b>Methyl tert-butyl ether</b>	<b>2.1</b>	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C6-C10)	ND	50	"	"	"	"	"	"	

*Surrogate: 1,2-Dichloroethane-d4*                      102 %              78-129              "              "              "              "

**MW-6 (MMG0041-04) Water**    Sampled: 06/28/03 10:20    Received: 07/01/03 11:12

Ethanol	ND	100	ug/l	1	3G09001	07/09/03	07/09/03	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
<b>Methyl tert-butyl ether</b>	<b>0.62</b>	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C6-C10)	ND	50	"	"	"	"	"	"	

*Surrogate: 1,2-Dichloroethane-d4*                      103 %              78-129              "              "              "              "



URS Corporation [Arco]  
500 12th Street, Suite 100  
Oakland CA, 94607

Project: ARCO #6041, Dublin, CA  
Project Number: INTRIM - 50691  
Project Manager: Scott Robinson

MMG0041  
Reported:  
07/22/03 08:54

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-8 (MMG0041-05) Water    Sampled: 06/28/03 09:20    Received: 07/01/03 11:12</b>									
Ethanol	ND	5000	ug/l	50	3G09001	07/09/03	07/09/03	EPA 8260B	
tert-Butyl alcohol	12000	1000	"	"	"	"	"	"	
Methyl tert-butyl ether	2900	25	"	"	"	"	"	"	
Di-isopropyl ether	ND	25	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	25	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	25	"	"	"	"	"	"	
1,2-Dichloroethane	ND	25	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	25	"	"	"	"	"	"	
Benzene	680	25	"	"	"	"	"	"	
Toluene	ND	25	"	"	"	"	"	"	
Ethylbenzene	110	25	"	"	"	"	"	"	
Xylenes (total)	180	25	"	"	"	"	"	"	
Gasoline Range Organics (C6-C10)	7000	2500	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		95.4 %	78-129		"	"	"	"	

URS Corporation [Arco]  
500 12th Street, Suite 100  
Oakland CA, 94607

Project: ARCO #6041, Dublin, CA  
Project Number: INTRIM - 50691  
Project Manager: Scott Robinson

MMG0041  
Reported:  
07/22/03 08:54

**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 3G09001 - EPA 5030B P/T**

**Blank (3G09001-BLK1)**

Prepared & Analyzed: 07/09/03

Ethanol	ND	100	ug/l							
tert-Butyl alcohol	ND	20	"							
Methyl tert-butyl ether	ND	0.50	"							
Di-isopropyl ether	ND	0.50	"							
Ethyl tert-butyl ether	ND	0.50	"							
tert-Amyl methyl ether	ND	0.50	"							
1,2-Dichloroethane	ND	0.50	"							
1,2-Dibromoethane (EDB)	ND	0.50	"							
Benzene	ND	0.50	"							
Toluene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Gasoline Range Organics (C6-C10)	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	4.65		"	5.00		93.0	78-129			

**Laboratory Control Sample (3G09001-BS1)**

Prepared & Analyzed: 07/09/03

Methyl tert-butyl ether	10.2	0.50	ug/l	10.0		102	63-137			
Benzene	12.2	0.50	"	10.0		122	78-124			
Toluene	11.0	0.50	"	10.0		110	78-129			
Surrogate: 1,2-Dichloroethane-d4	4.86		"	5.00		97.2	78-129			

**Laboratory Control Sample (3G09001-BS2)**

Prepared & Analyzed: 07/09/03

Gasoline Range Organics (C6-C10)	358	50	ug/l	440		81.4	70-113			
Surrogate: 1,2-Dichloroethane-d4	4.83		"	5.00		96.6	78-129			

**Matrix Spike (3G09001-MS1)**

Source: MMG0041-05

Prepared & Analyzed: 07/09/03

Methyl tert-butyl ether	3310	25	ug/l	248	2900	165	63-137			QM-4X
Benzene	930	25	"	160	680	156	78-124			QM-07
Toluene	977	25	"	742	22	129	78-129			
Gasoline Range Organics (C6-C10)	16400	2500	"	11000	7000	85.5	70-113			
Surrogate: 1,2-Dichloroethane-d4	5.30		"	5.00		106	78-129			



