



Atlantic Richfield Company  
(a BP affiliated company)

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**Alameda County**

**MAR 04 2003**

**Environmental Health**

February 26, 2003

Re: Fourth Quarter 2002 Groundwater Monitoring Report  
ARCO Station #276  
10600 MacArthur Blvd.  
Oakland, CA.

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



February 27, 2003

Mr. Barney Chan  
Alameda County Health Care Suite 250  
1131 Harbor Bay Parkway, Second Floor  
Alameda, CA 94502

**Re: 2002 Annual Groundwater Monitoring Report  
ARCO Service Station # 0276  
10600 MacArthur Boulevard  
Oakland, California  
URS Project #38486084**

Dear Mr. Chan:

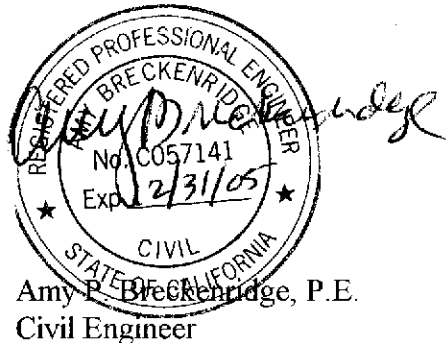
On behalf of Atlantic Richfield Company (ARCO-an affiliated company of the Group Environmental Management Company), URS Corporation (URS) is submitting the *2002 Annual Groundwater Monitoring Report* for ARCO Service Station #0276, located at 10600 MacArthur Boulevard, Oakland, California.

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.  
Civil Engineer

Enclosure: 2002 Annual Groundwater Monitoring Report

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

URS Corporation  
500 12th Street, Suite 200  
Oakland, CA 94607-4014  
Tel: 510.893.3600  
Fax: 510.874.3268

**R E P O R T**

**2002 ANNUAL GROUNDWATER  
MONITORING**

ARCO SERVICE STATION #0276  
10600 MACARTHUR BOULEVARD  
OAKLAND, CALIFORNIA

*Prepared for*  
Atlantic Richfield Company

February 27, 2003

**URS**

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

38486084

Date: February 27, 2003

Quarter: 4Q02

**ATLANTIC RICHFIELD COMPANY ANNUAL GROUNDWATER MONITORING REPORT**

Facility No.: 0276 Address: 10600 MacArthur Boulevard, Oakland, California  
Atlantic Richfield Co. Environmental Engineer: Paul Supple  
Consulting Co./Contact Person: URS Corporation / Scott Robinson  
Consultant Project No.: 38486084  
Primary Agency: Alameda County Health Care Services Agency

**WORK PERFORMED THIS QUARTER (Fourth – 2002):**

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

**WORK PROPOSED FOR NEXT QUARTER (First – 2003):**

1. No environmental work is expected at the site during the first quarter 2003
2. Prepare and submit 2002 annual groundwater monitoring report.

Current Phase of Project: GW monitoring/sampling  
Frequency of Groundwater Sampling: Wells MW-1, MW-3, MW-4, MW-5 annually  
Frequency of Groundwater Monitoring: Annually  
Is Free Product (FP) Present On-Site: No  
Current Remediation Techniques: Natural Attenuation  
Approximate Depth to Groundwater: 16.35 (MW-2) to 35.00 (MW-6) feet  
Groundwater Gradient (direction): South-southeast  
Groundwater Gradient (magnitude): 0.003 feet per foot

**DISCUSSION:**

Tetrachloroethene was detected in 4 of 4 wells sampled this quarter at concentrations ranging from 4.2 micrograms per liter ( $\mu\text{g/L}$ ) in well MW-1 to 110  $\mu\text{g/L}$  in wells MW-3 and MW-5.

**ATTACHMENTS:**

- Table 1 - Groundwater Elevation and Analytical Data
- Table 2 - Groundwater Flow Direction and Gradient
- Figure 1 - Groundwater Elevation Contour and Analytical Summary Map – November 27, 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 and EDF/Geowell Submittal Confirmation

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

ARCO Service Station #0276  
10600 MacArthur Boulevard  
Oakland, California

| Well Number | Date Sampled | Well Elevation (ft-MSL) | Depth to Water (ft, TOC) | Groundwater Elevation (ft-MSL) | Tetra-chloro-ethene (PCE) µg/L | Tri-chloro-ethene (TCE) µg/L | trans-1,2-Dichloro-ethene µg/L | cis-1,2-Dichloro-ethene µg/L | VOCs µg/L  | Dissolved Oxygen (mg/L) |
|-------------|--------------|-------------------------|--------------------------|--------------------------------|--------------------------------|------------------------------|--------------------------------|------------------------------|--|-------------------------|
| MW-1        | 12/17/00     | 55.92                   | 29.16                    | 26.76                          | 5.09                           | ND                           | ND                             | ND                           | NA   | 2.3                     |
|             | 12/28/01     |                         | 27.38                    | 28.54                          | 8.8                            | ND                           | ND                             | ND                           | NA   |                         |
|             | 11/27/02     |                         | NP                       | 29.45                          | 26.47                          | 4.2                          | NA                             | NA                           | NA   |                         |
| MW-2        | 12/17/00     | 55.10                   | 15.72                    | 39.38                          | NS                             | NS                           | NS                             | NS                           | NS   | NS                      |
|             | 12/28/01     |                         | 27.38                    | 27.72                          | NS                             | NS                           | NS                             | NS                           | NS   | NS                      |
|             | 11/27/02     |                         | 16.35                    | 38.75                          | NS                             | NS                           | NS                             | NS                           | NS   | NS                      |
| MW-3        | 12/17/00     | 56.55                   | 29.78                    | 26.77                          | 158                            | ND                           | ND                             | ND                           | NA   | 2.0                     |
|             | 12/28/01     |                         | 27.95                    | 28.60                          | 310                            | 20                           | 1.5                            | 13                           | NA   |                         |
|             | 11/27/02     |                         | NP                       | 30.10                          | 26.45                          | 110                          | NA                             | NA                           | NA   |                         |
| MW-4        | 12/17/00     | 55.98                   | 29.22                    | 26.76                          | 225                            | ND                           | ND                             | ND                           | NA   | 3.7                     |
|             | 12/28/01     |                         | 27.37                    | 28.61                          | 160                            | 1.2                          | ND                             | ND                           | NA   |                         |
|             | 11/27/02     |                         | NP                       | 29.55                          | 26.43                          | 95                           | NA                             | NA                           | NA   |                         |
| MW-5        | 12/17/00     | 55.43                   | 28.82                    | 26.61                          | 1,040                          | ND                           | ND                             | ND                           | NA   | 1.4                     |
|             | 12/28/01     |                         | 26.91                    | 28.52                          | 3,200                          | 190                          | 02-05-00                       | 140                          | 1.9 <sup>a</sup> , 3.2 <sup>b</sup> , 2.0 <sup>c</sup> |                         |
|             | 11/27/02     |                         | P                        | 29.15                          | 26.28                          | 110                          | NA                             | NA                           | NA   |                         |
| MW-6        | 12/17/00     | 61.21                   | 34.61                    | 26.60                          | NS                             | NS                           | NS                             | NS                           | NS   | NS                      |
|             | 12/28/01     |                         | 32.80                    | 28.41                          | NS                             | NS                           | NS                             | NS                           | NS   | NS                      |
|             | 11/27/02     |                         | 35.00                    | 26.21                          | NS                             | NS                           | NS                             | NS                           | NS   | NS                      |
| MW-7        | 12/17/00     | 58.22                   | 19.94                    | 38.28                          | NS                             | NS                           | NS                             | NS                           | NS   | NS                      |
|             | 12/28/01     |                         | 17.29                    | 40.93                          | NS                             | NS                           | NS                             | NS                           | NS   | NS                      |
|             | 11/27/02     |                         | 21.30                    | 36.92                          | NS                             | NS                           | NS                             | NS                           | NS   | NS                      |

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

ARCO Service Station #0276  
10600 MacArthur Boulevard  
Oakland, California

| Well Number | Date Sampled    | Well Elevation (ft-MSL) | Depth to Water (ft, TOC) | Groundwater Elevation (ft-MSL) | Tetra-chloro-ethene (PCE) µg/L | Tri-chloro-ethene (TCE) µg/L | trans-1,2-Dichloro-ethene µg/L | cis-1,2-Dichloro-ethene µg/L | VOCs µg/L | Dissolved Oxygen (mg/L) |
|-------------|-----------------|-------------------------|--------------------------|--------------------------------|--------------------------------|------------------------------|--------------------------------|------------------------------|-----------|-------------------------|
| MW-8        | 12/17/00        | 53.65                   | 27.02                    | 26.63                          | NS                             | NS                           | NS                             | NS                           | NS        | NS                      |
|             | 12/28/01        |                         | 24.99                    | 28.66                          | NS                             | NS                           | NS                             | NS                           | NS        | NS                      |
|             | <b>11/27/02</b> |                         | <b>27.45</b>             | <b>26.20</b>                   | NS                             | NS                           | NS                             | NS                           | NS        | NS                      |
| RW-1        | 12/17/00        | 56.32                   | 29.57                    | 26.75                          | NS                             | NS                           | NS                             | NS                           | NS        | NS                      |
|             | 12/28/01        |                         | 27.64                    | 28.68                          | NS                             | NS                           | NS                             | NS                           | NS        | NS                      |
|             | <b>11/27/02</b> |                         | <b>29.93</b>             | <b>26.39</b>                   | NS                             | NS                           | NS                             | NS                           | NS        | NS                      |
| WGR-3       | 12/17/00        | NR                      | 19.21                    | NR                             | NS                             | NS                           | NS                             | NS                           | NS        | NS                      |
|             | 12/28/01        | NR                      | DRY                      | DRY                            | DRY                            | DRY                          | DRY                            | DRY                          | DRY       | DRY                     |
|             | <b>11/27/02</b> | <b>NR</b>               | <b>20.60</b>             | <b>NR</b>                      | NS                             | NS                           | NS                             | NS                           | NS        | NS                      |

Note           Tetrachloroethene analyzed using EPA Method 8260B  
 TOC            = Top of Casing  
 ft-MSL        = elevation in feet, relative to mean sea level  
 µg/L          = micrograms per liter  
 ND            = none detected  
 NR            = not reported; data not available or not measurable  
 P             = Purged  
 NP            = Not purged  
 µg/L          = Micrograms per liter  
 mg/L          = Milligrams per liter  
 VOC          = Volatile Organic Compounds  
 a             = 1,1 DCE  
 b             = 1,2 DCA  
 c             = Chlorobenzene

