

January 28, 2003

**Alameda County****FEB 11 2003**

Ms. Eva Chu  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502

**Environmental Health**


**Re: Third Quarter 2002 Groundwater Monitoring Report  
ARCO Service Station #2162  
15135 Hesperian Boulevard  
San Leandro, California  
URS Project #38465937**

Dear Ms. Chu:

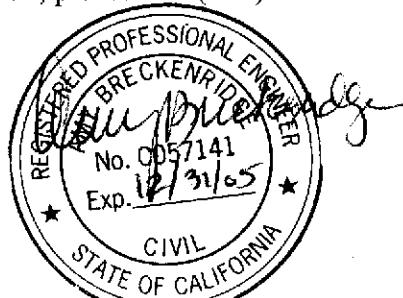
On behalf of Atlantic Richfield Company (ARCO-an affiliated company of the Group Environmental Management Company), URS Corporation (URS) is submitting the *Third Quarter 2002 Groundwater Monitoring Report* for ARCO Service Station #2162, located at 15135 Hesperian Boulevard, San Leandro, California.

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

Sincerely,

**URS CORPORATION**

Scott Robinson  
Project Manager



Amy P. Breckenridge, P.E.  
Portfolio Manager

Enclosure: Third Quarter 2002 Groundwater Monitoring Report

cc: Mr. Paul Supple, ARCO, P.O. Box 6549, Moraga, CA 94570

**ARCO Products Company**

4 Centerpointe Drive  
La Palma, California 90623-1066  
Telephone 714 670 5300

Mailing Address: P.O. Box 6549  
Moraga, California 94549



January 31, 2003

Re: ARCO Station # 2162 • 15135 Hesperian Boulevard • San Leandro, CA  
Third Quarter 2002 Quarterly Monitoring Report

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

Submitted by:

A handwritten signature in cursive script, appearing to read "Paul Supple".

Paul Supple  
Environmental Engineer

**R E P O R T**

**THIRD QUARTER 2002  
GROUNDWATER MONITORING**

**ARCO SERVICE STATION # 2162  
15135 HESPERIAN BOULEVARD  
SAN LEANDRO, CALIFORNIA**

*Prepared for*  
Atlantic Richfield Company

January 28, 2003

**URS**

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

38465937

Date: January 28, 2003

Quarter: 3Q 02

### ATLANTIC RICHFIELD COMPANY QUARTERLY GROUNDWATER MONITORING REPORT

Facility No.: 2162 Address: 15135 Hesperian Boulevard, San Leandro, California  
Atlantic Richfield Co. Environmental Engineer: Paul Supple  
Consulting Co./Contact Person: URS Corporation/ Scott Robinson  
Consultant Project No.: 38465937  
Primary Agency: ACHCSA

#### WORK PERFORMED THIS QUARTER (Third – 2002):

1. Performed third quarter 2002 monitoring event.
2. Prepared second quarter 2002 groundwater monitoring report.

#### WORK PROPOSED FOR NEXT QUARTER (Fourth – 2002):

1. Perform fourth quarter 2002 groundwater monitoring event.
2. Prepare third quarter 2002 groundwater monitoring report.

Current Phase of Project	<u>GW monitoring/sampling</u>
Frequency of Groundwater Sampling:	<u>Quarterly: MW-1, MW-2, MW-3, MW-4</u>
Frequency of Groundwater Monitoring:	<u>Quarterly</u>
Is Free Product (FP) Present On-Site:	<u>No</u>
Current Remediation Techniques:	<u>Natural Attenuation</u>
Approximate Depth to Groundwater:	<u>7.93 (MW-2) to 9.39 (MW-4) feet</u>
Groundwater Gradient (direction)	<u>Southwest</u>
Groundwater Gradient (magnitude)	<u>0.012 feet per foot</u>

#### DISCUSSION:

TPH-g was detected in one of four wells sampled this quarter at a concentration of 100 µg/L (MW-3). Benzene was not detected at or above the laboratory reporting limits in any of the wells sampled this quarter. MTBE was detected in three wells at concentrations ranging from 11 µg/L (MW-1) to 330 µg/L (MW-3). The groundwater flow direction was to the southwest at a calculated hydraulic gradient of 0.012 feet per foot.

**ATTACHMENTS:**

- Table 1 – Groundwater Elevation and Analytical Data
- Table 2 – Groundwater Flow Direction and Gradient
- Figure 1 – Groundwater Elevation Contour and Analytical Summary Map – July 19, 2002
- Attachment A – Field Procedures and Field Data Sheets
- Attachment B – Laboratory Procedures, Certified Analytical Reports, and Chain-of-Custody Records
- Attachment C – Historic Groundwater Data
- Attachment D – EDCC Report and EDF/Geowell Submittal Confirmation

**Table 1  
Groundwater Elevation and Analytical Data**

ARCO Service Station # 2162  
15135 Hesperian Boulevard  
San Leandro, California

Well Number	Date Sampled	Top of Riser Elevation (feet, MSL)	Depth to Groundwater (feet, TOC)	Groundwater Elevation (feet, MSL)	TPH as					
					Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-1	06/20/00	31.19	8.33	22.86	<50	<0.5	0.8	<0.5	<1.0	<10
	09/29/00		9.07	22.12	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	12/17/00		8.69	22.50	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	03/23/01		8.19	23.00	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	06/20/01		8.97	22.22	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	09/22/01		9.56	21.63	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	12/28/01		8.40	22.79	<50	<0.5	<0.5	<0.5	0.63	<2.5
	03/14/02		8.05	23.14	<50	<0.5	<0.5	<0.5	<0.5	170
	04/18/02		8.27	22.92	<50	<0.5	<0.5	<0.5	<0.5	NS
	<b>07/19/02</b>		<b>NP</b>	<b>8.88</b>	<b>22.31</b>	<b>&lt;50</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>
MW-2	06/20/00	30.38	7.38	23.00	NS	NS	NS	NS	NS	NS
	09/29/00		8.08	22.30	266	<0.5	<0.5	<0.5	<0.5	<2.5
	12/17/00		7.80	22.58	175	<0.5	<0.5	0.659	<0.5	<2.5
	03/23/01		7.23	23.15	351	<0.5	<0.5	0.912	<0.5	<2.5
	06/20/01		7.98	22.40	360	<0.5	<0.5	0.74	<0.5	<2.5
	09/22/01		8.55	21.83	190	<0.5	<0.5	<0.5	<0.5	<2.5
	12/28/01		7.53	22.85	130	<0.5	0.93	<0.5	0.51	<2.5
	03/14/02		7.17	23.21	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	04/18/02		7.31	23.07	74	<0.5	<0.5	<0.5	<0.5	NS
	<b>07/19/02</b>		<b>P</b>	<b>7.93</b>	<b>22.45</b>	<b>&lt;50</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>

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

ARCO Service Station # 2162  
15135 Hesperian Boulevard  
San Leandro, California

