R0456

URS

August 27, 2004



Mr. Robert Shultz
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-8577

**Re: Third Quarter 2004 Groundwater Monitoring Report**
**Former BP Service Station #11102**
**100 MacArthur Boulevard**
**Oakland, California**
**URS Project #38486804**

Dear Mr. Shultz:

On behalf of the Atlantic Richfield Company (RM), a BP affiliated company, URS Corporation (URS) is submitting the *Third Quarter 2004 Groundwater Monitoring Report* for Former BP Service Station #11102, located at 100 MacArthur Boulevard, Oakland, California.

If you have any questions regarding this submission, please call (510) 874–1720.

Sincerely,
**URS CORPORATION**

CERTIFIED HYDROGEOLOGIST
LEONARD P. NILES
NO. HG357
EXP. 3/31/06
STATE OF CALIFORNIA

Leonard P. Niles, R.G., C.H.G.
Project Manager

Enclosure: Third Quarter 2004 Groundwater Monitoring Report

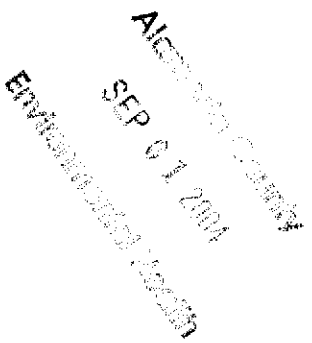
cc: Mr. Kyle Christie, RM, (electronic copy uploaded to ENFOS)
Ms. Liz Sewell, ConocoPhillips, 76 Broadway, Sacramento, CA 95818
Mr. Chris Jimmerson, Delta Environmental Consultants, 3164 Gold Camp Drive, Suite 200, Rancho Cordova, California 95670-6021

URS Corporation
1333 Broadway, Suite 800
Oakland, CA 94612-1924
Tel: 510.893.3600
Fax: 510.874.3268

**REPORT**

# THIRD QUARTER 2004 GROUNDWATER MONITORING

## FORMER BP SERVICE STATION #11102
## 100 MACARTHUR BOULEVARD,
## OAKLAND, CALIFORNIA



*Prepared for*
Atlantic Richfield Company

August 27, 2004

URS Corporation
1333 Broadway
Oakland, California 94612

38486804

Date: August 27, 2004

Quarter: 3Q 04

## BP QUARTERLY GROUNDWATER MONITORING REPORT

| | | | |
|---|---|---|---|
| Facility No.: | 11102 | Address: | 100 MacArthur Boulevard, Oakland, CA |
| RM Environmental Business Manager: | | | Kyle Christie |
| Consulting Co./Contact Person: | | | URS Corporation/ Leonard Niles |
| Consultant Project No.: | | | 38486804 |
| Primary Agency/Case #: | | | Alameda County Department of Environmental Health (ACDEH)/Case #RO0000456 |

**WORK PERFORMED THIS QUARTER (Third – 2004):**

1. Performed third quarter 2004 groundwater monitoring event on July 1, 2004.
2. Prepared and submitted third quarter 2004 groundwater monitoring report.

**WORK PROPOSED FOR NEXT QUARTER (Fourth – 2004):**

1. Peform fourth quarter 2004 groundwater monitoring event.
2. Prepare and submit fourth quarter 2004 groundwater monitoring report.
3. Begin implementing workplan for subsurface investigation pending agency approval.

| | |
|---|---|
| Current Phase of Project: | GW monitoring/sampling |
| Frequency of Groundwater Sampling: | Wells MW-1 through MW-3 quarterly |
| Frequency of Groundwater Monitoring: | Quarterly |
| Is Free Product (FP) Present On-Site: | Monitored Natural Attenuation |
| Current Remediation Techniques: | None |
| Approximate Depth to Groundwater: | 11.52 (MW-1) to 15.19 (MW-3) feet |
| Groundwater Gradient (direction): | West |
| Groundwater Gradient (magnitude): | 0.077 feet per foot |