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

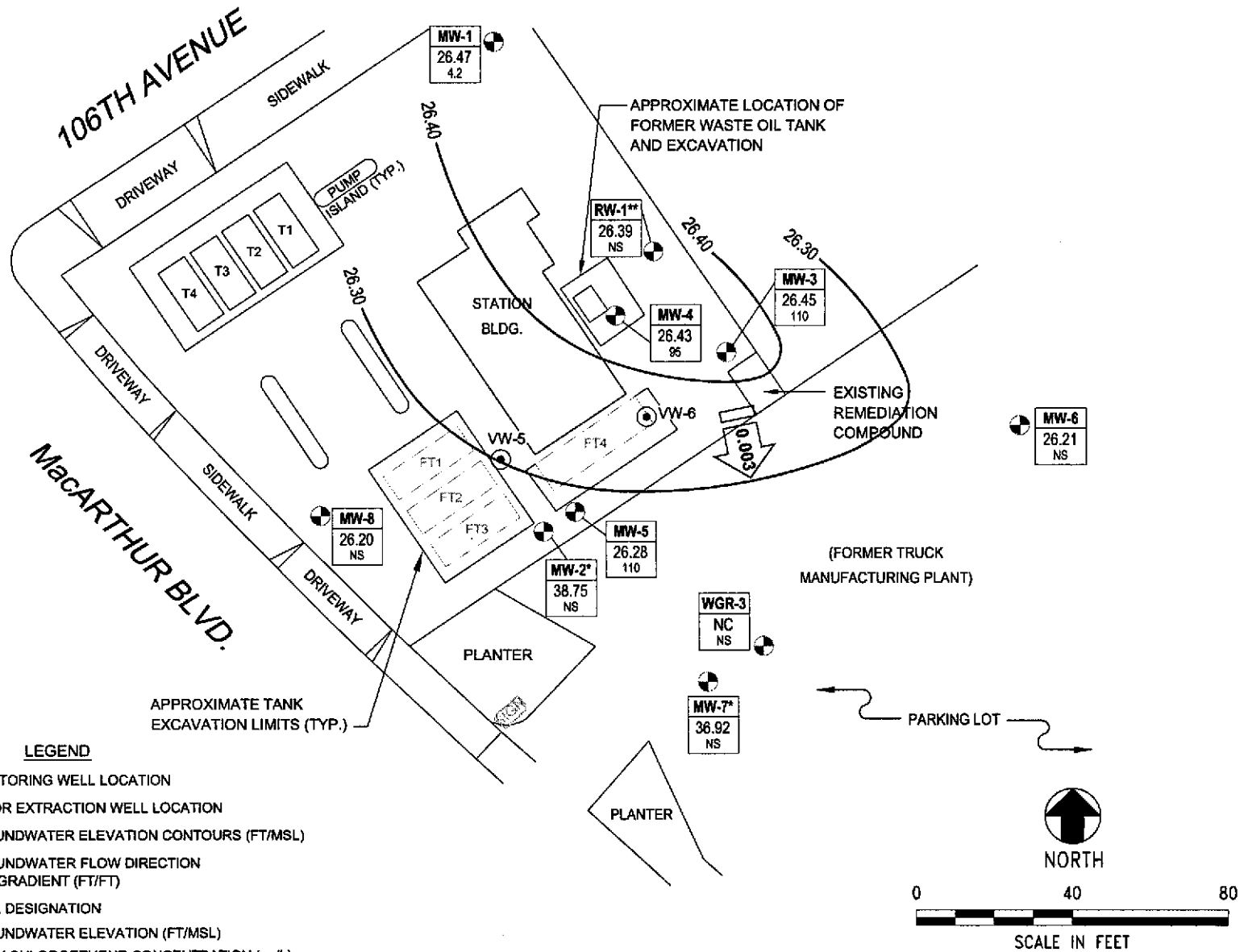
**Table 2**  
**Groundwater Flow Direction and Gradient**

ARCO Service Station #0276  
10600 MacArthur Boulevard, Oakland, California

| <b>Date Measured</b> | <b>Average Flow Direction</b> | <b>Average Hydraulic Gradient</b> |
|----------------------|-------------------------------|-----------------------------------|
| 12/17/00             | South-Southeast               | 0.003                             |
| 12/28/01             | Southeast                     | 0.002                             |
| <b>11/27/02</b>      | <b>South-Southeast</b>        | <b>0.003</b>                      |

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





|  |   |  |                    |
|--|---|--|--------------------|
|  | Project No. 38486084  | <b>GROUNDWATER ELEVATION CONTOUR<br/>AND ANALYTICAL SUMMARY MAP</b><br>Fourth Quarter 2002 (November 27, 2002) | FIGURE<br><b>1</b> |
|  | ARCO Service Station 0276<br>10600 MacArthur Boulevard<br>Oakland, California |  |                    |

**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 # D21127-MT2 Date 11-27-02 Client 276

Site 1000 MacArthur, Oakland, CA

| 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    | 2               |              |                                  |                                      |                                    | 29.45                | 38.80                      |                          |   |
| MW-2    | 4               |              |                                  |                                      |                                    | 16.35                | 27.60                      | }                        |   |
| MW-3    | 2               |              |                                  |                                      |                                    | 30.10                | 38.60                      |                          |   |
| MW-4    | 2               |              |                                  |                                      |                                    | 29.55                | 48.30                      |                          |   |
| MW-5    | 4               |              |                                  |                                      |                                    | 29.15                | 47.00                      |                          |   |
| MW-6    | 2               |              |                                  |                                      |                                    | 35.00                | 54.10                      |                          |   |
| MW-7    | 2               |              |                                  |                                      |                                    | 21.30                | 55.00                      |                          |   |
| MW-8    | 4               |              |                                  |                                      |                                    | 27.45                | 47.70                      |                          |   |
| RW-1    | 6               |              |                                  |                                      |                                    | 29.93                | 48.90                      |                          |   |
| WGR-3   | 4               |              |                                  |                                      |                                    | 20.00                | 27.50                      |                          | ↓ |
|         |                 |              |                                  |                                      |                                    |                      |                            |                          |   |
|         |                 |              |                                  |                                      |                                    |                      |                            |                          |   |
|         |                 |              |                                  |                                      |                                    |                      |                            |                          |   |
|         |                 |              |                                  |                                      |                                    |                      |                            |                          |   |
|         |                 |              |                                  |                                      |                                    |                      |                            |                          |   |
|         |                 |              |                                  |                                      |                                    |                      |                            |                          |   |

## ARCO / BP WELL MONITORING DATA SHEET

|                                 |   |
|---------------------------------|---|
| BTS #: <u>021127-MT2</u>        | Station # <u>276</u>                        |
| Sampler: <u>M. TOLL</u>         | Date: <u>11-27-02</u>                       |
| Well I.D.: <u>MW-1</u>          | Well Diameter: <u>2</u> 3 4 6 8 <u>    </u> |
| Total Well Depth: <u>38.80</u>  | Depth to Water: <u>29.45</u>                |
| Depth to Free Product:          | Thickness of Free Product (feet):           |
| Referenced to: <u>IVC</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><br>Disposable Bailer<br>Middleburg<br>Electric Submersible<br>Extraction Pump<br>Other: _____ | Sampling Method: <u>Bailer</u><br><u>Disposable Bailer</u><br>Extraction Port<br>Other: _____ |
|---|---|

Top of Screen: 19' If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

|                       |   |                   |   |                   |       |
|-----------------------|---|-------------------|---|-------------------|-------|
|                       | X |                   | = |                   | Gals. |
| 1 Case Volume (Gals.) |   | Specified Volumes |   | Calculated Volume |       |

| Time        | Temp (°F)   | pH          | Conductivity (mS or µS) | Gals. Removed | Observations |
|-------------|-------------|-------------|-------------------------|---------------|--------------|
| <u>1335</u> | <u>16.5</u> | <u>10.7</u> | <u>1682</u>             | <u>—</u>      |              |
|             |             |             |                         |               |              |
|             |             |             |                         |               |              |
|             |             |             |                         |               |              |
|             |             |             |                         |               |              |

|   |   |
|---|---|
| Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Gallons actually evacuated: <u>—</u>        |
| Sampling Time: <u>1335</u>  | Sampling Date: <u>11-27-02</u>              |
| Sample I.D.: <u>MW-1</u>  | Laboratory: Pace <u>Sequoia</u> Other _____ |
| Analyzed for: TPH-G BTEX MTBE TPH-D Other: <u>PCE (2010)</u>                          |   |

|                    |            |      |                    |            |      |
|--------------------|------------|------|--------------------|------------|------|
| D.O. (if req'd):   | Pre-purge: | mg/L | <u>Post-purge:</u> | <u>2.3</u> | mg/L |
| O.R.P. (if req'd): | Pre-purge: | mV   | Post-purge:        |            | mV   |

## ARCO / BP WELL MONITORING DATA SHEET

|                                 |   |
|---------------------------------|---|
| BTS #: <u>021127-MT2</u>        | Station # <u>276</u>                        |
| Sampler: <u>M. TOH</u>          | Date: <u>11-27-02</u>                       |
| Well I.D.: <u>MW-3</u>          | Well Diameter: <u>2</u> 3 4 6 8 <u>    </u> |
| Total Well Depth: <u>38.60</u>  | Depth to Water: <u>30.10</u>                |
| Depth to Free Product:          | Thickness of Free Product (feet):           |
| Referenced to: <u>IVC</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><br>Disposable Bailer<br>Middleburg<br>Electric Submersible<br>Extraction Pump<br>Other: _____ | Sampling Method: <u>Bailer</u><br><u>Disposable Bailer</u><br>Extraction Port<br>Other: _____ |
|---|---|

Top of Screen: 22' If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

|                       |   |                   |   |                   |       |
|-----------------------|---|-------------------|---|-------------------|-------|
|                       | X |                   | = |                   | Gals. |
| 1 Case Volume (Gals.) |   | Specified Volumes |   | Calculated Volume |       |

| Time        | Temp (°F)   | pH         | Conductivity (mS or µS) | Gals. Removed | Observations |
|-------------|-------------|------------|-------------------------|---------------|--------------|
| <u>1315</u> | <u>66.1</u> | <u>7.2</u> | <u>650</u>              | <u>—</u>      |              |
|             |             |            |                         |               |              |
|             |             |            |                         |               |              |
|             |             |            |                         |               |              |
|             |             |            |                         |               |              |

|   |  |
|---|--|
| Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Gallons actually evacuated: <u>—</u>         |
| Sampling Time: <u>1315</u>  | Sampling Date: <u>11-27-02</u>               |
| Sample I.D.: <u>MW-3</u>  | Laboratory: Pace <u>Sequicia</u> Other _____ |

|  |            |      |                             |
|--|------------|------|-----------------------------|
| Analyzed for: TPH-G BTEX MTBE TPH-D Other: <u>PCE (8010)</u> |            |      |                             |
| D.O. (if req'd):   | Pre-purge: | mg/L | Post-purge: <u>2.0</u> mg/L |
| O.R.P. (if req'd):   | Pre-purge: | mV   | Post-purge: mV              |

## ARCO / BP WELL MONITORING DATA SHEET

|                                  |  |
|----------------------------------|--|
| BTS #: <u>D21127-MT2</u>         | Station # <u>276</u>                     |
| Sampler: <u>M. Todd</u>          | Date: <u>11-27-02</u>                    |
| Well I.D.: <u>MW-4</u>           | Well Diameter: <u>2</u> 3 4 6 8 _____    |
| Total Well Depth: <u>48.30</u>   | Depth to Water: <u>29.55</u>             |
| Depth to Free Product:           | Thickness of Free Product (feet):        |
| Referenced to: <u>(VC)</u> Grade | D.O. Meter (if req'd): <u>(VSI)</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><br><u>Disposable Bailer</u><br><u>Middleburg</u><br><u>Electric Submersible</u><br><u>Extraction Pump</u><br>Other: _____ | Sampling Method: <u>Bailer</u><br><u>(Disposable Bailer)</u><br><u>Extraction Port</u><br>Other: _____ |
|---|--|