Well Number	Date Sampled	Top of Riser Elevation (feet, MSL)	Depth to Groundwater (feet, TOC)	Groundwater Elevation (feet, MSL)	TPH					
					as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-3	06/20/00	30.30	7.75	22.55	NS	NS	NS	NS	NS	NS
	09/29/00		8.46	21.84	<50	<0.5	<0.5	<0.5	<0.5	128
	12/17/00		8.01	22.29	<50	<0.5	<0.5	<0.5	<0.5	46.7
	03/23/01		7.70	22.60	<50	<0.5	<0.5	<0.5	<0.5	26.8
	06/20/01		8.23	22.07	<50	<0.5	<0.5	<0.5	<0.5	30
	09/22/01		8.89	21.41	<50	<0.5	<0.5	<0.5	<0.5	12
	12/28/01		7.83	22.47	<50	<0.5	<0.5	<0.5	<0.5	6.2
	03/14/02		7.48	22.82	<50	<0.5	<0.5	<0.5	<0.5	47
	04/18/02		7.62	22.68	<50	<0.5	<0.5	<0.5	<0.5	NS
	<b>07/19/02</b>		<b>P</b>	<b>8.23</b>	<b>22.07</b>	<b>100<sup>a</sup></b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>
MW-4	06/20/00	30.39	8.87	21.52	NS	NS	NS	NS	NS	NS
	09/29/00		9.61	20.78	<50	1.02	<0.5	<0.5	<0.5	12.2
	12/17/00		9.17	21.22	<50	<0.5	<0.5	<0.5	<0.5	5.81
	03/23/01		8.70	21.69	<50	<0.5	<0.5	<0.5	<0.5	3.04
	06/20/01		9.51	20.88	<50	<0.5	<0.5	<0.5	<0.5	<2.5
	09/22/01		10.06	20.33	<50	<0.5	<0.5	<0.5	<0.5	5.2
	12/28/01		8.86	21.53	<50	<0.5	<0.5	<0.5	<0.5	4.3
	03/14/02		8.52	21.87	<50	<0.5	<0.5	<0.5	<0.5	5.1
	04/18/02		8.76	21.63	<50	<0.5	<0.5	<0.5	<0.5	NS
	<b>07/19/02</b>		<b>NP</b>	<b>9.39</b>	<b>21.00</b>	<b>&lt;50</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>

**Table 1  
Groundwater Elevation and Analytical Data**

ARCO Service Station # 2162  
15135 Hesperian Boulevard  
San Leandro, California

Well Number	Date Sampled	Top of Riser Elevation (feet, MSL)	Depth to Groundwater (feet, TOC)	Groundwater Elevation (feet, MSL)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
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- TPH = Total petroleum hydrocarbons analyzed using EPA Method 8015B, Modified
- BTEX = Benzene, toluene, ethyl benzene, and total xylenes analyzed using EPA Method 8021B.
- MTBE = Methyl tertiary butyl ether analyzed by EPA Method 8021B unless otherwise noted
- µg/L = Micrograms per liter equivalent to parts per billion (ppb)
- < = Not detected at or above specified laboratory method detection limit
- MSL = Mean sea level
- TOC = Top of casing
- P = Purge
- NP = No Purge
- NS = Not sampled
- a = Hydrocarbon pattern is present in the requested fuel quantitation range but does not represent the pattern of the requested fuel

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



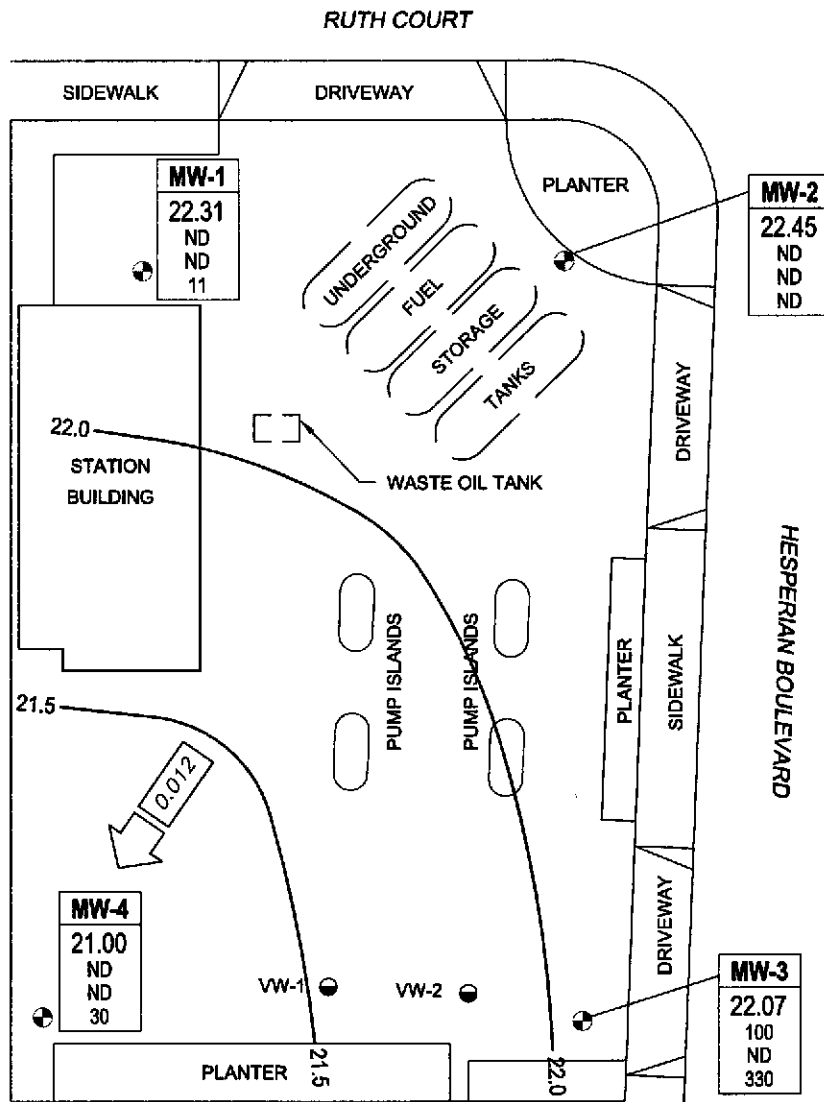
**Table 2**  
**Groundwater Flow Direction and Gradient**

ARCO Service Station # 2162  
15135 Hesperian Boulevard  
San Leandro, California

Date Measured	Average Flow Direction	Average Hydraulic Gradient
06/20/00	Southwest	0.010
09/29/00	Southwest	0.010
12/17/00	Southwest	0.010
03/23/01	Southwest	0.011
06/20/01	Southwest	0.013
09/22/01	Southwest	0.012
12/28/01	Southwest	0.010
03/14/02	Southwest	0.011
04/18/02	Southwest	0.012
07/19/02	Southwest	0.012

**Note:**

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

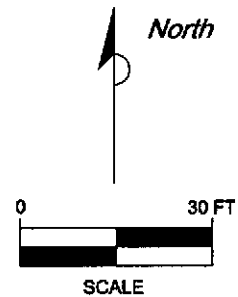


**LEGEND**

- ⊕ MW-1 MONITORING WELL LOCATION
- VW-1 SOIL VAPOR EXTRACTION WELL LOCATION
- 21.5 — WATER TABLE CONTOUR IN FEET ABOVE MSL
- ← 0.012 APPROXIMATE GROUNDWATER FLOW GRADIENT

Well
ELEV
TPH-g
Benzene
MTBE

- WELL DESIGNATION
- GROUNDWATER ELEVATION IN FEET ABOVE MSL
- CONCENTRATION OF TPH-g, BENZENE AND MTBE IN MICROGRAMS PER LITER (µg/L)
- ND NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMITS



NOTE: SITE MAP ADAPTED FROM IT CORPORATION FIGURES. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.