**DISCUSSION:**

Gasoline Range Organics (GRO) were detected above laboratory reporting limits in one of the three wells sampled this quarter at a concentration of 360 µg/L (MW-1). Benzene was not detected above laboratory reporting limits in any of the wells sampled. Methyl tert-butyl ether (MTBE) was detected in all three wells at concentrations of 48 µg/L (MW-3), 96 µg/L (MW-1), and 5,200 µg/L (MW-2). TBA was detected above laboratory reporting limits two wells at concentrations of 2,000 µg/L (MW-1) and 2,900 µg/L (MW-2). TAME was detected above laboratory reporting limits in two wells at concentrations of 0.52 µg/L (MW-3) and 110 µg/L (MW-2). URS is currently awaiting approval by ACDEH of a plume delineation workplan submitted on April 14, 2004. In the interim, URS proposes coordinating groundwater monitoring events and data sharing with the consultant for the adjacent Quick Stop (former Tosco/ ConocoPhillips) service station at 66 (formerly 96) MacArthur Boulevard. At least two of the Quick Stop monitoring wells are located downgradient from the former BP site, which would aid in delineating the extent of the dissolved-phase petroleum hydrocarbon plume.

**ATTACHMENTS:**

- Figure 1 – Groundwater Elevation Contour and Analytical Summary Map – July 1, 2004
- Table 1 – Groundwater Elevation and Analytical Data
- Table 2 – Fuel Additive Analytical Data
- Chart 1 – Concentration and Water Level Trends, Well MW-1
- Chart 2 – Concentration and Water Level Trends, Well MW-2
- Chart 3 – Concentration and Water Level Trends, Well MW-3
- Attachment A – Field Procedures and Field Data Sheets
- Attachment B – Laboratory Procedures, Certified Analytical Reports, and Chain-of-Custody Records
- Attachment C – EDCC Report and EDF/Geowell Submittal Confirmation

**ATTACHMENTS:**

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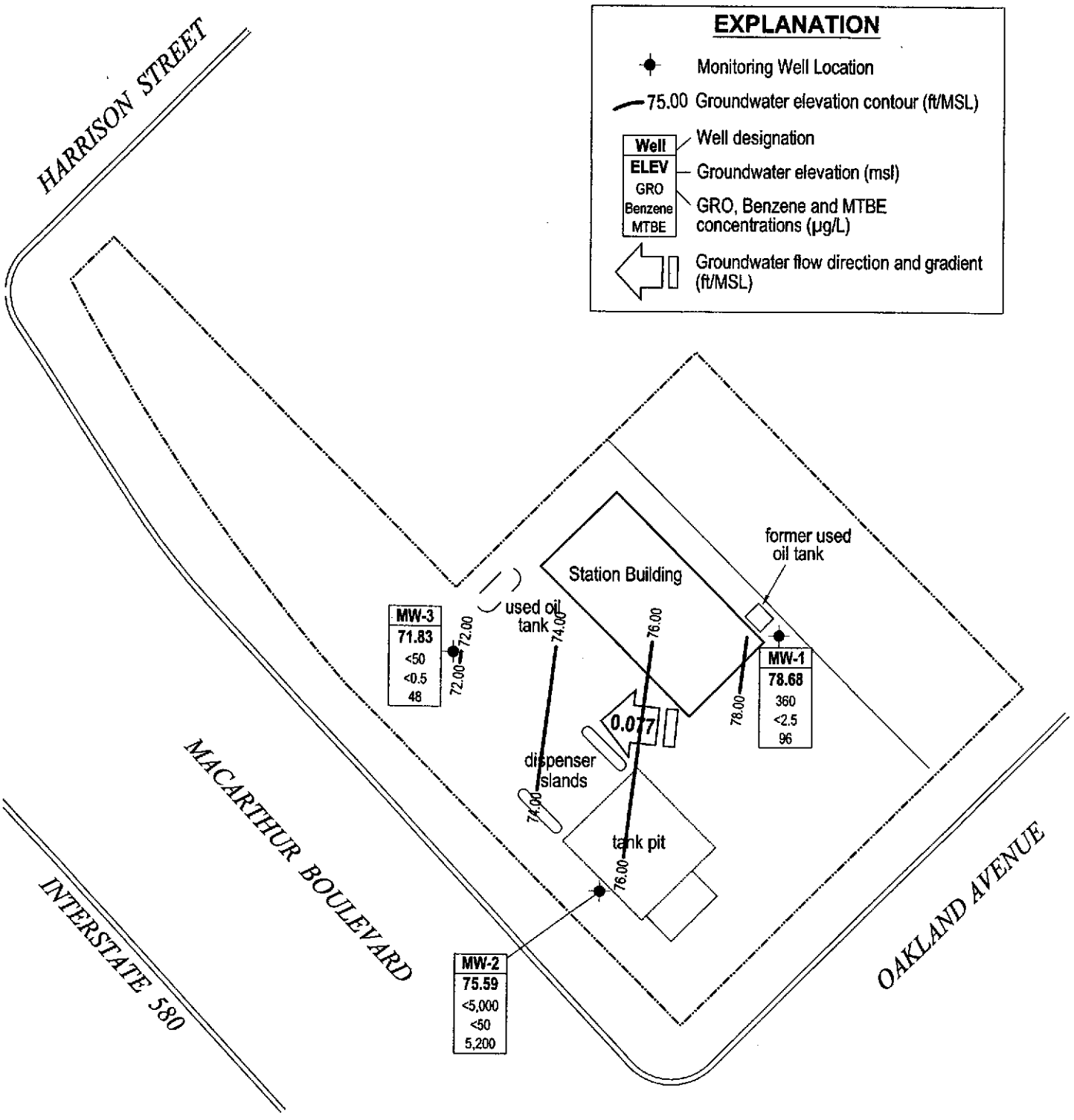