URS Corporation [Arco]  
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Project Number: INTRIM - 50691  
Project Manager: Scott Robinson

MMG0041  
Reported:  
07/22/03 08:54

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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**Batch 3G09001 - EPA 5030B P/T**

<b>Matrix Spike Dup (3G09001-MSD1)</b>	<b>Source: MMG0041-05</b>			<b>Prepared &amp; Analyzed: 07/09/03</b>					
Methyl tert-butyl ether	3090	25	ug/l	248	2900	76.6	63-137	6.88	13
Benzene	808	25	"	160	680	80.0	78-124	14.0	12 QR-07
Toluene	784	25	"	742	22	103	78-129	21.9	10 QR-02
Gasoline Range Organics (C6-C10)	14800	2500	"	11000	7000	70.9	70-113	10.3	9 QR-02
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>5.63</i>		<i>"</i>	<i>5.00</i>		<i>113</i>	<i>78-129</i>		

**Batch 3G09002 - EPA 5030B P/T**

<b>Blank (3G09002-BLK1)</b>	<b>Prepared &amp; Analyzed: 07/09/03</b>								
Ethanol	ND	100	ug/l						
tert-Butyl alcohol	ND	20	"						
Methyl tert-butyl ether	ND	0.50	"						
Di-isopropyl ether	ND	0.50	"						
Ethyl tert-butyl ether	ND	0.50	"						
tert-Amyl methyl ether	ND	0.50	"						
1,2-Dichloroethane	ND	0.50	"						
1,2-Dibromoethane (EDB)	ND	0.50	"						
Benzene	ND	0.50	"						
Toluene	ND	0.50	"						
Ethylbenzene	ND	0.50	"						
Xylenes (total)	ND	0.50	"						
Gasoline Range Organics (C6-C10)	ND	50	"						
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>5.47</i>		<i>"</i>	<i>5.00</i>		<i>109</i>	<i>78-129</i>		

<b>Laboratory Control Sample (3G09002-BS1)</b>	<b>Prepared &amp; Analyzed: 07/09/03</b>								
Methyl tert-butyl ether	9.92	0.50	ug/l	10.0		99.2	63-137		
Benzene	9.35	0.50	"	10.0		93.5	78-124		
Toluene	9.27	0.50	"	10.0		92.7	78-129		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>4.97</i>		<i>"</i>	<i>5.00</i>		<i>99.4</i>	<i>78-129</i>		

URS Corporation [Arco]  
500 12th Street, Suite 100  
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Project: ARCO #6041, Dublin, CA  
Project Number: INTRIM - 50691  
Project Manager: Scott Robinson