Top of Screen: 25'      If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

|                       |   |                   |   |                   |
|-----------------------|---|-------------------|---|-------------------|
| _____                 | X | _____             | = | _____ Gals.       |
| 1 Case Volume (Gals.) |   | Specified Volumes |   | Calculated Volume |

| Time | Temp (°F) | pH  | Conductivity (mS or µS) | Gals. Removed | Observations |
|------|-----------|-----|-------------------------|---------------|--------------|
| 1330 | 65.7      | 6.7 | 5325                    | -             |              |
|      |           |     |                         |               |              |
|      |           |     |                         |               |              |
|      |           |     |                         |               |              |
|      |           |     |                         |               |              |

|                                   |   |
|-----------------------------------|---|
| Did well dewater? Yes <u>(No)</u> | Gallons actually evacuated: <u>-</u>          |
| Sampling Time: <u>1330</u>        | Sampling Date: <u>11-27-02</u>                |
| Sample I.D.: <u>MW-4</u>          | Laboratory: Pace <u>(Sequoia)</u> Other _____ |

|  |                       |                             |
|--|-----------------------|-----------------------------|
| Analyzed for: TPH-G BTEX MTBE TPH-D Other: <u>PCE (8010)</u> |                       |                             |
| D.O. (if req'd):   | Pre-purge: _____ mg/L | Post-purge: <u>3.7</u> mg/L |
| O.R.P. (if req'd):   | Pre-purge: _____ mV   | Post-purge: _____ mV        |







### Chain of Custody Record

Project Name 021123-MW2  
 BP BU/GEM CO Portfolio: \_\_\_\_\_  
 BP Laboratory Contract Number: \_\_\_\_\_

Date: 11/22/02 Requested Due Date (mm/dd/yy) \_\_\_\_\_

|                              |                   |
|------------------------------|-------------------|
| On-site Time: <u>1200</u>    | Temp: <u>71°F</u> |
| Off-site Time: <u>1415</u>   | Temp: <u>73°F</u> |
| Sky Conditions: <u>Sunny</u> |                   |
| Meteorological Events:       |                   |
| Wind Speed:                  | Direction:        |

|   |  |   |
|---|--|---|
| Client To:  | BP/GEM Facility No.:                                       | Consultant/Contractor: URS                                      |
| Client Name: SEQUOIA                                    | BP/GEM Facility Address: 10600 MacArthur Blvd, OAKLAND, CA | Address: 500 12th St., Ste. 200                                 |
| Client Address: 885 Jarvis Dr.<br>Morgan Hill, CA 95037 | Site ID No. ARCO 276                                       | Oakland, CA 94609-4014  |
|   | Site Lat/Long:   | e-mail EDD: syed_rehan@urscorp.com                              |
|   | California Global ID #: T0600100082                        | Consultant/Contractor Project No.: J5-00000276.01 00427         |
| Client PM: Latonya Pelt                                 | BP/GEM PM Contact: PAUL SUPPLE                             | Consultant Tele/Fax: 510-874-3280/510-874-3268                  |
| Client Tel/Fax: 408-776-9600 / 408-782-6308             | Address: P.O. Box 6549                                     | Consultant/Contractor PM: Scott Robinson                        |
| Client Report Type & QC Level: Send EDF Reports         | Moraga, CA 94570   | Invoice to: Consultant/Contractor of <u>BP/GEM</u> (Circle one) |
| Client GEM Account No.:                                 | Tele/Fax: 925-299-8891/925-299-8872                        | BP/GEM Work Release No: INTRIM -50353                           |

| Sample 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 (8260) | MTBE, TAME, ETBE (8260) | DPE, TBA (8260) | 1,2-DCA & EDB (8260) |                                    |
| 1          | MW-1               | 1335 | X          |              |           |     | 3              |                   |               |                                |                  |     |                        |              |             |             |                         | X               |                      |                                    |
| 2          | MW-3               | 1315 | X          |              |           |     | 3              |                   |               |                                |                  |     |                        |              |             |             |                         | X               |                      |                                    |
| 3          | MW-4               | 1330 | X          |              |           |     | 3              |                   |               |                                |                  |     |                        |              |             |             |                         | X               |                      |                                    |
| 4          | MW-5               | 1405 | X          |              |           |     | 3              |                   |               |                                |                  |     |                        |              |             |             |                         | X               |                      |                                    |
| 5          |                    |      |            |              |           |     |                |                   |               |                                |                  |     |                        |              |             |             |                         |                 |                      |                                    |
| 6          |                    |      |            |              |           |     |                |                   |               |                                |                  |     |                        |              |             |             |                         |                 |                      |                                    |
| 7          |                    |      |            |              |           |     |                |                   |               |                                |                  |     |                        |              |             |             |                         |                 |                      |                                    |
| 8          |                    |      |            |              |           |     |                |                   |               |                                |                  |     |                        |              |             |             |                         |                 |                      |                                    |
| 9          |                    |      |            |              |           |     |                |                   |               |                                |                  |     |                        |              |             |             |                         |                 |                      |                                    |
| 10         |                    |      |            |              |           |     |                |                   |               |                                |                  |     |                        |              |             |             |                         |                 |                      |                                    |

|   |  |                      |                   |   |                      |                   |
|---|--|----------------------|-------------------|---|----------------------|-------------------|
| Relinquished By: <u>Michael Toll</u>              | Relinquished By / Affiliation: <u>roll / BTS</u> | Date: <u>12/3/02</u> | Time: <u>1322</u> | Accepted By / Affiliation: <u>[Signature]</u> | Date: <u>12/3/02</u> | Time: <u>1322</u> |
| Relinquished Company: <u>Blaine Tech Services</u> |  |                      |                   |   |                      |                   |
| Relinquished Date:                                |  |                      |                   |   |                      |                   |
| Relinquished Method:                              |  |                      |                   |   |                      |                   |
| Relinquished Tracking No:                         |  |                      |                   |   |                      |                   |

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

Study Seals In Place Yes No Temperature Blank Yes No Cooler Temperature on Receipt 0 T/C Trip Blank Yes No



**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:

276

Station #

10600 MacArthur Ave., Oakland

Station Address

Total Gallons Collected From Groundwater Monitoring Wells:

35

added equip. rinse water 2

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

TOTAL GALS. RECOVERED 37

loaded onto BTS vehicle # 50

BTS event # 02/27-AT, 2

time 1415 date 11/27/02

signature [Signature]

\*\*\*\*\*  
REC'D AT \_\_\_\_\_ time \_\_\_\_\_ date \_\_\_\_\_

BTS-SJ

11/27/02

unloaded by signature [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 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.



19 December, 2002

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

RE: ARCO #276, Oakland, CA  
Sequoia Work Order: MLL0091

Enclosed are the results of analyses for samples received by the laboratory on 12/03/02 14:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Latonya Pelt  
Project Manager  
CA ELAP Certificate #1210



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

Project: ARCO #276, Oakland, CA  
Project Number: ARCO #276, Oakland, CA  
Project Manager: Scott Robinson

MLL0091  
**Reported:**  
12/19/02 09:21

**ANALYTICAL REPORT FOR SAMPLES**

| Sample ID | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|-----------|---------------|--------|----------------|----------------|
| MW-1      | MLL0091-01    | Water  | 11/27/02 13:35 | 12/03/02 14:50 |
| MW-3      | MLL0091-02    | Water  | 11/27/02 13:15 | 12/03/02 14:50 |
| MW-4      | MLL0091-03    | Water  | 11/27/02 13:30 | 12/03/02 14:50 |
| MW-5      | MLL0091-04    | Water  | 11/27/02 14:05 | 12/03/02 14:50 |

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

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

 Project: ARCO #276, Oakland, CA  
 Project Number: ARCO #276, Oakland, CA  
 Project Manager: Scott Robinson

 MLL0091  
**Reported:**  
 12/19/02 09:21

**EPA 8010 list Volatile Organic Compounds by EPA 8260B**  
**Sequoia Analytical - Morgan Hill**

| Analyte   | Result     | Reporting Limit | Units  | Dilution | Batch   | Prepared | Analyzed | Method    | Notes        |
|---|------------|-----------------|--------|----------|---------|----------|----------|-----------|--------------|
| <b>MW-1 (MLL0091-01) Water</b> Sampled: 11/27/02 13:35 Received: 12/03/02 14:50 |            |                 |        |          |         |          |          |           | <b>A-04</b>  |
| <b>Tetrachloroethene</b>  | <b>4.2</b> | <b>0.50</b>     | ug/l   | 1        | 2L13008 | 12/11/02 | 12/11/02 | EPA 8260B |              |
| Surrogate: Dibromofluoromethane   |            | 97.4 %          | 73-130 |          | "       | "        | "        | "         |              |
| Surrogate: 1,2-Dichloroethane-d4  |            | 92.4 %          | 78-129 |          | "       | "        | "        | "         |              |
| Surrogate: Toluene-d8   |            | 108 %           | 81-116 |          | "       | "        | "        | "         |              |
| Surrogate: 4-Bromofluorobenzene   |            | 111 %           | 71-117 |          | "       | "        | "        | "         |              |
| <b>MW-3 (MLL0091-02) Water</b> Sampled: 11/27/02 13:15 Received: 12/03/02 14:50 |            |                 |        |          |         |          |          |           | <b>HT-04</b> |
| <b>Tetrachloroethene</b>  | <b>110</b> | <b>5.0</b>      | ug/l   | 10       | 2L13008 | 12/11/02 | 12/13/02 | EPA 8260B | A-01         |
| Surrogate: Dibromofluoromethane   |            | 100 %           | 73-130 |          | "       | "        | "        | "         |              |
| Surrogate: 1,2-Dichloroethane-d4  |            | 98.6 %          | 78-129 |          | "       | "        | "        | "         |              |
| Surrogate: Toluene-d8   |            | 99.6 %          | 81-116 |          | "       | "        | "        | "         |              |
| Surrogate: 4-Bromofluorobenzene   |            | 95.0 %          | 71-117 |          | "       | "        | "        | "         |              |
| <b>MW-4 (MLL0091-03) Water</b> Sampled: 11/27/02 13:30 Received: 12/03/02 14:50 |            |                 |        |          |         |          |          |           | <b>HT-04</b> |
| <b>Tetrachloroethene</b>  | <b>95</b>  | <b>5.0</b>      | ug/l   | 10       | 2L13008 | 12/11/02 | 12/13/02 | EPA 8260B | A-02         |
| Surrogate: Dibromofluoromethane   |            | 101 %           | 73-130 |          | "       | "        | "        | "         |              |
| Surrogate: 1,2-Dichloroethane-d4  |            | 99.8 %          | 78-129 |          | "       | "        | "        | "         |              |
| Surrogate: Toluene-d8   |            | 102 %           | 81-116 |          | "       | "        | "        | "         |              |
| Surrogate: 4-Bromofluorobenzene   |            | 96.8 %          | 71-117 |          | "       | "        | "        | "         |              |
| <b>MW-5 (MLL0091-04) Water</b> Sampled: 11/27/02 14:05 Received: 12/03/02 14:50 |            |                 |        |          |         |          |          |           | <b>HT-04</b> |
| <b>Tetrachloroethene</b>  | <b>110</b> | <b>5.0</b>      | ug/l   | 10       | 2L13008 | 12/11/02 | 12/13/02 | EPA 8260B | A-03         |
| Surrogate: Dibromofluoromethane   |            | 97.8 %          | 73-130 |          | "       | "        | "        | "         |              |
| Surrogate: 1,2-Dichloroethane-d4  |            | 97.6 %          | 78-129 |          | "       | "        | "        | "         |              |
| Surrogate: Toluene-d8   |            | 99.0 %          | 81-116 |          | "       | "        | "        | "         |              |
| Surrogate: 4-Bromofluorobenzene   |            | 92.2 %          | 71-117 |          | "       | "        | "        | "         |              |