NOTE: SITE MAP ADAPTED FROM CAMBRIA ENVIRONMENTAL FIGURES.
SITE DIMENSIONS AND FIGURES FACILITY LOCATIONS NOT VERIFIED.

| | | | |
|---|---|---|---|
| URS | Project No. 38486804<br>Former BP Service Station #11102<br>100 MacArthur Boulevard<br>Oakland, California | GROUNDWATER ELEVATION CONTOUR AND ANALYTICAL SUMMARY MAP<br>Third Quarter 2004 (July 1, 2004) | FIGURE<br>1 |

X:\x_env_waste\BP GEM\Sites\L Niles Sites\111102\Reports\Monitoring\Qtr. 3, 2004\Drawings\GWEC-AS_7-1.dwg, 08/25/2004 03:15:03 PM, jkting\0

## Table 1

### Groundwater Elevation and Analytical Data

Former BP Station No. 11102
100 MacArthur Blvd., Oakland, CA

| Well No. | Date | P/ NP | Foot Note | TOC (feet) | DTW (feet) | Product Thickness (feet) | GWE (feet) | GRO/ TPH-g (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethyl-benzene (µg/L) | Total Xylenes (µg/L) | MTBE (µg/L) | DO (mg/L) | Lab | pH | DRO/ TPH-d (µg/L) | TOG (µg/L) | HVOC (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 11/4/1989 | -- | -- | 90.20 | 13.21 | -- | 76.99 | <500 | 3.4 | 0.6 | <0.3 | <0.3 | -- | -- | SAL | -- | <50 | <5000 | --- |
| | 11/11/1989 | -- | -- | 90.20 | 13.32 | -- | 76.88 | -- | -- | -- | -- | -- | -- | -- | --- | -- | -- | --- | --- |
| | 4/3/1990 | -- | -- | 90.20 | 12.46 | -- | 77.74 | 820 | 64 | 1.9 | 23 | 34 | -- | -- | ANA | -- | -- | --- | --- |
| | 7/30/1990 | -- | -- | 90.20 | 12.92 | -- | 77.28 | 190 | 11 | <5.0 | <5.0 | <5.0 | -- | -- | ANA | -- | <50 | <5000 | --- |
| | 11/20/1990 | -- | -- | 90.20 | 14.08 | -- | 76.12 | 50 | 2.4 | <0.3 | <0.3 | <0.3 | -- | -- | SAL | -- | 79 | <5000 | --- |
| | 3/1/1991 | -- | -- | 90.20 | 13.61 | -- | 76.59 | <100 | 0.9 | <0.3 | <0.3 | 0.3 | -- | -- | SAL | -- | <1000 | 14,000 | --- |
| | 8/19/1991 | -- | -- | 90.20 | 15.74 | -- | 74.46 | 370 | 35 | 0.73 | 6.4 | 5.6 | -- | -- | SEQ | -- | <50 | <5000 | --- |
| | 11/13/1991 | -- | -- | 90.20 | 14.08 | -- | 76.12 | 60 | 0.68 | <0.3 | <0.3 | <0.3 | -- | -- | SEQ | -- | <50 | <5000 | --- |
| | 2/24/1992 | -- | -- | 90.20 | 12.52 | -- | 77.68 | 140 | 3.9 | 0.66 | 1.2 | 3.8 | -- | -- | SEQ | -- | 100 | <5000 | --- |
| | 5/19/1992 | -- | -- | 90.20 | 11.80 | -- | 78.40 | 4,200 | 440 | 21 | 250 | 37 | -- | -- | SEQ | -- | 910 | <5000 | --- |
| | 6/17/1992 | -- | -- | 90.20 | 12.01 | -- | 78.19 | 4,000 | 350 | 14 | 150 | 17 | -- | -- | SEQ | -- | 560 | <5000 | --- |
| | 7/22/1992 | -- | -- | 90.20 | 12.42 | -- | 77.78 | 4,000 | <5.0 | 19 | 210 | 61 | -- | -- | ANA | -- | -- | --- | --- |
| | 8/14/1992 | -- | -- | 90.20 | 12.75 | -- | 77.45 | 2,400 | 330 | 20 | 150 | 47 | -- | -- | SEQ | -- | 1,700 | <5000 | --- |