**Project No. 38465937**  
**Arco Service Station 2162**  
**15135 Hesperian Boulevard**  
**San Leandro, California**

**GROUNDWATER ELEVATION CONTOUR**  
**AND ANALYTICAL SUMMARY MAP**  
**Third Quarter 2002 (July 19, 2002)**

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™ 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 # 020719-B02 Date 7/19/02 Client Arco 2162

Site 75135 Highway, San Leandro

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 TOC	
MW-1	4					8.88	15.95	TOC	Dedicated NPE 8' Tub
MW-2	4					7.93	15.96		Dedicated NPE 8' Tub
MW-3	4					8.23	14.96		Dedicated Tube
MW-4	4					9.39	17.70	↓	Dedicated NPE 8' Tub

## ARCO / BP WELL MONITORING DATA SHEET

BTS #: 020719-BA2	Station # 2162
Sampler: BEVAN ALCOX	Date: 7/19/02
Well I.D.: MW-1	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth: 15.95	Depth to Water: 8.88
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"	<u>0.65</u>
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: 8' If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

$\phi$	x	<u>3</u>	=	$\phi$	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Conductivity (mS or <u>µS</u> )	Gals. Removed	Observations
1505	73.1	8.2	872	$\phi$	clear

Did well dewater? Yes  No  Gallons actually evacuated:  $\phi$

Sampling Time: 1505 Sampling Date: 7/19/02

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

Analyzed for: TPH-G BTEX MTBE TPH-D Other: \_\_\_\_\_

D.O. (if req'd):	Pre-purge:	mg/L	<u>Post-purge:</u>	1.0	mg/L
	Post-purge:	mV	Post-purge:		mV

## ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>020719-8A2</u>	Station # <u>2162</u>
Sampler: <u>Brown Allen</u>	Date: <u>7/19/02</u>
Well I.D.: <u>MW-2</u>	Well Diameter: 2 3 <b>4</b> 6 8
Total Well Depth: <u>15.96</u>	Depth to Water: <u>7.93</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	<u>0.65</u>
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: 8' 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>5.2</u>	x	<u>3</u>	=	<u>15.6</u>	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Conductivity (mS or µS)	Gals. Removed	Observations
1554	72.8	7.8	857	5	clear brown mild odor
1556	71.2	7.6	848	10	"
1557	71.4	7.6	846	15	"

Did well dewater? Yes  No

Gallons actually evacuated: 15

Sampling Time: 1605 Sampling Date: 7/19/02

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

Analyzed for: TPH-G BTEX MTBE TPH-D Other: \_\_\_\_\_

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>020719-BA2</u>	Station # <u>2162</u>
Sampler: <u>Braun Alcor</u>	Date: <u>7/19/02</u>
Well I.D.: <u>MW-3</u>	Well Diameter: 2 3 <u>(4)</u> 6 8
Total Well Depth: <u>14.96</u>	Depth to Water: <u>8.23</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"	<u>0.65</u>
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Purge Method: <u>Bailer</u> Disposable Bailer <u>Middleburg</u> <u>Electric Submersible</u> Extraction Pump Other: _____	Sampling Method: <u>Bailer</u> <u>Disposable Bailer</u> Extraction Port Other: _____
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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 <u>µS</u> )	Gals. Removed	Observations
1532	77.1	8.1	625	4.5	clear brown mil. lcl. color
1534	73.6	7.6	619	9	"
1535	73.0	7.6	611	13.5	"
Well Dewatered at end of third case volume - sampled as normal					

Did well dewater? <u>Yes</u> No	Gallons actually evacuated: <u>13.5</u>
Sampling Time: <u>1540</u>	Sampling Date: <u>7/19/02</u>
Sample I.D.: <u>MW-3</u>	Laboratory: Pac <u>Sequoia</u> Other _____
Analyzed for: <u>TPH-G BTEX MTBE TPH-D</u> Other:	
D.O. (if req'd):	Pre-purge: _____ mg/L
	Post-purge: <u>0.9</u> mg/L
O.R.P. (if req'd):	Pre-purge: _____ mV
	Post-purge: _____ mV



## ARCO / BP WELL MONITORING DATA SHEET

BTS #: 020719-3A2	Station # 2162
Sampler: Berman Alcorn	Date: 7/19/02
Well I.D.: MW-4	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth: 17.70	Depth to Water: 9.39
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"	<u>0.65</u>
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: 8'

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

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

Time	Temp (°F)	pH	Conductivity (mS or <u>µS</u> )	Gals. Removed	Observations
1515	73.3	7.8	850	$\phi$	clear

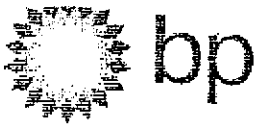
Did well dewater? Yes  No  Gallons actually evacuated:  $\phi$

Sampling Time: 1515 Sampling Date: 7/19/02

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

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	1.8	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:		mV



# Chain of Custody Record

Project Name \_\_\_\_\_  
 BP BU/GEM CO Portfolio: \_\_\_\_\_  
 BP Laboratory Contract Number: \_\_\_\_\_  
 Date: 7/19/02 Requested Due Date (mm/dd/yyyy) \_\_\_\_\_

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: 15135 HESPERIAN BLVD, San Leandro, CA	Address: 529 12th St, Ste. 200
Lab Address: 885 Jarvis Dr. Morgan Hill, CA 95037	Site ID No. ARCO 2162	Oakland, CA 94609-4014
	Site Lat/Long:	e-mail EDD: syed_rehan@urscorp.com
	California Global ID #: T0600100084	Consultant/Contractor Project No.: J5-00002162.01 00427
Lab PM: Latonya Pelt	BP/GEM PM Contact: PAUL SUPPLE	Consultant Tele/Fax: 510-874-3280/510-874-3268
Tele/Fax: 408-776-9600 / 408-782-6308	Address:	Consultant/Contractor PM: Scott Robinson
Report Type & QC Level: Send EDF Reports	Tele/Fax:	Invoice to: Consultant/Contractor or BP/GEM (Circle one)
BP/GEM Account No.:		BP/GEM Work Release No:

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/BTEX (8015/8021)	TPH-D (8015)	MTBE (8021)	MTBE, TAME, ETBE	DIPE, TBA (8260)	1,2-DCA & EDB (8260)						
1	MW-1	1505		X			3						X		X									
2	MW-2	1605		X			3						X		X									
3	MW-3	1540		X			3						X		X									
4	MW-4	1516		X			3						X		X									
5																								
6																								
7																								
8																								
9																								
10																								

Sampler's Name: <u>Brian Alvarez</u>	Relinquished By / Affiliation: <u>Worland</u>	Date: <u>7/22/02</u>	Time: <u>0910</u>	Accepted By / Affiliation: <u>[Signature]</u>	Date: <u>7/22/02</u>	Time: <u>910</u>
Sampler's Company: <u>BURNING TECH</u>						
Shipment Date:						
Shipment Method:						
Shipment Tracking No:						
Special 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

# WELLHEAD INSPECTION CHECKLIST AND REPAIR ORDER

Client Arco Inspection Date 7/19/02

Site Address 15135 Hesperian, San Leandro Inspected By Brian Alcorn

1. Lid on box?	6. Casing secure?	12. Water standing in wellbox?	15. Well cap functional?
2. Lid broken?	7. Casing cut level?	12a. Standing above the top of casing?	16. Can cap be pulled loose?
3. Lid bolts missing?	8. Debris in wellbox?	12b. Standing below the top of casing?	17. Can cap seal out water?
4. Lid bolts stripped?	9. Wellbox is too far above grade?	12c. Water even with the top of casing?	18. Padlock present?
5. Lid seal intact?	10. Wellbox is too far below grade?	13. Well cap present?	19. Padlock functional?
	11. Wellbox is crushed/damaged?	14. Well cap found secure?	

Check box if no deficiencies were found. Note below deficiencies you were able to correct.

Well I.D.	Deficiency	Corrective Action Taken

Note below all deficiencies that could not be corrected and still need to be corrected.

Well I.D.	Persisting Deficiency	BTS Office assigns or defers Correction to:	Date assigned	Date corrected
MW-1	(15) warped (19) rusted	BTS can replace caps & locks if requested		
MW-4	(15) rusted (19) unknown (12b) rusted			
MW-3	(15) rusted broken (19) unknown rusted (12b)			
MW-2	(19) unknown lock			

**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:

2162

Station #

15135 Hesperian

Station Address

Total Gallons Collected From Groundwater Monitoring Wells:

added equip.  
rinse water \_\_\_\_\_

any other  
adjustments \_\_\_\_\_

**TOTAL GALS.  
RECOVERED** 28.5

loaded onto  
BTS vehicle # \_\_\_\_\_

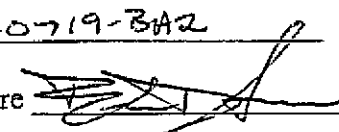
BTS event #

time                      date

020719-BA2

1615                      7/19/02

signature



\*\*\*\*\*

REC'D AT

time                      date

unloaded by  
signature \_\_\_\_\_

\_\_\_\_\_ / /

**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 noted on 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.



**Sequoia  
Analytical**

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

---

31 July, 2002

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

RE: ARCO #2162, San Leandro, Ca  
Sequoia Report: MLG0422

Enclosed are the results of analyses for samples received by the laboratory on 07/22/02 13:35. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Latonya K. Pelt".

Latonya Pelt  
Project Manager

CA ELAP Certificate #1210



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

Project: ARCO #2162, San Leandro, Ca  
Project Number: ARCO #2162, San Leandro, CA  
Project Manager: Scott Robinson

**Reported:**  
07/31/02 08:57

**ANALYTICAL REPORT FOR SAMPLES**

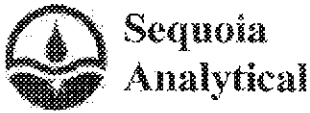
Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	MLG0422-01	Water	07/19/02 15:05	07/22/02 13:35
MW-2	MLG0422-02	Water	07/19/02 16:05	07/22/02 13:35
MW-3	MLG0422-03	Water	07/19/02 15:40	07/22/02 13:35
MW-4	MLG0422-04	Water	07/19/02 15:15	07/22/02 13:35

Sequoia Analytical - Morgan Hill

Latonya Pelt, Project Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*





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

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

Project: ARCO #2162, San Leandro, Ca  
 Project Number: ARCO #2162, San Leandro, CA  
 Project Manager: Scott Robinson

Reported:  
 07/31/02 08:57

**Total Purgeable Hydrocarbons (C6-C10) by EPA 8015B modified, BTEXM by EPA 8021B**  
**Sequoia Analytical - Morgan Hill**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-1 (MLG0422-01) Water</b> <b>Sampled: 07/19/02 15:05</b> <b>Received: 07/22/02 13:35</b>									
Gasoline Range Organics (C6-C10)	ND	50	ug/l	1	2G25002	07/25/02	07/25/02	8015Bm/8021 B	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
<b>Methyl tert-butyl ether</b>	<b>11</b>	2.5	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		125 %	70-130		"	"	"	"	
<b>MW-2 (MLG0422-02) Water</b> <b>Sampled: 07/19/02 16:05</b> <b>Received: 07/22/02 13:35</b>									
Gasoline Range Organics (C6-C10)	ND	50	ug/l	1	2G24003	07/24/02	07/24/02	8015Bm/8021 B	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	2.5	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		90.4 %	70-130		"	"	"	"	
<b>MW-3 (MLG0422-03) Water</b> <b>Sampled: 07/19/02 15:40</b> <b>Received: 07/22/02 13:35</b>									
Gasoline Range Organics (C6-C10)	100	100	ug/l	2	2G25002	07/25/02	07/25/02	8015Bm/8021 B	HC-12
Benzene	ND	1.0	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	
<b>Methyl tert-butyl ether</b>	<b>330</b>	5.0	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		111 %	70-130		"	"	"	"	



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

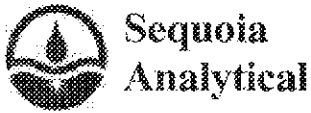
Project: ARCO #2162, San Leandro, Ca  
Project Number: ARCO #2162, San Leandro, CA  
Project Manager: Scott Robinson

**Reported:**  
07/31/02 08:57

**Total Purgeable Hydrocarbons (C6-C10) by EPA 8015B modified, BTEXM by EPA 8021B**

**Sequoia Analytical - Morgan Hill**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-4 (MLG0422-04) Water Sampled: 07/19/02 15:15 Received: 07/22/02 13:35</b>									
Gasoline Range Organics (C6-C10)	ND	50	ug/l	1	2G24003	07/24/02	07/24/02	8015Bm/8021 B	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
<b>Methyl tert-butyl ether</b>	<b>30</b>	<b>2.5</b>	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		99.4 %		70-130	"	"	"	"	