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

 Project: ARCO #276, Oakland, CA  
 Project Number: ARCO #276, Oakland, CA  
 Project Manager: Scott Robinson

 MLL0091  
**Reported:**  
 12/19/02 09:21

**EPA 8010 list Volatile Organic Compounds by EPA 8260B - Quality Control**  
**Sequoia Analytical - Morgan Hill**

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

**Batch 2L13008 - EPA 5030B P/T**
**Blank (2L13008-BLK1)**

Prepared: 12/11/02 Analyzed: 12/12/02

|   |      |      |      |      |  |      |        |  |  |  |
|---|------|------|------|------|--|------|--------|--|--|--|
| Chlorobenzene                           | ND   | 0.50 | ug/l |      |  |      |        |  |  |  |
| 1,1-Dichloroethene                      | ND   | 0.50 | "    |      |  |      |        |  |  |  |
| Tetrachloroethene                       | ND   | 0.50 | "    |      |  |      |        |  |  |  |
| Trichloroethene                         | ND   | 0.50 | "    |      |  |      |        |  |  |  |
| <i>Surrogate: Dibromofluoromethane</i>  | 5.15 |      | "    | 5.00 |  | 103  | 73-130 |  |  |  |
| <i>Surrogate: 1,2-Dichloroethane-d4</i> | 4.91 |      | "    | 5.00 |  | 98.2 | 78-129 |  |  |  |
| <i>Surrogate: Toluene-d8</i>            | 5.09 |      | "    | 5.00 |  | 102  | 81-116 |  |  |  |
| <i>Surrogate: 4-Bromofluorobenzene</i>  | 4.71 |      | "    | 5.00 |  | 94.2 | 71-117 |  |  |  |

**Blank (2L13008-BLK2)**

Prepared &amp; Analyzed: 12/11/02

**A-04**

|   |      |      |      |      |  |      |        |  |  |  |
|---|------|------|------|------|--|------|--------|--|--|--|
| Chlorobenzene                           | ND   | 0.50 | ug/l |      |  |      |        |  |  |  |
| 1,1-Dichloroethene                      | ND   | 0.50 | "    |      |  |      |        |  |  |  |
| Tetrachloroethene                       | ND   | 0.50 | "    |      |  |      |        |  |  |  |
| Trichloroethene                         | ND   | 0.50 | "    |      |  |      |        |  |  |  |
| <i>Surrogate: Dibromofluoromethane</i>  | 4.77 |      | "    | 5.00 |  | 95.4 | 73-130 |  |  |  |
| <i>Surrogate: 1,2-Dichloroethane-d4</i> | 4.59 |      | "    | 5.00 |  | 91.8 | 78-129 |  |  |  |
| <i>Surrogate: Toluene-d8</i>            | 5.38 |      | "    | 5.00 |  | 108  | 81-116 |  |  |  |
| <i>Surrogate: 4-Bromofluorobenzene</i>  | 5.70 |      | "    | 5.00 |  | 114  | 71-117 |  |  |  |

**Laboratory Control Sample (2L13008-BS1)**

Prepared: 12/11/02 Analyzed: 12/12/02

|   |      |      |      |      |  |      |        |  |  |  |
|---|------|------|------|------|--|------|--------|--|--|--|
| Chlorobenzene                           | 10.1 | 0.50 | ug/l | 10.0 |  | 101  | 80-127 |  |  |  |
| 1,1-Dichloroethene                      | 9.75 | 0.50 | "    | 10.0 |  | 97.5 | 75-124 |  |  |  |
| Trichloroethene                         | 10.2 | 0.50 | "    | 10.0 |  | 102  | 75-133 |  |  |  |
| <i>Surrogate: Dibromofluoromethane</i>  | 5.09 |      | "    | 5.00 |  | 102  | 73-130 |  |  |  |
| <i>Surrogate: 1,2-Dichloroethane-d4</i> | 4.98 |      | "    | 5.00 |  | 99.6 | 78-129 |  |  |  |
| <i>Surrogate: Toluene-d8</i>            | 5.02 |      | "    | 5.00 |  | 100  | 81-116 |  |  |  |
| <i>Surrogate: 4-Bromofluorobenzene</i>  | 5.08 |      | "    | 5.00 |  | 102  | 71-117 |  |  |  |

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

 Project: ARCO #276, Oakland, CA  
 Project Number: ARCO #276, Oakland, CA  
 Project Manager: Scott Robinson

 MLL0091  
 Reported:  
 12/19/02 09:21

**EPA 8010 list Volatile Organic Compounds by EPA 8260B - Quality Control  
Sequoia Analytical - Morgan Hill**

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

**Batch 2L13008 - EPA 5030B P/T**

| <b>Laboratory Control Sample (2L13008-BS2)</b> |             |      |      | Prepared & Analyzed: 12/11/02 |  |             |               | <b>A-04</b> |  |              |
|--|-------------|------|------|-------------------------------|--|-------------|---------------|-------------|--|--------------|
| Chlorobenzene                                  | 10.3        | 0.50 | ug/l | 10.0                          |  | 103         | 80-127        |             |  |              |
| 1,1-Dichloroethene                             | 9.65        | 0.50 | "    | 10.0                          |  | 96.5        | 75-124        |             |  |              |
| Trichloroethene                                | 12.5        | 0.50 | "    | 10.0                          |  | 125         | 75-133        |             |  |              |
| <i>Surrogate: Dibromofluoromethane</i>         | <i>4.91</i> |      | "    | <i>5.00</i>                   |  | <i>98.2</i> | <i>73-130</i> |             |  |              |
| <i>Surrogate: 1,2-Dichloroethane-d4</i>        | <i>4.61</i> |      | "    | <i>5.00</i>                   |  | <i>92.2</i> | <i>78-129</i> |             |  |              |
| <i>Surrogate: Toluene-d8</i>                   | <i>5.33</i> |      | "    | <i>5.00</i>                   |  | <i>107</i>  | <i>81-116</i> |             |  |              |
| <i>Surrogate: 4-Bromofluorobenzene</i>         | <i>5.88</i> |      | "    | <i>5.00</i>                   |  | <i>118</i>  | <i>71-117</i> |             |  | <i>S-LIM</i> |

| <b>Laboratory Control Sample Dup (2L13008-BSD1)</b> |             |      |      | Prepared: 12/11/02 Analyzed: 12/12/02 |  |             |               |      |    |  |
|---|-------------|------|------|---------------------------------------|--|-------------|---------------|------|----|--|
| Chlorobenzene                                       | 10.5        | 0.50 | ug/l | 10.0                                  |  | 105         | 80-127        | 3.88 | 10 |  |
| 1,1-Dichloroethene                                  | 10.4        | 0.50 | "    | 10.0                                  |  | 104         | 75-124        | 6.45 | 16 |  |
| Trichloroethene                                     | 10.6        | 0.50 | "    | 10.0                                  |  | 106         | 75-133        | 3.85 | 16 |  |
| <i>Surrogate: Dibromofluoromethane</i>              | <i>5.09</i> |      | "    | <i>5.00</i>                           |  | <i>102</i>  | <i>73-130</i> |      |    |  |
| <i>Surrogate: 1,2-Dichloroethane-d4</i>             | <i>4.99</i> |      | "    | <i>5.00</i>                           |  | <i>99.8</i> | <i>78-129</i> |      |    |  |
| <i>Surrogate: Toluene-d8</i>                        | <i>4.95</i> |      | "    | <i>5.00</i>                           |  | <i>99.0</i> | <i>81-116</i> |      |    |  |
| <i>Surrogate: 4-Bromofluorobenzene</i>              | <i>5.13</i> |      | "    | <i>5.00</i>                           |  | <i>103</i>  | <i>71-117</i> |      |    |  |

| <b>Laboratory Control Sample Dup (2L13008-BSD2)</b> |             |      |      | Prepared & Analyzed: 12/11/02 |  |             |               | <b>A-04</b> |    |  |
|---|-------------|------|------|-------------------------------|--|-------------|---------------|-------------|----|--|
| Chlorobenzene                                       | 10.7        | 0.50 | ug/l | 10.0                          |  | 107         | 80-127        | 3.81        | 10 |  |
| 1,1-Dichloroethene                                  | 9.67        | 0.50 | "    | 10.0                          |  | 96.7        | 75-124        | 0.207       | 16 |  |
| Trichloroethene                                     | 12.4        | 0.50 | "    | 10.0                          |  | 124         | 75-133        | 0.803       | 16 |  |
| <i>Surrogate: Dibromofluoromethane</i>              | <i>4.80</i> |      | "    | <i>5.00</i>                   |  | <i>96.0</i> | <i>73-130</i> |             |    |  |
| <i>Surrogate: 1,2-Dichloroethane-d4</i>             | <i>4.58</i> |      | "    | <i>5.00</i>                   |  | <i>91.6</i> | <i>78-129</i> |             |    |  |
| <i>Surrogate: Toluene-d8</i>                        | <i>5.24</i> |      | "    | <i>5.00</i>                   |  | <i>105</i>  | <i>81-116</i> |             |    |  |
| <i>Surrogate: 4-Bromofluorobenzene</i>              | <i>5.81</i> |      | "    | <i>5.00</i>                   |  | <i>116</i>  | <i>71-117</i> |             |    |  |

Sequoia Analytical - Morgan Hill

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

URS Corporation  
500 12th Street, Suite 100  
Oakland CA, 94607Project: ARCO #276, Oakland, CA  
Project Number: ARCO #276, Oakland, CA  
Project Manager: Scott RobinsonMLL0091  
**Reported:**  
12/19/02 09:21

### Notes and Definitions

- A-01 The initial result for this analyte which was analyzed within hold time but exceeded the calibration range was 110 ppb.
- A-02 The original result for this analyte which was analyzed within hold time but exceeded the calibration range was 130 ppb.
- A-03 The original result for this analyte which was analyzed within hold time but exceeded the calibration range was 130 ppb.
- A-04 Vinyl chloride exceeded the CCC criteria for the continuing calibration. All target compounds met the individual compound continuing calibration criteria.
- HT-04 This sample was analyzed beyond the EPA recommended holding time. The results may still be useful for their intended purpose.
- S-LIM The surrogate recovery was outside control limits. The result may still be useful for its 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