| | 11/11/1992 | -- | -- | 90.20 | 13.69 | -- | 76.51 | 260 | 30 | 3.4 | 7.6 | 6.8 | -- | -- | ANA | -- | 92 | <5000 | --- |
| | 6/7/1993 | -- | c | 90.20 | -- | -- | -- | 3,700 | 120 | 12 | 26 | 9.5 | -- | -- | PACE | -- | -- | --- | --- |
| | 6/7/1993 | -- | -- | 90.20 | 10.93 | -- | 79.27 | 3,400 | 98 | 11 | 21 | 7.6 | -- | -- | PACE | -- | 440 | --- | --- |
| | 12/2/1993 | -- | -- | 90.20 | 12.72 | -- | 77.48 | 1,100 | 8.3 | 3.6 | 0.6 | 1.5 | -- | -- | PACE | -- | 120 | <5000 | --- |
| | 6/22/1994 | -- | c | 90.20 | -- | -- | -- | 2,100 | 30 | 3.2 | 2 | 15 | 2,000 d | -- | PACE | -- | -- | --- | --- |
| | 6/22/1994 | -- | -- | 90.20 | 11.81 | -- | 78.39 | 2,100 | 32 | 3.8 | 2.2 | 17 | 4,000 d | 3.2 | PACE | -- | <50 | <5000 | --- |
| | 1/10/1995 | -- | c | 90.20 | -- | -- | -- | <500 | 120 | <5 | 5 | <10 | -- | -- | ATI | -- | -- | --- | --- |
| | 1/10/1995 | -- | -- | 90.20 | 10.97 | -- | 79.23 | <500 | 120 | <5 | <5 | <10 | -- | 3.9 | ATI | -- | 420 | --- | --- |
| | 6/21/1995 | -- | c,e | 90.20 | -- | -- | -- | 3,600 | <13 | <5.0 | <5.0 | <10 | -- | -- | ATI | -- | -- | --- | --- |
| | 6/21/1995 | -- | -- | 90.20 | 9.38 | -- | 80.82 | 4,700 | 16 | <5.0 | <5.0 | <10 | -- | 6.7 | ATI | -- | 1,300 | 2,900 | 0.6 |
| | 12/27/1995 | -- | -- | 90.20 | 11.55 | -- | 78.65 | 430 | <2.5 | <2.5 | <2.5 | <5.0 | 1,200 | 6.3 | ATI | -- | 2,100 | 640 | --- |
| | 6/13/1996 | -- | -- | 90.20 | 9.28 | -- | 80.92 | 3,200 | 51 | <12 | <12 | <12 | 4,000 | 6.3 | SPL | -- | 920 | 2,000 | --- |
| | 12/4/1996 | -- | f | 90.20 | 11.91 | -- | 78.29 | 1,400 | 6.2 | <5 | <5 | <5 | 2,600 | 6.7 | SPL | -- | 280 | 2,000 | 6 |
| | 6/10/1997 | -- | c | 90.20 | -- | -- | -- | 7,700 | 14 | <25 | <25 | <25 | 13,000 | -- | SPL | -- | -- | --- | --- |
| | 6/10/1997 | -- | -- | 90.20 | 8.97 | -- | 81.23 | 7,900 | 12 | <10 | <10 | <10 | 15,000 | 6 | SPL | -- | 1,700 | <5 | ND |
| | 12/12/1997 | -- | -- | 90.20 | 11.37 | -- | 78.83 | 440 | 8.8 | <1.0 | 2.6 | 9.4 | 6,700 | 5.5 | SPL | -- | 760 | 1,200 | ND |
| | 6/18/1998 | -- | -- | 90.20 | 8.02 | -- | 82.18 | 7,500 | <2.5 | <5.0 | <5.0 | <5.0 | 5,600 | 4.9 | SPL | -- | 2,900 | <5 | ND |
| | 3/9/1999 | -- | -- | 90.20 | 9.80 | -- | 80.40 | 32,000 | 100 | 16 | 72 | 110 | 49,000 | -- | SPL | -- | -- | --- | --- |
| | 9/28/1999 | -- | -- | 90.20 | 10.78 | -- | 79.42 | 1,000 | <5.0 | <5.0 | <5.0 | <5.0 | 730 | -- | SPL | -- | -- | --- | <1.0 |
| | 10/14/1999 | -- | -- | 90.20 | 10.84 | -- | 79.36 | -- | -- | -- | -- | -- | -- | -- | SPL | -- | 660 | --- | --- |
| | 3/27/2000 | -- | -- | 90.20 | 9.83 | -- | 80.37 | 4,300 | 160 | 19 | 37 | 43 | 28,000 | -- | PACE | -- | -- | --- | --- |