**Sequoia  
Analytical**

885 Jarvis Drive  
Morgan Hill, CA 95037  
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FAX (408) 782-6308  
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URS Corporation  
500 12th Street, Suite 100  
Oakland CA, 94607

Project: ARCO #2162, San Leandro, Ca  
Project Number: ARCO #2162, San Leandro, CA  
Project Manager: Scott Robinson

**Reported:**  
07/31/02 08:57

**Total Purgeable Hydrocarbons (C6-C10) by EPA 8015B modified, BTEXM by EPA 8021B - Quality Control  
Sequoia Analytical - Morgan Hill**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	-----------	--------	-----	-----------	-------

**Batch 2G24003 - EPA 5030B [P/T]**

**Blank (2G24003-BLK1)**

Prepared & Analyzed: 07/24/02

Gasoline Range Organics (C6-C10)	ND	50	ug/l							
Benzene	ND	0.50	"							
Toluene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Methyl tert-butyl ether	ND	2.5	"							

*Surrogate: a,a,a-Trifluorotoluene*      10.7      "      10.0      107      70-130

**LCS (2G24003-BS1)**

Prepared & Analyzed: 07/24/02

Benzene	9.85	0.50	ug/l	10.0		98.5	70-130			
Toluene	9.73	0.50	"	10.0		97.3	70-130			
Ethylbenzene	10.4	0.50	"	10.0		104	70-130			
Xylenes (total)	31.0	0.50	"	30.0		103	70-130			

*Surrogate: a,a,a-Trifluorotoluene*      9.85      "      10.0      98.5      70-130

**LCS (2G24003-BS2)**

Prepared & Analyzed: 07/24/02

Gasoline Range Organics (C6-C10)	243	50	ug/l	250		97.2	70-130			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	10.7	"	"	10.0		107	70-130			

**Matrix Spike (2G24003-MS1)**

Source: MLG0422-02

Prepared & Analyzed: 07/24/02

Gasoline Range Organics (C6-C10)	539	50	ug/l	550	ND	94.4	60-140			
Benzene	8.87	0.50	"	6.60	ND	133	60-140			
Toluene	40.6	0.50	"	39.7	ND	102	60-140			
Ethylbenzene	10.1	0.50	"	9.20	ND	110	60-140			
Xylenes (total)	52.2	0.50	"	46.1	ND	113	60-140			

*Surrogate: a,a,a-Trifluorotoluene*      12.4      "      10.0      124      70-130

**Matrix Spike Dup (2G24003-MSD1)**

Source: MLG0422-02

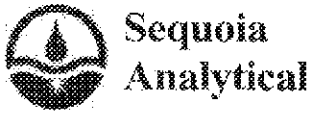
Prepared & Analyzed: 07/24/02

Gasoline Range Organics (C6-C10)	506	50	ug/l	550	ND	88.4	60-140	6.32	25	
Benzene	7.96	0.50	"	6.60	ND	119	60-140	10.8	25	
Toluene	36.4	0.50	"	39.7	ND	91.2	60-140	10.9	25	
Ethylbenzene	9.25	0.50	"	9.20	ND	101	60-140	8.79	25	
Xylenes (total)	46.8	0.50	"	46.1	ND	102	60-140	10.9	25	

*Surrogate: a,a,a-Trifluorotoluene*      10.9      "      10.0      109      70-130

Sequoia Analytical - Morgan Hill

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

Project: ARCO #2162, San Leandro, Ca  
 Project Number: ARCO #2162, San Leandro, CA  
 Project Manager: Scott Robinson

Reported:  
 07/31/02 08:57

**Total Purgeable Hydrocarbons (C6-C10) by EPA 8015B modified, BTEXM by EPA 8021B - Quality Control**  
**Sequoia Analytical - Morgan Hill**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Notes
<b>Batch 2G25002 - EPA 5030B [P/T]</b>										
<b>Blank (2G25002-BLK1)</b> <span style="float:right">Prepared &amp; Analyzed: 07/25/02</span>										
Gasoline Range Organics (C6-C10)	ND	50	ug/l							
Benzene	ND	0.50	"							
Toluene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Methyl tert-butyl ether	ND	2.5	"							
<i>Surrogate: a,a,a-Trifluorotoluene</i>	<i>12.1</i>		<i>"</i>	<i>10.0</i>		<i>121</i>	<i>70-130</i>			
<b>LCS (2G25002-BS1)</b> <span style="float:right">Prepared &amp; Analyzed: 07/25/02</span>										
Benzene	10.7	0.50	ug/l	10.0		107	70-130			
Toluene	10.9	0.50	"	10.0		109	70-130			
Ethylbenzene	11.2	0.50	"	10.0		112	70-130			
Xylenes (total)	33.4	0.50	"	30.0		111	70-130			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	<i>10.8</i>		<i>"</i>	<i>10.0</i>		<i>108</i>	<i>70-130</i>			
<b>LCS (2G25002-BS2)</b> <span style="float:right">Prepared &amp; Analyzed: 07/25/02</span>										
Gasoline Range Organics (C6-C10)	268	50	ug/l	250		107	70-130			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	<i>10.1</i>		<i>"</i>	<i>10.0</i>		<i>101</i>	<i>70-130</i>			
<b>Matrix Spike (2G25002-MS1)</b> <span style="float:right">Source: MLG0480-05 Prepared &amp; Analyzed: 07/25/02</span>										
Gasoline Range Organics (C6-C10)	514	50	ug/l	550	ND	93.5	60-140			
Benzene	10.4	0.50	"	6.60	ND	158	60-140			QM-07
Toluene	43.1	0.50	"	39.7	ND	109	60-140			
Ethylbenzene	10.2	0.50	"	9.20	ND	111	60-140			
Xylenes (total)	51.3	0.50	"	46.1	ND	111	60-140			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	<i>11.1</i>		<i>"</i>	<i>10.0</i>		<i>111</i>	<i>70-130</i>			
<b>Matrix Spike Dup (2G25002-MSD1)</b> <span style="float:right">Source: MLG0480-05 Prepared &amp; Analyzed: 07/25/02</span>										
Gasoline Range Organics (C6-C10)	564	50	ug/l	550	ND	103	60-140	9.28	25	
Benzene	10.7	0.50	"	6.60	ND	162	60-140	2.84	25	QM-07
Toluene	42.6	0.50	"	39.7	ND	107	60-140	1.17	25	
Ethylbenzene	10.2	0.50	"	9.20	ND	111	60-140	0.00	25	
Xylenes (total)	50.9	0.50	"	46.1	ND	110	60-140	0.783	25	
<i>Surrogate: a,a,a-Trifluorotoluene</i>	<i>10.2</i>		<i>"</i>	<i>10.0</i>		<i>102</i>	<i>70-130</i>			



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

Project: ARCO #2162, San Leandro, Ca  
Project Number: ARCO #2162, San Leandro, CA  
Project Manager: Scott Robinson

**Reported:**  
07/31/02 08:57

#### Notes and Definitions

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

QM-07 The spike recovery was outside control limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