MLL009

Project Name 02127-N52  
 BP BU/GEM CO Portfolio: \_\_\_\_\_  
 BP Laboratory Contract Number: \_\_\_\_\_  
 Date: 1/22/02 Requested Due Date (mm/dd/yy) \_\_\_\_\_

On-site Time: 1202 Temp: 71°F  
 Off-site Time: 1415 Temp: 73°F  
 Sky Conditions: Sunny  
 Meteorological Events: \_\_\_\_\_  
 Wind Speed: \_\_\_\_\_ Direction: \_\_\_\_\_

Send To: BP/GEM Facility No.: \_\_\_\_\_ Consultant/Contractor: URS  
 Lab Name: SEQUOIA BP/GEM Facility Address: 10600 MacArthur Blvd. OAKLAND, CA Address: 500 12th St. Ste. 200  
 Lab Address: 885 Jarvis Dr. Morgan Hill, CA 95037 Site ID No. ARCO 278 Oakland, CA 94608-4014  
 Site Lat/Long: \_\_\_\_\_ e-mail EDD: syed.rehan@urscorp.com  
 California Global ID #: T0600100082 Consultant/Contractor Project No.: JS-00000276.01 00427  
 Lab PM: Latanya Pelt BP/GEM PM Contact: PAUL SUPPLE Consultant Tele/Fax: 510-874-3280/510-874-3288  
 Tele/Fax: 408-776-9800 / 408-782-6308 Address: P.O. Box 6548 Moraga, CA 94570 Consultant/Contractor PM: Scott Robinson  
 Report Type & QC Level: Send EDF Reports Invoice to: Consultant/Contractor of BP/GEM (Circle one)  
 BP/GEM Account No.: \_\_\_\_\_ Tele/Fax: 925-299-8891/925-299-8872 BP/GEM Work Release No: INTRIM -50353

| 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) | MTBH (8021) | MTBB (8260) | MTBB, TAME, GTBB (8260) |                                    |
| 1        | MW-1               | 1335 | X          |              |           |     | 3              |                   |               |                                |                  |                    |                        |              |             |             | X                       |                                    |
| 2        | MW-3               | 1315 | X          |              |           |     | 3              |                   |               |                                |                  |                    |                        |              |             |             | X                       |                                    |
| 3        | MW-4               | 1330 | X          |              |           |     | 3              |                   |               |                                |                  |                    |                        |              |             |             | X                       |                                    |
| 4        | MW-5               | 1405 | X          |              |           |     | 3              |                   |               |                                |                  |                    |                        |              |             |             | X                       |                                    |
| 5        |                    |      |            |              |           |     |                |                   |               |                                |                  |                    |                        |              |             |             |                         |                                    |
| 6        |                    |      |            |              |           |     |                |                   |               |                                |                  |                    |                        |              |             |             |                         |                                    |
| 7        |                    |      |            |              |           |     |                |                   |               |                                |                  |                    |                        |              |             |             |                         |                                    |
| 8        |                    |      |            |              |           |     |                |                   |               |                                |                  |                    |                        |              |             |             |                         |                                    |
| 9        |                    |      |            |              |           |     |                |                   |               |                                |                  |                    |                        |              |             |             |                         |                                    |
| 10       |                    |      |            |              |           |     |                |                   |               |                                |                  |                    |                        |              |             |             |                         |                                    |

Sampler's Name: Michael Dill Relinquished By / Affiliation: [Signature] Date: 12/3/02 Time: 1522 Accepted By / Affiliation: [Signature] Date: 12/3/02 Time: 1322  
 Sampler's Company: Blaine Tech Services Shipment Date: 12/3/02 Shipment Method: 1450  
 Shipment Tracking No: \_\_\_\_\_

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 4 °F/C Trip Blank Yes No

**SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG**

CLIENT NAME: URS  
 REC. BY (PRINT) TL  
 WORKORDER: mL0091

DATE Received at Lab: 12/3/02  
 TIME Received at Lab: 1450  
 LOG IN DATE: 12-4-02

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

| CIRCLE THE APPROPRIATE RESPONSE   |  | LAB SAMPLE # | # | CLIENT ID | CONTAINER DESCRIPTION | SAMPLE MATRIX | DATE SAMPLED | REMARKS: CONDITION (ETC.) |
|---|--|--------------|---|-----------|-----------------------|---------------|--------------|---------------------------|
| 1. Custody Seal(s)  | Present / <b>Absent</b><br>Intact / Broken*  | 1            |   | MW-1      | (3) VOID HEL          | (L)           | 11/27/02     |                           |
| 2. Chain-of-Custody   | <b>Present</b> / Absent*                     | 3            |   | MW-3      | ↓                     | ↓             | ↓            |                           |
| 3. Traffic Reports or Packing List  | Present / <b>Absent</b>                      | 4            |   | MW-4      | ↓                     | ↓             | ↓            |                           |
| 4. Airbill:   | Airbill / Sticker<br>Present / <b>Absent</b> |              |   |           |                       |               |              |                           |
| 5. Airbill #:   |  |              |   |           |                       |               |              |                           |
| 6. Sample Labels:   | <b>Present</b> / Absent                      |              |   |           |                       |               |              |                           |
| 7. Sample IDs:  | Listed / Not Listed<br>on Chain-of-Custody   |              |   |           |                       |               |              |                           |
| 8. Sample Condition:  | <b>Intact</b> / Broken* / Leaking*           |              |   |           |                       |               |              |                           |
| 9. Does information on custody reports, traffic reports and sample labels agree?        | Yes / <b>No</b> *                            |              |   |           |                       |               |              |                           |
| 10. Sample received within hold time:   | Yes / <b>No</b> *                            |              |   |           |                       |               |              |                           |
| 11. Proper Preservatives used:  | Yes / <b>No</b> *                            |              |   |           |                       |               |              |                           |
| 12. Temp Rec. at Lab:<br>(Acceptance range for samples requiring thermal pres: 4±1-2°C) | <u>4.9</u><br>Yes / <b>No</b> **             |              |   |           |                       |               |              |                           |
| **Exception (if any):   |  |              |   |           |                       |               |              |                           |

**\*If Circled, contact Project Manager and attach record of resolution.**

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

**Table 1**  
**Historical Groundwater Elevation and Analytical Data**  
**Halogenated Volatile Organic Compounds (EPA method 8010 or 8240)**  
**1995-Present\*\***

**ARCO Service Station 276**  
**10600 MacArthur Boulevard, Oakland, California**

| Well   | Date     | TOC<br>Elevation | Depth to<br>Water | FP<br>Thickness | Groundwater<br>Elevation | Date     | Tetra-<br>chloro-<br>ethene<br>(PCE)                    | Tetra-<br>chloro-<br>ethene<br>(TCE) | trans-<br>1,2-<br>Dichloro-<br>ethene | cis-1,2-<br>Dichloro-<br>ethene | Freon<br>12 | Dissolved<br>Oxygen | Purged/<br>Not Purged |  |
|--------|----------|------------------|-------------------|-----------------|--------------------------|----------|---|--------------------------------------|---------------------------------------|---------------------------------|-------------|---------------------|-----------------------|--|
| Number | Gauged   | (ft-MSL)         | (feet)            | (ft-MSL)        | (ft-MSL)                 | Sampled  | µg/L  | µg/L                                 | µg/L                                  | µg/L                            | µg/L        | (mg/l)              | (P/NP)                |  |
| MW-1   | 03-10-95 | 55.92            | 26.26             | ND              | 29.66                    | 03-10-95 | 170   | <1                                   | --                                    | <1                              | --          | --                  |                       |  |
| MW-1   | 06-05-95 | 55.92            | 25.71             | ND              | 30.21                    | 06-05-95 | 210   | <5                                   | --                                    | <5                              | --          | --                  |                       |  |
| MW-1   | 08-29-95 | 55.92            | 28.44             | ND              | 27.48                    | 08-29-95 | 130   | <1                                   | --                                    | <1                              | --          | --                  |                       |  |
| MW-1   | 11-16-95 | 55.92            | 30.85             | ND              | 25.07                    | 11-16-95 | 45  | <1                                   | --                                    | <1                              | <1          | --                  |                       |  |
| MW-1   | 02-28-96 | 55.92            | 24.99             | ND              | 30.93                    | 02-28-96 | 97  | <1                                   | <1                                    | <1                              | --          | --                  |                       |  |
| MW-1   | 05-28-96 | 55.92            | 24.92             | ND              | 31.00                    | 05-28-96 | 160   | <5                                   | <5                                    | <5                              | --          | --                  |                       |  |
| MW-1   | 08-19-96 | 55.92            | 28.04             | ND              | 27.88                    | 08-19-96 | 77  | <1                                   | <1                                    | <1                              | --          | --                  |                       |  |
| MW-1   | 11-21-96 | 55.92            | 30.19             | ND              | 25.73                    | 11-21-96 | 30  | <1                                   | <1                                    | <1                              | --          | --                  |                       |  |
| MW-1   | 03-26-97 | 55.92            | 24.90             | ND              | 31.02                    | 03-26-97 | 66  | <1                                   | <1                                    | <1                              | --          | --                  |                       |  |
| MW-1   | 05-20-97 | 55.92            | 26.99             | ND              | 28.93                    | 05-20-97 | 36  | <0.5                                 | <0.5                                  | <0.5                            | --          | --                  |                       |  |
| MW-1   | 08-18-97 | 55.92            | 29.98             | ND              | 25.94                    | 08-18-97 | 11  | <0.5                                 | <0.5                                  | <0.5                            | --          | --                  |                       |  |
| MW-1   | 11-17-97 | 55.92            | 31.72             | ND              | 24.20                    | 11-17-97 | Not analyzed for Halogenated Volatile Organic Compounds |                                      |                                       |                                 |             |                     | --                    |  |
| MW-1   | 12-02-99 | 55.92            | Not surveyed      |                 |                          | 12-02-99 | Not surveyed: well was inaccessible                     |                                      |                                       |                                 |             |                     |                       |  |
| MW-2   | 03-10-95 | 55.10            | 13.98             | ND              | 41.12                    | 03-11-95 | <1  | <1                                   | --                                    | <1                              | --          | --                  |                       |  |
| MW-2   | 06-05-95 | 55.10            | 15.65             | ND              | 39.45                    | 06-05-95 | <1  | <1                                   | --                                    | <1                              | --          | --                  |                       |  |
| MW-2   | 08-29-95 | 55.10            | 17.14             | ND              | 37.96                    | 08-29-95 | <5  | <5                                   | --                                    | <5                              | --          | --                  |                       |  |
| MW-2   | 11-16-95 | 55.10            | Not surveyed      |                 |                          | 11-16-95 | Not surveyed: well was inaccessible                     |                                      |                                       |                                 |             |                     |                       |  |
| MW-2   | 02-28-96 | 55.10            | 12.46             | ND              | 42.64                    | 02-28-96 | <1  | <1                                   | <1                                    | <1                              | --          | --                  |                       |  |
| MW-2   | 05-28-96 | 55.10            | 15.23             | ND              | 39.87                    | 05-28-96 | <1  | <1                                   | <1                                    | <1                              | --          | --                  |                       |  |
| MW-2   | 08-19-96 | 55.10            | 16.84             | ND              | 38.26                    | 08-21-96 | <1  | <1                                   | <1                                    | <1                              | --          | --                  |                       |  |
| MW-2   | 11-21-96 | 55.10            | 15.44             | ND              | 39.66                    | 11-21-96 | <1  | <1                                   | <1                                    | <1                              | --          | --                  |                       |  |
| MW-2   | 03-26-97 | 55.10            | 15.73             | ND              | 39.37                    | 03-26-97 | <10^  | <10^                                 | <10^                                  | <10^                            | --          | --                  |                       |  |
| MW-2   | 05-20-97 | 55.10            | 16.07             | ND              | 39.03                    | 05-20-97 | <1^   | <1^                                  | <1^                                   | <1^                             | --          | --                  |                       |  |
| MW-2   | 08-18-97 | 55.10            | 17.28             | ND              | 37.82                    | 08-18-97 | <5^   | <5^                                  | <5^                                   | <5^                             | --          | --                  |                       |  |
| MW-2   | 11-17-97 | 55.10            | 16.75             | ND              | 38.35                    | 11-17-97 | Not analyzed for Halogenated Volatile Organic Compounds |                                      |                                       |                                 |             |                     |                       |  |
| MW-2   | 12-02-99 | 55.10            | Not surveyed      |                 |                          | 12-02-99 | Not sampled: not on sampling schedule                   |                                      |                                       |                                 |             |                     |                       |  |