## Table 1

### Groundwater Elevation and Analytical Data

Former BP Station No. 11102

100 MacArthur Blvd., Oakland, CA

| Well No. | Date | P/ NP | Foot Note | TOC (feet) | DTW (feet) | Product Thickness (feet) | GWE (feet) | GRO/ TPH-g (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethyl-benzene (µg/L) | Total Xylenes (µg/L) | MTBE (µg/L) | DO (mg/L) | Lab | pH | DRO/ TPH-d (µg/L) | TOG (µg/L) | HVOC (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 9/28/2000 | -- | -- | 90.20 | 11.33 | -- | 78.87 | 2,700 | 10 | 2.6 | 1.1 | 2.7 | 28,000 | -- | PACE | -- | -- | --- | --- |
| | 3/8/2001 | -- | -- | 90.20 | 10.96 | -- | 79.24 | 8,200 | 23.5 | 6.09 | 5.23 | 8.97 | 11,600 | -- | PACE | -- | -- | --- | --- |
| | 9/21/2001 | -- | -- | 90.20 | 12.07 | -- | 78.13 | 6,000 | 37.9 | <0.5 | <0.5 | <1.5 | 7,370 | -- | PACE | -- | -- | --- | --- |
| | 2/28/2002 | -- | -- | 90.20 | 10.48 | -- | 79.72 | 6,400 | 60.8 | <5.0 | 6.43 | <10 | 7,750 | -- | PACE | -- | -- | --- | --- |
| | 9/6/2002 | -- | * | 90.20 | 11.20 | -- | 79.00 | 1,400 | <5.0 | <5.0 | <5.0 | <5.0 | 6,000 | -- | SEQ | -- | -- | --- | --- |
| | 2/19/2003 | -- | h | 90.20 | 11.29 | -- | 78.91 | <10000 | <100 | 110 | <100 | <100 | 4,500 | -- | SEQ | -- | -- | --- | --- |
| | 7/14/2003 | -- | -- | 90.20 | 11.18 | -- | 79.02 | 710 | 11 | <10 | <10 | <10 | 940 | -- | SEQ | -- | -- | --- | --- |
| | 01/14/2004 | -- | odor | 90.20 | 11.74 | -- | 78.46 | <500 | <5.0 | <5.0 | <5.0 | <5.0 | 220 | -- | SEQM | 6.6 | -- | -- | -- |
| | 04/23/2004 | P | -- | 90.20 | 11.95 | -- | 78.25 | 470 I | 3.4 | <2.5 | <2.5 | <2.5 | 150 | -- | SEQM | 6.7 | -- | -- | -- |
| | **07/01/2004** | **P** | **--** | **90.20** | **11.52** | **--** | **78.68** | **360** | **<2.5** | **<2.5** | **<2.5** | **<2.5** | **96** | **--** | **SEQM** | **6.0** | **--** | **--** | **--** |
| MW-2 | 11/4/1989 | -- | -- | 87.91 | 15.84 | -- | 72.07 | <500 | 6.5 | <0.3 | <0.3 | <0.3 | -- | -- | SAL | -- | -- | --- | --- |
| | 11/11/1989 | -- | -- | 87.91 | 14.75 | -- | 73.16 | -- | -- | -- | -- | -- | -- | -- | --- | -- | -- | --- | --- |
| | 4/3/1990 | -- | -- | 87.91 | 15.25 | -- | 72.66 | <500 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | ANA | -- | -- | --- | --- |
| | 7/30/1990 | -- | -- | 87.91 | 15.59 | -- | 72.32 | 61 | 6.5 | <0.5 | <0.5 | <0.5 | -- | -- | ANA | -- | -- | --- | --- |