MMG0041  
Reported:  
07/22/03 08:54

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 3G09002 - EPA 5030B P/T</b>									
<b>Laboratory Control Sample (3G09002-BS2)</b>				Prepared & Analyzed: 07/09/03					
Gasoline Range Organics (C6-C10)	329	50	ug/l	440		74.8	70-113		
Surrogate: 1,2-Dichloroethane-d4	5.74		"	5.00		115	78-129		
<b>Laboratory Control Sample Dup (3G09002-BSD1)</b>				Prepared & Analyzed: 07/09/03					
Methyl tert-butyl ether	10.5	0.50	ug/l	10.0		105	63-137	5.68	13
Benzene	9.19	0.50	"	10.0		91.9	78-124	1.73	12
Toluene	9.29	0.50	"	10.0		92.9	78-129	0.216	10
Surrogate: 1,2-Dichloroethane-d4	5.20		"	5.00		104	78-129		
<b>Laboratory Control Sample Dup (3G09002-BSD2)</b>				Prepared & Analyzed: 07/09/03					
Gasoline Range Organics (C6-C10)	365	50	ug/l	440		83.0	70-113	10.4	9 QR-02
Surrogate: 1,2-Dichloroethane-d4	5.34		"	5.00		107	78-129		
<b>Matrix Spike (3G09002-MS1)</b>				Source: MMG0082-02	Prepared & Analyzed: 07/09/03				
Methyl tert-butyl ether	234	5.0	ug/l	200	25	104	63-137		
Benzene	304	5.0	"	200	130	87.0	78-124		
Toluene	189	5.0	"	200	6.9	91.0	78-129		
Surrogate: 1,2-Dichloroethane-d4	5.66		"	5.00		113	78-129		
<b>Matrix Spike (3G09002-MS2)</b>				Source: MMG0082-08	Prepared: 07/09/03	Analyzed: 07/10/03			
Methyl tert-butyl ether	997	50	ug/l	992	130	87.4	63-137		
Benzene	492	50	"	640	65	66.7	78-124		QM-07
Toluene	2830	50	"	2970	18	94.7	78-129		
Gasoline Range Organics (C6-C10)	38600	5000	"	44000	ND	87.7	70-113		
Surrogate: 1,2-Dichloroethane-d4	5.39		"	5.00		108	78-129		
<b>Matrix Spike Dup (3G09002-MSD1)</b>				Source: MMG0082-02	Prepared & Analyzed: 07/09/03				
Methyl tert-butyl ether	230	5.0	ug/l	200	25	102	63-137	1.72	13
Benzene	299	5.0	"	200	130	84.5	78-124	1.66	12
Toluene	185	5.0	"	200	6.9	89.0	78-129	2.14	10
Surrogate: 1,2-Dichloroethane-d4	5.69		"	5.00		114	78-129		



URS Corporation [Arco]  
500 12th Street, Suite 100  
Oakland CA, 94607

Project: ARCO #6041, Dublin, CA  
Project Number: INTRIM - 50691  
Project Manager: Scott Robinson

MMG0041  
Reported:  
07/22/03 08:54

**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 3G09002 - EPA 5030B P/T**

Matrix Spike Dup (3G09002-MSD2)	Source: MMG0082-08			Prepared: 07/09/03 Analyzed: 07/10/03						
Methyl tert-butyl ether	960	50	ug/l	992	130	83.7	63-137	3.78	13	
Benzene	472	50	"	640	65	63.6	78-124	4.15	12	QM-07
Toluene	2740	50	"	2970	18	91.6	78-129	3.23	10	
Gasoline Range Organics (C6-C10)	36600	5000	"	44000	ND	83.2	70-113	5.32	9	
Surrogate: 1,2-Dichloroethane-d4	5.32		"	5.00		106	78-129			



URS Corporation [Arco]  
500 12th Street, Suite 100  
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Project: ARCO #6041, Dublin, CA  
Project Number: INTRIM - 50691  
Project Manager: Scott Robinson

MMG0041  
**Reported:**  
07/22/03 08:54

### Notes and Definitions

- QM-07 The spike recovery was outside control limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- QM-4X The spike recovery was outside of control limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
- QR-02 The RPD result exceeded the control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- QR-07 The RPD was outside control limits. 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





# Chain of Custody Record

mm60041

Page 1 of 1

Project Name 030608 - Act  
 BP BU/GEM CO Portfolio: \_\_\_\_\_  
 BP Laboratory Contract Number: \_\_\_\_\_

Date: 6/18/03 Requested Due Date (mm/dd/yy) Standard

On-site Time:	Temp:
Off-site Time:	Temp:
Sky Conditions:	
Meteorological Events:	
Wind Speed:	Direction:

Send To:	BP/GEM Facility No.:	Consultant/Contractor: URS
Lab Name: SEQUOIA	BP/GEM Facility Address: 7249 Village PKWY, DUBLIN, CA	Address: 500 12th St., Ste. 200
Lab Address: 886 Jarvis Dr. Morgan Hill, CA 95037	Site ID No. ARCO 6041	Oakland, CA 94609-4014
	Site Lat/Long:	e-mail EDD: syed_rehan@urscorp.com
	California Global ID #:	Consultant/Contractor Project No.: JS-00006041.01 00427
Lab PM: Lalonya Pelt	BP/GEM PM Contact: PAUL SUPPLE	Consultant Tele/Fax: 510-874-1735/510-874-3288
Tele/Fax: 408-778-9600 / 408-782-8308	Address:	Consultant/Contractor PM: Scott Robinson
Report Type & QC Level: Send EDP Reports	Tele/Fax:	Invoice to: Consultant/Contractor or (BP/GEM) (circle one)
BP/GEM Account No.:		BP/GEM Work Release No: INTRIM -10691

Item No.	Sample Description	Time	Matrix				Laboratory No.	No. of containers	Preservatives				Requested Analysis						Sample Point Lat/Long and Comments
			Soil/Solid	Water/Liquid	Sediments	Air			Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	TPH-G/STEX (3015-3021)	TPH-D (3015)	MTBE (3021)	MTBE, TAME, ETBE (3021)	1,2-DCA & EDB (3021)	Etanol (3021)	
1	MW-2	1050	X				01	3				X	X		X	X	X		
2	MW-3	1030	X				02	3				X	X		X	X	X		
3	MW-4	1040	X				03	3				X	X		X	X	X		
4	MW-6	1020	X				04	3				X	X		X	X	X		
5	MW-8	0920	X				05	3				X	X		X	X	X		
6																			
7																			
8																			
9																			
10																			

Sampler's Name: <u>Aaron Cook</u>	Relinquished By / Affiliation: <u>Blaine Tech</u>	Date: <u>7/1/03</u>	Time: <u>1034</u>	Accepted By / Affiliation: <u>[Signature]</u>	Date: <u>7/1/03</u>	Time: <u>1034</u>
Sampler's Company: <u>Blaine Tech</u>		Date: <u>7/1/03</u>	Time: <u>11:12</u>			
Shipment Date:						
Shipment Method:						
Tracking No:						

Instructions: Address Invoice to BP/GEM but send to URS for approval

Place Yes No X Temperature Blank Yes No X Cooler Temperature on Receipt 60°C Trip Blank Yes No X

White Copy - Laboratory / Yellow Copy - BP/GEM / Pink Copy - Consultant/Contractor

# SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: B.P.  
 REC. BY (PRINT): [Signature]  
 WORKORDER: mm60041

DATE REC'D AT LAB: 7/1/03  
 TIME REC'D AT LAB: 11:12  
 DATE LOGGED IN: 7-2-03

Drinking water for  
 regulatory purposes: YES/NO  
 Wastewater for  
 regulatory purposes: YES/NO

CIRCLE THE APPROPRIATE RESPONSE		LAB SAMPLE #	DASH #	CLIENT ID	CONTAINER DESCRIPTION	PRESER VATIVE	SAMPLE MATRIX	DATE SAMPLED	REMARKS: CONDITION (ETC.)
1. Custody Seal(s)	Present <u>(Absent)</u> Intact / Broken*	01		MW-2	(3) vials	HCL	L	6/28/03	
2. Chain-of-Custody	<u>(Present)</u> / Absent*	02		↓ 3	↓	↓	↓	↓	
3. Traffic Reports or Packing List:	Present <u>(Absent)</u>	03		↓ 4	↓	↓	↓	↓	
4. Airbill:	Airbill / Sticker Present <u>(Absent)</u>	04		↓ 6	↓	↓	↓	↓	
5. Airbill #:		05		↓ 8	↓	↓	↓	↓	
6. Sample Labels:	<u>(Present)</u> / Absent								
7. Sample IDs:	<u>(Listed)</u> / Not Listed on Chain-of-Custody								
8. Sample Condition:	<u>(Intact)</u> / Broken* / Leaking*								
9. Does information on custody reports, traffic reports and sample labels agree?	<u>(Yes)</u> / No*								
10. Sample received within hold time:	<u>(Yes)</u> / No*								
11. Proper Preservatives used:	<u>(Yes)</u> / No*								
12. Temp Rec. at Lab: Is temp 4 +/-2°C?	<u>6°C</u> <u>(Yes)</u> / No**								

(Acceptance range for samples requiring thermal pres.)