OAKS:\ARCO\0276\QTRLY\0276q499.xls\uh:1  
 Recreated from electronic data provided by Pinnacle

**Table 1**  
**Historical Groundwater Elevation and Analytical Data**  
**Halogenated Volatile Organic Compounds (EPA method 8010 or 8240)**  
**1995-Present\*\***

**ARCO Service Station 276**  
**10600 MacArthur Boulevard, Oakland, California**

| Well   | Date     | TOC<br>Elevation | Depth to<br>Water | FP<br>Thickness | Groundwater<br>Elevation | Date     | Tetra-<br>chloro-<br>ethene<br>(PCE)                    | Tetra-<br>chloro-<br>ethene<br>(TCE) | trans-<br>1,2-<br>Dichloro-<br>ethene | cis-1,2-<br>Dichloro-<br>ethene | Freon<br>12 | Dissolved<br>Oxygen | Purged/<br>Not Purged |
|--------|----------|------------------|-------------------|-----------------|--------------------------|----------|---|--------------------------------------|---------------------------------------|---------------------------------|-------------|---------------------|-----------------------|
| Number | Gauged   | (ft-MSL)         | (feet)            | (ft-MSL)        | (ft-MSL)                 | Sampled  | µg/L  | µg/L                                 | µg/L                                  | µg/L                            | µg/L        | (mg/l)              | (P/NP)                |
| MW-3   | 03-10-95 | 56.55            | 26.74             | ND              | 29.81                    | 03-11-95 | 1700  | <10                                  | --                                    | <10                             | --          |                     |                       |
| MW-3   | 06-05-95 | 56.55            | 26.34             | ND              | 30.21                    | 06-05-95 | 2500  | <20                                  | --                                    | <20                             | --          |                     |                       |
| MW-3   | 08-29-95 | 56.55            | 29.15             | ND              | 27.40                    | 08-29-95 | 1600  | <20                                  | --                                    | <20                             | --          |                     |                       |
| MW-3   | 11-16-95 | 56.55            | 31.50             | ND              | 25.05                    | 11-16-95 | 1100  | <20                                  | --                                    | <20                             | <20         |                     |                       |
| MW-3   | 02-28-96 | 56.55            | 25.32             | ND              | 31.23                    | 02-28-96 | 1100  | <10                                  | <10                                   | <10                             | --          |                     |                       |
| MW-3   | 05-28-96 | 56.55            | 25.46             | ND              | 31.09                    | 05-28-96 | 1700  | <20                                  | <20                                   | <20                             | --          |                     |                       |
| MW-3   | 08-19-96 | 56.55            | 28.71             | ND              | 27.84                    | 08-19-96 | 1200  | <20                                  | <20                                   | <20                             | --          |                     |                       |
| MW-3   | 11-21-96 | 56.55            | 30.85             | ND              | 25.70                    | 11-21-96 | 710   | <20^                                 | <20^                                  | <20^                            | --          |                     |                       |
| MW-3   | 03-26-97 | 56.55            | 25.36             | ND              | 31.19                    | 03-26-97 | 710   | <40^                                 | <40^                                  | <40^                            | --          |                     |                       |
| MW-3   | 05-20-97 | 56.55            | 27.61             | ND              | 28.94                    | 05-20-97 | 800   | <25^                                 | <25^                                  | <25^                            | --          |                     |                       |
| MW-3   | 08-18-97 | 56.55            | 30.62             | ND              | 25.93                    | 08-18-97 | 420   | <5^                                  | <5^                                   | <5^                             | --          |                     |                       |
| MW-3   | 11-17-97 | 56.55            | 32.40             | ND              | 24.15                    | 11-17-97 | Not analyzed for Halogenated Volatile Organic Compounds |                                      |                                       |                                 |             |                     |                       |
| MW-3   | 12-02-99 | 56.55            | 30.75             | ND              | 25.80                    | 12-02-99 | 210*  | <0.5*                                | <0.5*                                 | <0.5*                           | --          | 0.47                | NP                    |
| MW-4   | 03-10-95 | 55.98            | 26.22             | ND              | 29.76                    | 03-11-95 | 2600  | <20                                  | --                                    | <20                             | --          |                     |                       |
| MW-4   | 06-05-95 | 55.98            | 25.79             | ND              | 30.19                    | 06-05-95 | 3100  | <20                                  | --                                    | <20                             | --          |                     |                       |
| MW-4   | 08-29-95 | 55.98            | 28.56             | ND              | 27.42                    | 08-29-95 | 2900  | <20                                  | --                                    | <20                             | --          |                     |                       |
| MW-4   | 11-16-95 | 55.98            | 31.00             | ND              | 24.98                    | 11-16-95 | 2100  | <20                                  | --                                    | <20                             | <20         |                     |                       |
| MW-4   | 02-28-96 | 55.98            | 24.77             | ND              | 31.21                    | 02-28-96 | 2400  | <20                                  | <20                                   | <20                             | --          |                     |                       |
| MW-4   | 05-28-96 | 55.98            | 24.91             | ND              | 31.07                    | 05-28-96 | 2700  | <20                                  | <20                                   | <20                             | --          |                     |                       |
| MW-4   | 08-19-96 | 55.98            | 28.17             | ND              | 27.81                    | 08-19-96 | 2600  | <20                                  | <20                                   | <20                             | --          |                     |                       |
| MW-4   | 11-21-96 | 55.98            | 30.30             | ND              | 25.68                    | 11-21-96 | 1100  | <20^                                 | <20^                                  | <20^                            | --          |                     |                       |
| MW-4   | 03-26-97 | 55.98            | 24.80             | ND              | 31.18                    | 03-26-97 | 1900  | <40^                                 | <40^                                  | <40^                            | --          |                     |                       |
| MW-4   | 05-20-97 | 55.98            | 27.03             | ND              | 28.95                    | 05-20-97 | 1600  | <50^                                 | <50^                                  | <50^                            | --          |                     |                       |
| MW-4   | 08-18-97 | 55.98            | 30.10             | ND              | 25.88                    | 08-18-97 | 600   | <125^                                | <125^                                 | --                              | --          |                     |                       |
| MW-4   | 11-17-97 | 55.98            | 31.84             | ND              | 24.14                    | 11-17-97 | Not analyzed for Halogenated Volatile Organic Compounds |                                      |                                       |                                 |             |                     |                       |
| MW-4   | 12-02-99 | 55.98            | 30.20             | ND              | 25.78                    | 12-02-99 | 320*  | <0.5*                                | <0.5*                                 | <0.5*                           | --          | 1.03                | NP                    |



**Table 1**  
**Historical Groundwater Elevation and Analytical Data**  
**Halogenated Volatile Organic Compounds (EPA method 8010 or 8240)**  
**1995-Present\*\***