| | 11/20/1990 | -- | -- | 87.91 | 17.81 | -- | 70.10 | <50 | 0.3 | <0.3 | <0.3 | <0.3 | -- | -- | SAL | -- | -- | --- | --- |
| | 3/1/1991 | -- | -- | 87.91 | 17.11 | -- | 70.80 | <100 | 0.4 | <0.3 | <0.3 | <0.3 | -- | -- | SAL | -- | -- | --- | --- |
| | 8/19/1991 | -- | -- | 87.91 | 17.97 | -- | 69.94 | <30 | <0.3 | <0.3 | <0.3 | <0.3 | -- | -- | SEQ | -- | -- | --- | --- |
| | 11/13/1991 | -- | -- | 87.91 | 16.76 | -- | 71.15 | 38 | 0.32 | <0.3 | <0.3 | <0.3 | -- | -- | SEQ | -- | -- | --- | --- |
| | 2/24/1992 | -- | -- | 87.91 | 15.07 | -- | 72.84 | <50 | <0.5 | <0.5 | <0.5 | 0.58 | -- | -- | SEQ | -- | -- | --- | --- |
| | 5/19/1992 | -- | -- | 87.91 | 14.70 | -- | 73.21 | <50 | 0.55 | <0.5 | <0.5 | <0.5 | -- | -- | SEQ | -- | -- | --- | --- |
| | 7/22/1992 | -- | -- | 87.91 | 15.60 | -- | 72.31 | 90 | 1.3 | 0.6 | 0.9 | 1.9 | -- | -- | ANA | -- | -- | --- | --- |
| | 8/14/1992 | -- | -- | 87.91 | 15.88 | -- | 72.03 | -- | -- | -- | -- | -- | -- | -- | --- | -- | -- | --- | --- |
| | 11/11/1992 | -- | c | 87.91 | -- | -- | -- | 65 | 3.2 | <0.5 | <0.5 | 1 | -- | -- | ANA | -- | -- | --- | --- |
| | 11/11/1992 | -- | -- | 87.91 | 16.19 | -- | 71.72 | 52 | 2.8 | <0.5 | <0.5 | 0.9 | -- | -- | ANA | -- | -- | --- | --- |
| | 6/7/1993 | -- | -- | 87.91 | 14.42 | -- | 73.49 | 1,200 | 14 | 2.8 | 1.9 | 1.71 | -- | -- | PACE | -- | -- | --- | --- |
| | 12/2/1993 | -- | c | 87.91 | -- | -- | -- | 2,100 | 32 | 3.8 | 2.2 | 17 | 3,700 d | -- | PACE | -- | -- | --- | --- |
| | 12/2/1993 | -- | -- | 87.91 | 14.94 | -- | 72.97 | 790 | 3.4 | 0.5 | 10 | <0.5 | 3,700 d | -- | PACE | -- | -- | --- | --- |
| | 6/22/1994 | -- | -- | 87.91 | 14.25 | -- | 73.66 | 110 | <0.5 | <0.5 | <0.5 | <0.5 | 120 d | 3.9 | PACE | -- | -- | --- | --- |
| | 1/10/1995 | -- | -- | 87.91 | 13.64 | -- | 74.27 | <50 | <0.5 | <0.5 | 0.6 | 1 | -- | 4.3 | ATI | -- | -- | --- | --- |
| | 6/21/1995 | -- | -- | 87.91 | 11.66 | -- | 76.25 | 4,700 | <10 | <10 | <10 | <20 | -- | 7.8 | ATI | -- | -- | --- | --- |
| | 12/27/1995 | -- | c | 87.91 | -- | -- | -- | 6,300 | <25 | <25 | <25 | <50 | 19,000 | -- | ATI | -- | -- | --- | --- |
| | 12/27/1995 | -- | -- | 87.91 | 13.11 | -- | 74.80 | 6,100 | <25 | <25 | <25 | <50 | 20,000 | 6.7 | ATI | -- | -- | --- | --- |
| | 6/13/1996 | -- | c | 87.91 | -- | -- | -- | 8,700 | <5 | <5 | <5 | <5 | 13,000 | -- | SPL | -- | -- | --- | --- |