\*\*Exception (if any): Metals / DRP (Direct From Field)  
 or Problem COC

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

**ATTACHMENT C**

**EDCC REPORT AND EDF/GEOWELL SUBMITTAL CONFIRMATION**

---

## Error Summary Log

07/22/03

EDF 1.2i All files present in deliverable.

---

Laboratory:	Sequoia Analytical Laboratories, Inc., Morgan Hill, CA
Project Name:	ARCO #6041, Dublin, CA
Work Order Number:	MMG0041
Global ID:	NA
Lab Report Number:	MMG0041072220030854

## Report Summary

Labreport	Sampid	Labsampid	Mtrx	QC	Anmcode	Exmcode	Logdate	Extdate	Anadate	Lablotctl	Run Sub
MMG00410722200 MW-2 30854		MMG004101	W	CS	8260+OX	SW5030B	06/28/03	07/09/03	07/09/03	3G09001	1
MMG00410722200 MW-3 30854		MMG004102	W	CS	8260+OX	SW5030B	06/28/03	07/09/03	07/10/03	3G09002	1
MMG00410722200 MW-4 30854		MMG004103	W	CS	8260+OX	SW5030B	06/28/03	07/09/03	07/09/03	3G09001	1
MMG00410722200 MW-6 30854		MMG004104	W	CS	8260+OX	SW5030B	06/28/03	07/09/03	07/09/03	3G09001	1
MMG00410722200 MW-8 30854		MMG004105	W	CS	8260+OX	SW5030B	06/28/03	07/09/03	07/09/03	3G09001	1
		MMG008202	W	NC	8260+OX	SW5030B	//	07/09/03	07/09/03	3G09002	1
		MMG008208	W	NC	8260+OX	SW5030B	//	07/09/03	07/10/03	3G09002	1
		3G09001BS1	WQ	BS1	8260+OX	SW5030B	//	07/09/03	07/09/03	3G09001	1
		3G09001BS2	WQ	BS2	8260+OX	SW5030B	//	07/09/03	07/09/03	3G09001	1
		3G09001BLK1	WQ	LB1	8260+OX	SW5030B	//	07/09/03	07/09/03	3G09001	1
		3G09001MS1	W	MS1	8260+OX	SW5030B	//	07/09/03	07/09/03	3G09001	1
		3G09001MSD1	W	SD1	8260+OX	SW5030B	//	07/09/03	07/09/03	3G09001	1
		3G09002BSD1	WQ	BD1	8260+OX	SW5030B	//	07/09/03	07/09/03	3G09002	1
		3G09002BSD2	WQ	BD2	8260+OX	SW5030B	//	07/09/03	07/09/03	3G09002	1
		3G09002BS1	WQ	BS1	8260+OX	SW5030B	//	07/09/03	07/09/03	3G09002	1
		3G09002BS2	WQ	BS2	8260+OX	SW5030B	//	07/09/03	07/09/03	3G09002	1
		3G09002BLK1	WQ	LB1	8260+OX	SW5030B	//	07/09/03	07/09/03	3G09002	1
		3G09002MS1	W	MS1	8260+OX	SW5030B	//	07/09/03	07/09/03	3G09002	1
		3G09002MS2	W	MS2	8260+OX	SW5030B	//	07/09/03	07/10/03	3G09002	1
		3G09002MSD1	W	SD1	8260+OX	SW5030B	//	07/09/03	07/09/03	3G09002	1
		3G09002MSD2	W	SD2	8260+OX	SW5030B	//	07/09/03	07/10/03	3G09002	1

**EDFSAMP: Error Summary Log**

07/22/03

Error type	Logcode	Projname	Npdlwo	Sampled	Matrix
There are no errors in this data file					

## EDFTEST: Error Summary Log

07/22/03

Error type	Labsampid	Qccode	Anmcode	Exmcode	Anadate	Run number
Warning: Dulicate QC code within the batch	MMG008202	NC	8260+OX	SW5030B	07/09/03	1
Warning: Dulicate QC code within the batch	MMG008208	NC	8260+OX	SW5030B	07/10/03	1