**ARCO Service Station 276**  
**10600 MacArthur Boulevard, Oakland, California**

| Well   | Date     | TOC<br>Elevation | Depth to<br>Water | FP<br>Thickness | Groundwater<br>Elevation | Date     | Tetra-<br>chloro-<br>ethene<br>(PCE)                    | Tetra-<br>chloro-<br>ethene<br>(TCE) | trans-<br>1,2-<br>Dichloro-<br>ethene | cis-1,2-<br>Dichloro-<br>ethene | Freon<br>12 | Dissolved<br>Oxygen | Purged/<br>Not Purged |
|--------|----------|------------------|-------------------|-----------------|--------------------------|----------|---|--------------------------------------|---------------------------------------|---------------------------------|-------------|---------------------|-----------------------|
| Number | Gauged   | (ft-MSL)         | (feet)            | (ft-MSL)        | (ft-MSL)                 | Sampled  | µg/L  | µg/L                                 | µg/L                                  | µg/L                            | µg/L        | (mg/l)              | (P/NP)                |
| MW-5   | 03-10-95 | 55.43            | 25.62             | ND              | 29.81                    | 03-10-95 | 270   | <5                                   | --                                    | <5                              | --          |                     |                       |
| MW-5   | 06-05-95 | 55.43            | 25.30             | ND              | 30.13                    | 06-05-95 | 310   | <5                                   | --                                    | <5                              | --          |                     |                       |
| MW-5   | 08-29-95 | 55.43            | 28.21             | ND              | 27.22                    | 08-29-95 | 240   | <5                                   | --                                    | <5                              | --          |                     |                       |
| MW-5   | 11-16-95 | 55.43            | 30.63             | ND              | 24.80                    | 11-16-95 | 940   | <5                                   | --                                    | <5                              | <5          |                     |                       |
| MW-5   | 02-28-96 | 55.43            | 24.07             | ND              | 31.36                    | 02-28-96 | 1100  | <10                                  | <10                                   | <10                             | --          |                     |                       |
| MW-5   | 05-28-96 | 55.43            | 24.42             | ND              | 31.01                    | 05-28-96 | 360   | <5                                   | <5                                    | <5                              | --          |                     |                       |
| MW-5   | 08-19-96 | 55.43            | 27.82             | ND              | 27.61                    | 08-21-96 | 150   | <1                                   | <1                                    | 2                               | --          |                     |                       |
| MW-5   | 11-21-96 | 55.43            | 29.92             | ND              | 25.51                    | 11-21-96 | 1900  | <20^                                 | <20^                                  | <20^                            | --          |                     |                       |
| MW-5   | 03-26-97 | 55.43            | 24.22             | ND              | 31.21                    | 03-26-97 | 270   | <10^                                 | <10^                                  | <10^                            | --          |                     |                       |
| MW-5   | 05-20-97 | 55.43            | 26.60             | ND              | 28.83                    | 05-20-97 | 290   | <5^                                  | <5^                                   | <5^                             | --          |                     |                       |
| MW-5   | 08-18-97 | 55.43            | NR                | ND              | NR                       | 08-18-97 | --  | --                                   | --                                    | --                              | --          |                     |                       |
| MW-5   | 11-17-97 | 55.43            | Not surveyed      |                 |                          | 11-17-97 | Not analyzed for Halogenated Volatile Organic Compounds |                                      |                                       |                                 |             |                     |                       |
| MW-5   | 12-02-99 | 55.43            | 29.84             | ND              | 25.59                    | 12-02-99 | 46*   | <0.5*                                | <0.5*                                 | <0.5*                           | --          | 0.53                | P                     |
| MW-6   | 03-10-95 | 61.21            | 31.54             | ND              | 29.67                    | 03-11-95 | 1300  | <20                                  | --                                    | <20                             | --          |                     |                       |
| MW-6   | 06-05-95 | 61.21            | 31.15             | ND              | 30.06                    | 06-05-95 | 2000  | <20                                  | --                                    | <20                             | --          |                     |                       |
| MW-6   | 08-29-95 | 61.21            | 34.03             | ND              | 27.18                    | 08-29-95 | 1300  | <20                                  | --                                    | <20                             | --          |                     |                       |
| MW-6   | 11-16-95 | 61.21            | 36.40             | ND              | 24.81                    | 11-16-95 | 1300  | <20                                  | --                                    | <20                             | <20         |                     |                       |
| MW-6   | 02-28-96 | 61.21            | 30.18             | ND              | 31.03                    | 02-28-96 | 960   | <20                                  | <20                                   | <20                             | --          |                     |                       |
| MW-6   | 05-28-96 | 61.21            | 30.29             | ND              | 30.92                    | 05-28-96 | 970   | <20                                  | <20                                   | <20                             | --          |                     |                       |
| MW-6   | 08-19-96 | 61.21            | 33.54             | ND              | 27.67                    | 08-19-96 | 820   | <20                                  | <20                                   | <20                             | --          |                     |                       |
| MW-6   | 11-21-96 | 61.21            | 35.70             | ND              | 25.51                    | 11-21-96 | 680   | <20^                                 | <20^                                  | <20^                            | --          |                     |                       |
| MW-6   | 03-26-97 | 61.21            | 30.15             | ND              | 31.06                    | 03-26-97 | 830   | <40^                                 | <40^                                  | <40^                            | --          |                     |                       |
| MW-6   | 05-20-97 | 61.21            | 32.40             | ND              | 28.81                    | 05-20-97 | 270   | <5^                                  | <5^                                   | <5^                             | --          |                     |                       |
| MW-6   | 08-18-97 | 61.21            | 35.47             | ND              | 25.74                    | 08-18-97 | 420   | <62.5^                               | <62.5^                                | --                              | --          |                     |                       |
| MW-6   | 11-17-97 | 61.21            | 37.25             | ND              | 23.96                    | 11-17-97 | Not analyzed for Halogenated Volatile Organic Compounds |                                      |                                       |                                 |             |                     |                       |
| MW-6   | 12-02-99 | 61.21            | 35.55             | ND              | 25.66                    | 12-02-99 | Not sampled: not on sampling schedule                   |                                      |                                       |                                 |             |                     |                       |

**Table 1**  
**Historical Groundwater Elevation and Analytical Data**  
**Halogenated Volatile Organic Compounds (EPA method 8010 or 8240)**  
**1995-Present\*\***

**ARCO Service Station 276**  
**10600 MacArthur Boulevard, Oakland, California**

| Well   | Date     | TOC<br>Elevation | Depth to<br>Water | FP<br>Thickness | Groundwater<br>Elevation | Date     | Tetra-<br>chloro-<br>ethene<br>(PCE)                          | Tetra-<br>chloro-<br>ethene<br>(TCE) | trans-<br>1,2-<br>Dichloro-<br>ethene | cis-1,2-<br>Dichloro-<br>ethene | Freon<br>12 | Dissolved<br>Oxygen | Purged/<br>Not Purged |  |
|--------|----------|------------------|-------------------|-----------------|--------------------------|----------|---|--------------------------------------|---------------------------------------|---------------------------------|-------------|---------------------|-----------------------|--|
| Number | Gauged   | (ft-MSL)         | (feet)            | (ft-MSL)        | (ft-MSL)                 | Sampled  | µg/L  | µg/L                                 | µg/L                                  | µg/L                            | µg/L        | (mg/l)              | (P/NP)                |  |
| MW-7   | 03-10-95 | 58.22            | 17.69             | ND^^            | 40.53                    | 03-11-95 | Not sampled: floating product entered the well during purging |                                      |                                       |                                 |             |                     |                       |  |
| MW-7   | 06-05-95 | 58.22            | 19.68             | ND              | 38.54                    | 06-05-95 | <10   | <10                                  | --                                    | <10                             | --          |                     |                       |  |
| MW-7   | 08-29-95 | 58.22            | 21.70             | ND              | 36.52                    | 08-29-95 | <10   | <10                                  | --                                    | <10                             | --          |                     |                       |  |
| MW-7   | 11-16-95 | 58.22            | 23.02             | ND              | 35.20                    | 11-16-95 | <20   | <20                                  | --                                    | <20                             | <20         |                     |                       |  |
| MW-7   | 02-28-96 | 58.22            | 16.54             | ND              | 41.68                    | 02-28-96 | <10   | <10                                  | <10                                   | <10                             | --          |                     |                       |  |
| MW-7   | 05-28-96 | 58.22            | 19.29             | ND              | 38.93                    | 05-28-96 | <10   | <10                                  | <10                                   | <10                             | --          |                     |                       |  |
| MW-7   | 08-19-96 | 58.22            | 21.84             | ND              | 36.38                    | 08-21-96 | <1  | <1                                   | <1                                    | <1                              | --          |                     |                       |  |
| MW-7   | 11-21-96 | 58.22            | 19.58             | ND              | 38.64                    | 11-21-96 | <10^  | <10^                                 | <10^                                  | <10^                            | --          |                     |                       |  |
| MW-7   | 03-26-97 | 58.22            | 19.67             | ND              | 38.55                    | 03-26-97 | <20^  | <20^                                 | <20^                                  | <20^                            | --          |                     |                       |  |
| MW-7   | 05-20-97 | 58.22            | 20.18             | ND              | 38.04                    | 05-20-97 | <10^  | <10^                                 | <10^                                  | <10^                            | --          |                     |                       |  |
| MW-7   | 08-18-97 | 58.22            | 22.21             | ND              | 36.01                    | 08-18-97 | <10^  | <10^                                 | <10^                                  | <10^                            | --          |                     |                       |  |
| MW-7   | 11-17-97 | 58.22            | 20.85             | ND              | 37.37                    | 11-17-97 | Not analyzed for Halogenated Volatile Organic Compounds       |                                      |                                       |                                 |             |                     |                       |  |
| MW-7   | 12-02-99 | 58.22            | 20.92             | ND              | 37.30                    | 12-02-99 | Not sampled: not on sampling schedule                         |                                      |                                       |                                 |             |                     |                       |  |
| MW-8   | 03-10-95 | 53.65            | 23.60             | ND              | 30.05                    | 03-10-95 | <1  | <1                                   | --                                    | <1                              | --          |                     |                       |  |
| MW-8   | 06-05-95 | 53.65            | 23.48             | ND              | 30.17                    | 06-05-95 | <1  | <1                                   | --                                    | <1                              | --          |                     |                       |  |
| MW-8   | 08-29-95 | 53.65            | 26.44             | ND              | 27.21                    | 08-29-95 | <1  | <1                                   | --                                    | <1                              | --          |                     |                       |  |
| MW-8   | 11-16-95 | 53.65            | 28.90             | ND              | 24.75                    | 11-16-95 | <1  | <1                                   | --                                    | <1                              | <1          |                     |                       |  |
| MW-8   | 02-28-96 | 53.65            | 22.16             | ND              | 31.49                    | 02-28-96 | 3   | <1                                   | <1                                    | <1                              | --          |                     |                       |  |
| MW-8   | 05-28-96 | 53.65            | 22.62             | ND              | 31.03                    | 05-28-96 | <1  | <1                                   | <1                                    | <1                              | --          |                     |                       |  |
| MW-8   | 08-19-96 | 53.65            | 26.70             | ND              | 26.95                    | 08-21-96 | <1  | <1                                   | <1                                    | <1                              | --          |                     |                       |  |
| MW-8   | 11-21-96 | 53.65            | 28.16             | ND              | 25.49                    | 11-21-96 | 7   | <1                                   | <1                                    | <1                              | --          |                     |                       |  |
| MW-8   | 03-26-97 | 53.65            | 22.42             | ND              | 31.23                    | 03-26-97 | <1  | <1                                   | <1                                    | <1                              | --          |                     |                       |  |
| MW-8   | 05-20-97 | 53.65            | 24.84             | ND              | 28.81                    | 05-20-97 | <0.5  | <0.5                                 | <0.5                                  | <0.5                            | --          |                     |                       |  |
| MW-8   | 08-18-97 | 53.65            | 28.03             | ND              | 25.62                    | 08-18-97 | <5  | <5                                   | <5                                    | --                              | --          |                     |                       |  |
| MW-8   | 11-17-97 | 53.65            | 29.16             | ND              | 24.49                    | 11-17-97 | Not analyzed for Halogenated Volatile Organic Compounds       |                                      |                                       |                                 |             |                     |                       |  |
| MW-8   | 12-02-99 | 53.65            | 28.07             | ND              | 25.58                    | 12-02-99 | Not sampled: not on sampling schedule                         |                                      |                                       |                                 |             |                     |                       |  |

**Table 1**  
**Historical Groundwater Elevation and Analytical Data**  
**Halogenated Volatile Organic Compounds (EPA method 8010 or 8240)**  
**1995-Present\*\***