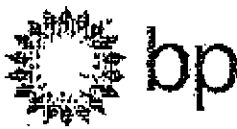
DET Analyte DETECTED

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



STANDARD OPERATING PROCEDURES  
Chain of Custody Record

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

Date: 7/19/02 Requested Due Date (mm/dd/yy) \_\_\_\_\_

MLG 0422

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: 15135 HESPERIAN BLVD, San Leandro, CA	Address: 529 12th St, Ste. 200
Lab Address: 885 Jarvis Dr, Morgan Hill, CA 95037	Site ID No. ARCO 2162	Oakland, CA 94609-4014
	Site Lat/Long:	e-mail EDD: syed_rehan@urscorp.com
Lab PM: Latonya Pelt	California Global ID #: T0600100084	Consultant/Contractor Project No.: 75-00002162.0: 00427
Tele/Fax: 408-776-9600 / 408-782-6308	BP/GEM PM Contact: PAUL SUPPLE	Consultant Tele/Fax: 510-874-3280/510-874-3268
Report Type & QC Level: Send EDF Reports	Address:	Consultant/Contractor PM: Scott Robinson
BP/GEM Account No.:	Tele/Fax:	Invoice to: Consultant/Contractor or BP/GEM (Circle one)
Lab Bottle Order No.:		BP/GEM Work Release No.:

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/RTX (8015/8021)	TPH-D (8015)	MTBE (8021)	MTBE, TAME, EDB	DIPE, TBA (8260)	1,2-DCA & EDB (8260)	
1	MW-1	1505		X			01	3					X	X					
2	MW-2	1605		X			02	3					X	X					
3	MW-3	1840		X			03	3					X	X					
4	MW-4	1546		X			04	3					X	X					
5																			
6																			
7																			
8																			
9																			
10																			

Sampler's Name: <u>Brianne Adams</u>	Relinquished By / Affiliation: <u>[Signature]</u>	Date: <u>7/22/02</u>	Time: <u>0910</u>	Accepted By / Affiliation: <u>[Signature]</u>	Date: <u>7/22/02</u>	Time: <u>9:10</u>
Sampler's Company: <u>Brown Tech</u>		Date: <u>7/22/02</u>	Time: <u>1335</u>		Date: <u>7/22/02</u>	Time: <u>1335</u>
Shipment Date:						
Shipment Method:						
Shipment Tracking No.:						

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

Seals In Place Yes  No  Temperature Blank Yes  No  Cooler Temperature on Receipt 22 °F/C Trip Blank Yes  No

**ATTACHMENT C**  
**HISTORIC GROUNDWATER DATA**

**Table 1**  
**Groundwater Elevation and Analytical Data**  
**Total Purgeable Petroleum Hydrocarbons**  
**(TPPH as Gasoline, BTEX Compounds, and MTBE)**

**ARCO Service Station 2162**  
**15135 Hesperian Boulevard, San Leandro, California**

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Xylenes (ppb)	MTBE 8020 (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
MW-1	02/26/96	31.19	7.14	24.05	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	
MW-1	05/23/96	31.19	7.70	23.49	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	
MW-1	08/21/96	31.19	8.75	22.44	210	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NA	
MW-1	11/20/96	31.19	8.62	22.57	91	<0.5	<0.5	<0.5	<0.5	2.6	NA	NA	
MW-1	04/01/97	31.19	8.70	22.49	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NA	NP
MW-1	06/10/97	31.19	8.45	22.74	94	<0.5	<0.5	0.68	0.56	6.4	NA	NA	NP
MW-1	09/17/97	31.19	9.20	21.99	<50	<0.5	<0.5	<0.5	<0.5	10	NA	1.0	NP
MW-1	12/12/97	31.19	8.00	23.19	<200	<2.0	<2.0	<2.0	<2.0	180	NA	2.0	NP
MW-1	03/25/98	31.19	7.00	24.19	<200	<2	<2	3	<2	180	NA	2.0	
MW-1	05/14/98	31.19	7.46	23.73	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.17	P
MW-1	07/31/98	31.19	8.10	23.09	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	2.0	NP
MW-1	10/12/98	31.19	8.60	22.59	<50	<0.5	<0.5	<0.5	<0.5	9	NA	2.5	NP
MW-1	02/11/99	31.19	7.32	23.87	<50	<0.5	<0.5	<0.5	<0.5	25	NA	1.0	P
MW-1	06/23/99	31.19	8.40	22.79	55	<0.5	<0.5	<0.5	<0.5	<3	NA	1.36	NP
MW-1	08/23/99	31.19	8.85	22.34	<50	<0.5	0.6	<0.5	<0.5	5	NA	1.42	NP
MW-1	10/27/99	31.19	8.50	22.69	<50	<0.5	<0.5	<0.5	<1	90	NA	0.83	NP
MW-2	02/26/96	30.38	6.41	23.97	770	<0.5	<0.5	45	28	NA	NA	NA	
MW-2	05/23/96	30.38	6.80	23.58	590	0.50	<0.5	35	18	NA	NA	NA	
MW-2	08/21/96	30.38	7.80	22.58	170	<0.5	<0.5	21	6.3	<2.5	NA	NA	
MW-2	11/20/96	30.38	7.73	22.65	88	<0.5	<0.5	7.9	1.1	<2.5	NA	NA	
MW-2	04/01/97	30.38	7.83	22.55	66	<0.5	<0.5	3.6	0.56	33	NA	NA	
MW-2	06/10/97	30.38	7.52	22.86	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NA	NP
MW-2	09/17/97	30.38	8.24	22.14	<50	<0.5	<0.5	<0.5	<0.5	<3.0	NA	0.6	NP
MW-2	12/12/97	30.38	7.10	23.28	<50	<0.5	<0.5	<0.5	<0.5	<3.0	NA	1.2	NP
MW-2	03/25/98	30.38	6.27	24.11	<50	<0.5	<0.5	0.7	0.5	55	NA	1.0	
MW-2	05/14/98	30.38	6.54	23.84	210	<0.5	<0.5	3.3	<0.5	42	NA	1.47	P
MW-2	07/31/98	30.38	7.14	23.24	230	<0.5	<0.5	3.9	<0.5	6	NA	1.0	P
MW-2	10/12/98	30.38	7.65	22.73	110	<0.5	<0.5	1.5	<0.5	<3	NA	1.0	P



**Table 1**  
**Groundwater Elevation and Analytical Data**  
**Total Purgeable Petroleum Hydrocarbons**  
**(TPPH as Gasoline, BTEX Compounds, and MTBE)**