## EDFRES: Error Summary Log

07/22/03

Error type	Labsampid	Qccode	Matrix	Anmcode	Pvccode	Anadate	Run number	Parlabel
Warning: extra parameter	3G09001MS1	MS1	W	8260+OX	PR	07/09/03	1	GROC6C10
Warning: extra parameter	3G09001MSD1	SD1	W	8260+OX	PR	07/09/03	1	GROC6C10
Warning: extra parameter	3G09002MS2	MS2	W	8260+OX	PR	07/10/03	1	GROC6C10
Warning: extra parameter	3G09002MSD2	SD2	W	8260+OX	PR	07/10/03	1	GROC6C10
Warning: extra parameter	MMG004101	CS	W	8260+OX	PR	07/09/03	1	GROC6C10
Warning: extra parameter	MMG004101	CS	W	8260+OX	PR	07/09/03	1	XYLENES
Warning: extra parameter	MMG004102	CS	W	8260+OX	PR	07/10/03	1	GROC6C10
Warning: extra parameter	MMG004102	CS	W	8260+OX	PR	07/10/03	1	XYLENES
Warning: extra parameter	MMG004103	CS	W	8260+OX	PR	07/09/03	1	GROC6C10
Warning: extra parameter	MMG004103	CS	W	8260+OX	PR	07/09/03	1	XYLENES
Warning: extra parameter	MMG004104	CS	W	8260+OX	PR	07/09/03	1	GROC6C10
Warning: extra parameter	MMG004104	CS	W	8260+OX	PR	07/09/03	1	XYLENES
Warning: extra parameter	MMG004105	CS	W	8260+OX	PR	07/09/03	1	GROC6C10
Warning: extra parameter	MMG004105	CS	W	8260+OX	PR	07/09/03	1	XYLENES
Warning: extra parameter	MMG008208	NC	W	8260+OX	PR	07/10/03	1	GROC6C10
Warning: extra parameter	3G09001BLK1	LB1	WQ	8260+OX	PR	07/09/03	1	GROC6C10
Warning: extra parameter	3G09001BLK1	LB1	WQ	8260+OX	PR	07/09/03	1	XYLENES
Warning: extra parameter	3G09001BS2	BS2	WQ	8260+OX	PR	07/09/03	1	GROC6C10
Warning: extra parameter	3G09002BLK1	LB1	WQ	8260+OX	PR	07/09/03	1	GROC6C10
Warning: extra parameter	3G09002BLK1	LB1	WQ	8260+OX	PR	07/09/03	1	XYLENES
Warning: extra parameter	3G09002BS2	BS2	WQ	8260+OX	PR	07/09/03	1	GROC6C10
Warning: extra parameter	3G09002BSD2	BD2	WQ	8260+OX	PR	07/09/03	1	GROC6C10



EDFQC: Error Summary Log

07/22/03

Error type	Lablotctl	Anmcode	Parlabel	Qccode	Labqcid
There are no errors in this data files					

**EDFCL: Error Summary Log**

07/22/03

Error type	Cirevdate	Anmcode	Exmcode	Parlabel	Cicode
There are no errors in this data file	//				

## AB2886 Electronic Delivery

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**Confirmation Number:** 6712069869

**Date/Time of Submittal:** 7/22/2003 12:22:40 PM

**Facility Global ID:** T0600100109

**Facility Name:** ARCO

**Submittal Title:** Second Quarter 03 Groundwater Monitoring Report for site # 6041

**Submittal Type:** GW Monitoring Report

Logged in as URSCORP-OAKLAND (CONTRACTOR)

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**Your file has been successfully submitted!**

**Submittal Title:**      **Second Quarter 2003 Groundwater Monitoring Report. Site #6041**

**Submittal Date/Time:**   **7/7/2003 10:52:34 AM**

**Confirmation**              **7010391056**  
**Number:**

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