**ARCO Service Station 276**  
**10600 MacArthur Boulevard, Oakland, California**

| Well   | Date     | TOC<br>Elevation | Depth to<br>Water | FP<br>Thickness | Groundwater<br>Elevation | Date     | Tetra-<br>chloro-<br>ethene<br>(PCE)                    | Tetra-<br>chloro-<br>ethene<br>(TCE) | trans-<br>1,2-<br>Dichloro-<br>ethene | cis-1,2-<br>Dichloro-<br>ethene | Freon<br>12 | Dissolved<br>Oxygen | Purged/<br>Not Purged |
|--------|----------|------------------|-------------------|-----------------|--------------------------|----------|---|--------------------------------------|---------------------------------------|---------------------------------|-------------|---------------------|-----------------------|
| Number | Gauged   | (ft-MSL)         | (feet)            | (ft-MSL)        | (ft-MSL)                 | Sampled  | µg/L  | µg/L                                 | µg/L                                  | µg/L                            | µg/L        | (mg/l)              | (P/NP)                |
| RW-1   | 03-10-95 | 56.32            | 26.48             | Sheen           | 29.84                    | 03-10-95 | 260   | <5                                   | --                                    | <5                              | --          |                     |                       |
| RW-1   | 06-05-95 | 56.32            | 26.20             | ND              | 30.12                    | 06-05-95 | 59  | <1                                   | --                                    | <1                              | --          |                     |                       |
| RW-1   | 08-29-95 | 56.32            | 28.98             | ND              | 27.34                    | 08-29-95 | 570   | <5                                   | --                                    | <5                              | --          |                     |                       |
| RW-1   | 11-16-95 | 56.32            | 31.34             | ND              | 24.98                    | 11-16-95 | 140   | <1                                   | --                                    | <1                              | <1          |                     |                       |
| RW-1   | 02-28-96 | 56.32            | 25.12             | ND              | 31.20                    | 02-28-96 | 6   | <1                                   | <1                                    | <1                              | --          |                     |                       |
| RW-1   | 05-28-96 | 56.32            | 25.26             | ND              | 31.06                    | 05-28-96 | 12  | <1                                   | <1                                    | <1                              | --          |                     |                       |
| RW-1   | 08-19-96 | 56.32            | 28.51             | ND              | 27.81                    | 08-21-96 | 100   | <1                                   | <1                                    | <1                              | --          |                     |                       |
| RW-1   | 11-21-96 | 56.32            | 30.65             | ND              | 25.67                    | 11-21-96 | 190   | 1                                    | <1                                    | <1                              | --          |                     |                       |
| RW-1   | 03-26-97 | 56.32            | 25.15             | ND              | 31.17                    | 03-26-97 | 6   | <1                                   | <1                                    | <1                              | --          |                     |                       |
| RW-1   | 05-20-97 | 56.32            | 27.44             | ND              | 28.88                    | 05-20-97 | 5.3   | <0.5                                 | <0.5                                  | <0.5                            | --          |                     |                       |
| RW-1   | 08-18-97 | 56.32            | 30.46             | ND              | 25.86                    | 08-18-97 | 46  | <5                                   | <5                                    | --                              | --          |                     |                       |
| RW-1   | 11-17-97 | 56.32            | 32.16             | ND              | 24.16                    | 11-17-97 | Not analyzed for Halogenated Volatile Organic Compounds |                                      |                                       |                                 |             |                     |                       |
| RW-1   | 12-02-99 | 56.32            | 30.54             | ND              | 25.78                    | 12-02-99 | Not sampled: not on sampling schedule                   |                                      |                                       |                                 |             |                     |                       |
| WGR-3  | 03-10-95 | NR               | 15.20             | ND              | NR                       | 03-11-95 | <1  | <1                                   | --                                    | <1                              | --          |                     |                       |
| WGR-3  | 06-05-95 | NR               | 19.25             | ND              | NR                       | 06-05-95 | <1  | <1                                   | --                                    | <1                              | --          |                     |                       |
| WGR-3  | 08-29-95 | NR               | 21.41             | ND              | NR                       | 08-29-95 | <1  | <1                                   | --                                    | <1                              | --          |                     |                       |
| WGR-3  | 11-16-95 | NR               | 22.50             | ND              | NR                       | 11-16-95 | <1  | <1                                   | --                                    | <1                              | <1          |                     |                       |
| WGR-3  | 02-28-96 | NR               | 14.90             | ND              | NR                       | 02-28-96 | <1  | <1                                   | <1                                    | <1                              | --          |                     |                       |
| WGR-3  | 05-28-96 | NR               | 18.33             | ND              | NR                       | 05-28-96 | <1  | <1                                   | <1                                    | <1                              | --          |                     |                       |
| WGR-3  | 08-19-96 | NR               | 21.38             | ND              | NR                       | 08-19-96 | <1  | <1                                   | <1                                    | <1                              | --          |                     |                       |
| WGR-3  | 11-21-96 | NR               | 18.70             | ND              | NR                       | 11-21-96 | <1  | <1                                   | <1                                    | <1                              | --          |                     |                       |
| WGR-3  | 03-26-97 | NR               | 18.98             | ND              | NR                       | 03-26-97 | <1  | <1                                   | <1                                    | <1                              | --          |                     |                       |
| WGR-3  | 05-20-97 | NR               | 19.70             | ND              | NR                       | 05-20-97 | <0.5  | <0.5                                 | <0.5                                  | <0.5                            | --          |                     |                       |

**Table 1**  
**Historical Groundwater Elevation and Analytical Data**  
**Halogenated Volatile Organic Compounds (EPA method 8010 or 8240)**  
**1995-Present\*\***

**ARCO Service Station 276**  
**10600 MacArthur Boulevard, Oakland, California**

| Well   | Date     | TOC<br>Elevation | Depth to<br>Water | FP<br>Thickness | Groundwater<br>Elevation | Date     | Tetra-<br>chloro-<br>ethene<br>(PCE)                    | Tetra-<br>chloro-<br>ethene<br>(TCE) | trans-<br>1,2-<br>Dichloro-<br>ethene | cis-1,2-<br>Dichloro-<br>ethene | Freon<br>12 | Dissolved<br>Oxygen | Purged/<br>Not Purged |
|--------|----------|------------------|-------------------|-----------------|--------------------------|----------|---|--------------------------------------|---------------------------------------|---------------------------------|-------------|---------------------|-----------------------|
| Number | Gauged   | (ft-MSL)         | (feet)            | (ft-MSL)        | (ft-MSL)                 | Sampled  | µg/L  | µg/L                                 | µg/L                                  | µg/L                            | µg/L        | (mg/l)              | (P/NP)                |
| WGR-3  | 08-18-97 | NR               | 21.81             | ND              | NR                       | 08-18-97 | <5  | <5                                   | <5                                    | --                              | --          |                     |                       |
| WGR-3  | 11-17-97 | NR               | 20.42             | ND              | NR                       | 11-17-97 | Not analyzed for Halogenated Volatile Organic Compounds |                                      |                                       |                                 |             |                     |                       |
| WGR-3  | 12-02-99 | NR               | 20.58             | ND              | NR                       | 12-02-99 | Not sampled: not on sampling schedule                   |                                      |                                       |                                 |             |                     |                       |

TOC: Top of Casing

ft-MSL: elevation in feet, relative to mean sea level

µg/L: micrograms per liter

ND: none detected

NR: not reported; data not available or not measurable

--: not analyzed or not applicable

\*: analyzed by EPA method 8021B

^: method reporting limit was raised due to: (1) high analyte concentration requiring sample dilution, or (2) matrix interference

^^: floating product entered the well during purging

\*\* : For previous historical groundwater elevation and analytical data please refer to *Fourth Quarter 1995 Groundwater Monitoring Results and Remediation System Performance Evaluation Report, Retail Service Station 10600 and 10700 MacArthur Boulevard, Oakland, California, (EMCON, March 22, 1996).*

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

**ARCO Service Station 0276**  
**10600 MacArthur Boulevard, Oakland, California**

| <b>Date Measured</b> | <b>Average Flow Direction</b> | <b>Average Hydraulic Gradient</b> |
|----------------------|-------------------------------|-----------------------------------|
| 03-10-95             | North-Northeast               | 0.003                             |
| 06-05-95             | Flat                          | Flat                              |
| 08-29-95             | Flat                          | Flat                              |
| 11-16-95             | Southwest                     | 0.003                             |
| 02-28-96             | North-Northeast               | 0.004                             |
| 05-28-96             | Flat                          | Flat                              |
| 08-19-96             | Flat                          | Flat                              |
| 11-21-96             | Flat                          | Flat                              |
| 03-26-97             | Flat                          | Flat                              |
| 05-20-97             | Flat                          | Flat                              |
| 08-18-97             | Southwest                     | 0.003                             |
| 11-17-97             | Northeast                     | 0.003                             |
| 12-02-99             | North-Northwest               | 0.19                              |

**ATTACHMENT D**

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

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## Error Summary Log

01/31/03

EDF 1.2i All files present in deliverable.

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|                    |  |
|--------------------|--|
| Laboratory:        | Sequoia Analytical Laboratories, Inc., Morgan Hill, CA |
| Project Name:      | ARCO #276, Oakland, CA                                 |
| Work Order Number: | MLL0091  |
| Global ID:         | T0600100082  |
| Lab Report Number: | MLL0091121920020921                                    |

## Report Summary

| Labreport               | Sampid | Labsampid   | Mtrx | QC  | Anmcode | Exmcode | Logdate  | Extdate  | Anadate  | Labiocfl | Run | Sub |
|-------------------------|--------|-------------|------|-----|---------|---------|----------|----------|----------|----------|-----|-----|
| MLL00911219200<br>20921 | MW-1   | MLL009101   | W    | CS  | SW8260  | SW5030B | 11/27/02 | 12/11/02 | 12/11/02 | 2L13008  | 1   |     |
| MLL00911219200<br>20921 | MW-3   | MLL009102   | W    | CS  | SW8260  | SW5030B | 11/27/02 | 12/11/02 | 12/13/02 | 2L13008  | 1   |     |
| MLL00911219200<br>20921 | MW-4   | MLL009103   | W    | CS  | SW8260  | SW5030B | 11/27/02 | 12/11/02 | 12/13/02 | 2L13008  | 1   |     |
| MLL00911219200<br>20921 | MW-5   | MLL009104   | W    | CS  | SW8260  | SW5030B | 11/27/02 | 12/11/02 | 12/13/02 | 2L13008  | 1   |     |
|                         |        | 2L13008BSD1 | WQ   | BD1 | SW8260  | SW5030B | //       | 12/11/02 | 12/12/02 | 2L13008  | 1   |     |
|                         |        | 2L13008BSD2 | WQ   | BD2 | SW8260  | SW5030B | //       | 12/11/02 | 12/11/02 | 2L13008  | 1   |     |
|                         |        | 2L13008BS1  | WQ   | BS1 | SW8260  | SW5030B | //       | 12/11/02 | 12/12/02 | 2L13008  | 1   |     |
|                         |        | 2L13008BS2  | WQ   | BS2 | SW8260  | SW5030B | //       | 12/11/02 | 12/11/02 | 2L13008  | 1   |     |
|                         |        | 2L13008BLK1 | WQ   | LB1 | SW8260  | SW5030B | //       | 12/11/02 | 12/12/02 | 2L13008  | 1   |     |
|                         |        | 2L13008BLK2 | WQ   | LB2 | SW8260  | SW5030B | //       | 12/11/02 | 12/11/02 | 2L13008  | 1   |     |



# EDFSAMP: Error Summary Log

01/31/03

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

# EDFTEST: Error Summary Log

01/31/03

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

# EDFRES: Error Summary Log

01/31/03

| Error type                            | Labsampid | Qccode | Matrix | Anmcode | Pvccode | Anadate | Run number | Parlabel |
|---------------------------------------|-----------|--------|--------|---------|---------|---------|------------|----------|
| There are no errors in this data file |           |        |        |         |         | //      | 0          |          |

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## EDFQC: Error Summary Log

01/31/03

| Error type                             | Lablotct | Anmcode | Parlabel | Qccode | Labqid |
|--|----------|---------|----------|--------|--------|
| There are no errors in this data files |          |         |          |        |        |

# EDFCL: Error Summary Log

01/31/03

| Error type                            | Clevdate | Anmcode | Exmcode | Parlabel | Cicode |
|---------------------------------------|----------|---------|---------|----------|--------|
| There are no errors in this data file | //       |         |         |          |        |