**ARCO Service Station 2162**  
**15135 Hesperian Boulevard, San Leandro, California**

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Xylenes (ppb)	MTBE 8020 (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
MW-2	02/11/99	30.38	6.55	23.83	660	<0.5	<0.5	6.7	0.7	3	NA	1.0	P
MW-2	06/23/99	30.38	7.48	22.90	270	<0.5	<0.5	2.2	0.8	<3	NA	NM	P
MW-2	08/23/99	30.38	7.89	22.49	200	<0.5	0.9	1.8	<0.5	<3	NA	1.17	P
MW-2	10/27/99	30.38	8.30	22.08	2,100	1.0	2.5	14	3	3	NA	0.75	NP
MW-3	02/26/96	30.30	6.72	23.58	120	5.0	<0.5	<0.5	<0.5	NA	NA	NA	
MW-3	05/23/96	30.30	7.18	23.12	140	12	<0.5	<0.5	<0.5	NA	NA	NA	
MW-3	08/21/96	30.30	8.17	22.13	<50	1.1	<0.5	<0.5	<0.5	130	NA	NA	
MW-3	11/20/96	30.30	8.03	22.27	55	<0.5	<0.5	<0.5	<0.5	59	NA	NA	
MW-3	04/01/97	30.30	8.09	22.21	<50	<0.5	<0.5	<0.5	<0.5	180	NA	NA	NP
MW-3	06/10/97	30.30	7.97	22.33	<50	<0.5	<0.5	<0.5	<0.5	1,900	NA	NA	NP
MW-3	09/17/97	30.30	8.54	21.76	<5,000	<50	<50	<50	<50	1,100	860	2.2	NP
MW-3	12/12/97	30.30	7.50	22.80	560	<5.0	<5.0	<5.0	5.0	370	NA	1.4	NP
MW-3	03/25/98	30.30	6.60	23.70	<500	<5	<5	<5	<5	470	NA	1.0	
MW-3	05/14/98	30.30	7.13	23.17	750	<5	<5	<5	<5	630	NA	1.97	P
MW-3	07/31/98	30.30	7.58	22.72	<500	<5	<5	<5	<5	590	NA	1.0	P
MW-3	10/12/98	30.30	8.00	22.30	<500	<5	<5	<5	<5	600	NA	2.0	P
MW-3	02/11/99	30.30	6.90	23.40	<500	<5	<5	<5	<5	280	NA	1.0	P
MW-3	06/23/99	30.30	7.82	22.48	220	<0.5	3.2	<0.5	<0.5	740	NA	1.98	P
MW-3	08/23/99	30.30	8.28	22.02	<50	<0.5	1.1	<0.5	<0.5	230	NA	1.20	P
MW-3	10/27/99	30.30	9.27	21.03	<50	<0.5	<0.5	<0.5	<1	<3	NA	0.81	NP
MW-4	02/26/96	30.39	7.59	22.80	110	9.9	<0.5	<0.5	<0.5	NA	NA	NA	
MW-4	05/23/96	30.39	8.22	22.17	69	8.0	<0.5	<0.5	<0.5	NA	NA	NA	
MW-4	08/21/96	30.39	9.28	21.11	<50	6.8	<0.5	<0.5	<0.5	<2.5	NA	NA	
MW-4	11/20/96	30.39	9.12	21.27	95	10	0.59	<0.5	0.52	3.8	NA	NA	
MW-4	04/01/97	30.39	8.45	21.94	73	5.7	<0.5	<0.5	<0.5	<2.5	NA	NA	
MW-4	06/10/97	30.39	9.00	21.39	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NA	NP
MW-4	09/17/97	30.39	9.76	20.63	<50	3.2	<0.5	<0.5	<0.5	8.0	NA	0.2	NP

**Table 1**  
**Groundwater Elevation and Analytical Data**  
**Total Purgeable Petroleum Hydrocarbons**  
**(TPPH as Gasoline, BTEX Compounds, and MTBE)**

**ARCO Service Station 2162**  
**15135 Hesperian Boulevard, San Leandro, California**

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Xylenes (ppb)	MTBE 8020 (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
MW-4	12/12/97	30.39	8.45	21.94	<50	2.9	<0.5	<0.5	<0.5	14	NA	1.0	NP
MW-4	03/25/98	30.39	7.52	22.87	58	2.8	<0.5	<0.5	<0.5	<3	NA	3.0	
MW-4	05/14/98	30.39	8.03	22.36	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	3.24	NP
MW-4	07/31/98	30.39	8.67	21.72	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	2.0	NP
MW-4	10/12/98	30.39	9.15	21.24	<50	<0.5	<0.5	<0.5	<0.5	4	NA	1.5	NP
MW-4	02/11/99	30.39	7.80	22.59	61	2.5	<0.5	<0.5	<0.5	6	NA	1.0	P
MW-4	06/23/99	30.39	9.00	21.39	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.42	NP
MW-4	08/23/99	30.39	9.31	21.08	<50	<0.5	<0.5	<0.5	<0.5	6	NA	1.53	NP
MW-4	10/27/99	30.39	9.80	20.59	<50	<0.5	<0.5	<0.5	<1	6	NA	0.98	NP

TPPH = Total purgeable petroleum hydrocarbons by modified EPA method 8015  
 BTEX = Benzene, toluene, ethylbenzene, xylenes by EPA method 8020  
 MTBE = Methyl tert -Butyl Ether  
 MSL = Mean sea level  
 TOC = Top of casing  
 ppb = Parts per billion  
 ppm = Parts per million  
 NA = Not analyzed  
 NM = Not measured  
 < = Denotes concentration not present above laboratory detection limited stated to the right

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

**ARCO Service Station 2162**  
**15135 Hesperian Boulevard, San Leandro, California**

<b>Date Measured</b>	<b>Average Flow Direction</b>	<b>Average Hydraulic Gradient</b>
02/26/96	Southwest	0.009
05/23/96	South-Southwest	0.010
08/21/96	South-Southwest	0.01
11/20/96	South-Southwest	0.011
04/01/97	South-Southwest	0.004
06/10/97	South-Southwest	0.010
09/17/97	South-Southwest	0.01
12/12/97	Southwest	0.01
03/25/98	South-Southwest	0.008
05/14/98	Southwest	0.01
07/31/98	Southwest	0.01
10/12/98	Southwest	0.01
02/11/99	Southwest	0.008
06/23/99	Southwest	0.02
08/23/99	Southwest	0.013
<b>10/27/99</b>	<b>South-Southwest</b>	<b>0.02</b>

**ATTACHMENT D**

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

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## Error Summary Log

01/10/03

EDF 1.2i All files present in deliverable.

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Laboratory:	Sequoia Analytical Laboratories, Inc., Morgan Hill, CA
Project Name:	ARCO #2162, San Leandro,
Work Order Number:	MLG0422
Global ID:	T0600100084
Lab Report Number:	MLG0422073120020857

## Report Summary

Labreport	Sampid	Labsampid	Mtrx	QC	Anmcode	Exmcode	Logdate	Extdate	Anadate	Lablotctl	Run	Sub
MLG04220731200	MW-1	MLG042201	W	CS	SW8020F	SW5030B	07/19/02	07/25/02	07/25/02	2G25002	1	
	20857											
MLG04220731200	MW-2	MLG042202	W	CS	SW8020F	SW5030B	07/19/02	07/24/02	07/24/02	2G24003	1	
	20857											
MLG04220731200	MW-3	MLG042203	W	CS	SW8020F	SW5030B	07/19/02	07/25/02	07/25/02	2G25002	1	
	20857											
MLG04220731200	MW-4	MLG042204	W	CS	SW8020F	SW5030B	07/19/02	07/24/02	07/24/02	2G24003	1	
	20857											
		MLG048005	W	NC	SW8020F	SW5030B	//	07/25/02	07/25/02	2G25002	1	
		2G24003BS1	WQ	BS1	SW8020F	SW5030B	//	07/24/02	07/24/02	2G24003	1	
		2G24003BS2	WQ	BS2	SW8020F	SW5030B	//	07/24/02	07/24/02	2G24003	1	
		2G24003BLK1	WQ	LB1	SW8020F	SW5030B	//	07/24/02	07/24/02	2G24003	1	
		2G24003MS1	W	MS1	SW8020F	SW5030B	//	07/24/02	07/24/02	2G24003	1	
		2G24003MSD1	W	SD1	SW8020F	SW5030B	//	07/24/02	07/24/02	2G24003	1	
		2G25002BS1	WQ	BS1	SW8020F	SW5030B	//	07/25/02	07/25/02	2G25002	1	
		2G25002BS2	WQ	BS2	SW8020F	SW5030B	//	07/25/02	07/25/02	2G25002	1	
		2G25002BLK1	WQ	LB1	SW8020F	SW5030B	//	07/25/02	07/25/02	2G25002	1	
		2G25002MS1	W	MS1	SW8020F	SW5030B	//	07/25/02	07/25/02	2G25002	1	
		2G25002MSD1	W	SD1	SW8020F	SW5030B	//	07/25/02	07/25/02	2G25002	1	

# EDFSAMP: Error Summary Log

01/10/03

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

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## EDFTEST: Error Summary Log

01/10/03

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Error type	Labsampid	Qccode	Anmcode	Exmcode	Anadate	Run number
There are no errors in this data file					11	0



# EDFRES: Error Summary Log

01/10/03

Error type	Labsampid	Qccode	Matrix	Anmcode	Pvccode	Anadate	Run number	Parlabel
Warning: extra parameter	2G24003MS1	MS1	W	SW8020F	PR	07/24/02	1	AAATFBZME
Warning: extra parameter	2G24003MS1	MS1	W	SW8020F	PR	07/24/02	1	GROC6C10
Warning: extra parameter	2G24003MSD1	SD1	W	SW8020F	PR	07/24/02	1	AAATFBZME
Warning: extra parameter	2G24003MSD1	SD1	W	SW8020F	PR	07/24/02	1	GROC6C10
Warning: extra parameter	2G25002MS1	MS1	W	SW8020F	PR	07/25/02	1	AAATFBZME
Warning: extra parameter	2G25002MS1	MS1	W	SW8020F	PR	07/25/02	1	GROC6C10
Warning: extra parameter	2G25002MSD1	SD1	W	SW8020F	PR	07/25/02	1	AAATFBZME
Warning: extra parameter	2G25002MSD1	SD1	W	SW8020F	PR	07/25/02	1	GROC6C10
Warning: extra parameter	MLG042201	CS	W	SW8020F	PR	07/25/02	1	AAATFBZME
Warning: extra parameter	MLG042201	CS	W	SW8020F	PR	07/25/02	1	GROC6C10
Warning: extra parameter	MLG042201	CS	W	SW8020F	PR	07/25/02	1	MTBE
Warning: extra parameter	MLG042202	CS	W	SW8020F	PR	07/24/02	1	AAATFBZME
Warning: extra parameter	MLG042202	CS	W	SW8020F	PR	07/24/02	1	GROC6C10
Warning: extra parameter	MLG042202	CS	W	SW8020F	PR	07/24/02	1	MTBE
Warning: extra parameter	MLG042203	CS	W	SW8020F	PR	07/25/02	1	AAATFBZME
Warning: extra parameter	MLG042203	CS	W	SW8020F	PR	07/25/02	1	GROC6C10
Warning: extra parameter	MLG042203	CS	W	SW8020F	PR	07/25/02	1	MTBE
Warning: extra parameter	MLG042204	CS	W	SW8020F	PR	07/24/02	1	AAATFBZME
Warning: extra parameter	MLG042204	CS	W	SW8020F	PR	07/24/02	1	GROC6C10
Warning: extra parameter	MLG042204	CS	W	SW8020F	PR	07/24/02	1	MTBE
Warning: extra parameter	MLG048005	NC	W	SW8020F	PR	07/25/02	1	AAATFBZME
Warning: extra parameter	MLG048005	NC	W	SW8020F	PR	07/25/02	1	GROC6C10
Warning: extra parameter	2G24003BLK1	LB1	WQ	SW8020F	PR	07/24/02	1	AAATFBZME
Warning: extra parameter	2G24003BLK1	LB1	WQ	SW8020F	PR	07/24/02	1	GROC6C10
Warning: extra parameter	2G24003BLK1	LB1	WQ	SW8020F	PR	07/24/02	1	MTBE

Error type	Labsampid	Qccode	Matrix	Anmcode	Pvccode	Anadate	Run number	Parlabel
Warning: extra parameter	2G24003BS1	BS1	WQ	SW8020F	PR	07/24/02	1	AAATFBZME
Warning: extra parameter	2G24003BS2	BS2	WQ	SW8020F	PR	07/24/02	1	AAATFBZME
Warning: extra parameter	2G24003BS2	BS2	WQ	SW8020F	PR	07/24/02	1	GROC6C10
Warning: extra parameter	2G25002BLK1	LB1	WQ	SW8020F	PR	07/25/02	1	AAATFBZME
Warning: extra parameter	2G25002BLK1	LB1	WQ	SW8020F	PR	07/25/02	1	GROC6C10
Warning: extra parameter	2G25002BLK1	LB1	WQ	SW8020F	PR	07/25/02	1	MTBE
Warning: extra parameter	2G25002BS1	BS1	WQ	SW8020F	PR	07/25/02	1	AAATFBZME
Warning: extra parameter	2G25002BS2	BS2	WQ	SW8020F	PR	07/25/02	1	AAATFBZME
Warning: extra parameter	2G25002BS2	BS2	WQ	SW8020F	PR	07/25/02	1	GROC6C10

# EDFQC: Error Summary Log

01/10/03

Error type	Labiocfl	Anmcode	Parlabel	Qccode	Labqid
There are no errors in this data files					

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## EDFCL: Error Summary Log

01/10/03

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

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**Facility Global ID:** T0600100084

**Facility Name:** ARCO

**Submittal Title:** EDCC Report for # 2162

**Submittal Type:** GW Monitoring Report

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<b><u>Submittal Date/Time:</u></b>	<b>1/10/2003 11:13:00 AM</b>
<b><u>Confirmation Number:</u></b>	<b>4828251481</b>

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