## Table 1

### Groundwater Elevation and Analytical Data

Former BP Station No. 11102
100 MacArthur Blvd., Oakland, CA

| Well No. | Date | P/ NP | Foot Note | TOC (feet) | DTW (feet) | Product Thickness (feet) | GWE (feet) | GRO/ TPH-g (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethyl-benzene (µg/L) | Total Xylenes (µg/L) | MTBE (µg/L) | DO (mg/L) | Lab | pH | DRO/ TPH-d (µg/L) | TOG (µg/L) | HVOC (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-2 | 6/13/1996 | -- | -- | 87.91 | 10.86 | -- | 77.05 | 8,300 | <2.5 | <2.5 | <2.5 | <2.5 | 13,000 | 6.5 | SPL | -- | -- | --- | --- |
| | 12/4/1996 | -- | c | 87.91 | -- | -- | -- | 5,900 | <2.5 | <5 | <5 | <5 | 11,000 | -- | SPL | -- | -- | --- | --- |
| | 12/4/1996 | -- | -- | 87.91 | 13.03 | -- | 74.88 | 5,900 | <2.5 | <5 | <5 | <5 | 11,000 | 6.3 | SPL | -- | -- | --- | --- |
| | 6/10/1997 | -- | -- | 87.91 | 10.04 | -- | 77.87 | <50 | <0.5 | <1.0 | <1.0 | <1.0 | <10 | 5.8 | SPL | -- | -- | --- | --- |
| | 12/12/1997 | -- | -- | 87.91 | 12.44 | -- | 75.47 | <50 | <0.5 | <1.0 | <1.0 | <1.0 | <10 | 5.7 | SPL | -- | -- | --- | --- |
| | 6/18/1998 | -- | c | 87.91 | -- | -- | -- | <50 | <0.5 | <1.0 | <1.0 | <1.0 | <10 | -- | SPL | -- | -- | --- | --- |
| | 6/18/1998 | -- | -- | 87.91 | 8.89 | -- | 79.02 | 50 | <0.5 | <1.0 | <1.0 | <1.0 | <10 | 5.3 | SPL | -- | -- | --- | --- |
| | 3/9/1999 | -- | -- | 87.91 | 10.20 | -- | 77.71 | 15,000 | <5.0 | <5.0 | <5.0 | <5.0 | 23,000 | -- | SPL | -- | -- | --- | --- |
| | 9/28/1999 | -- | -- | 87.91 | 11.81 | -- | 76.10 | 36,000 | <5.0 | 12 | 7 | 26 | 35,000 | -- | SPL | -- | -- | --- | <5.0 |
| | 10/14/1999 | -- | -- | 87.91 | 10.27 | -- | 77.64 | -- | -- | -- | -- | -- | -- | -- | SPL | -- | 100 | --- | --- |
| | 3/27/2000 | -- | -- | 87.91 | 9.98 | -- | 77.93 | 1,300 | <0.5 | <0.5 | 0.51 | <0.5 | 5,800 | -- | PACE | -- | -- | --- | --- |
| | 9/28/2000 | -- | -- | 87.91 | 11.40 | -- | 76.51 | 1,600 | 1.8 | 1.7 | 0.54 | 2.2 | 15,000 | -- | PACE | -- | -- | --- | --- |
| | 3/8/2001 | -- | -- | 87.91 | 11.16 | -- | 76.75 | 20,000 | <0.5 | <0.5 | <0.5 | <0.5 | 29,100 | -- | PACE | -- | -- | --- | --- |
| | 9/21/2001 | -- | -- | 87.91 | 11.65 | -- | 76.26 | 5,000 | <0.5 | <0.5 | <0.5 | <1.5 | 6,110 | -- | PACE | -- | -- | --- | --- |
| | 2/28/2002 | -- | -- | 87.91 | 9.86 | -- | 78.05 | 3,200 | 35.1 | <0.5 | <0.5 | <1.0 | 4,620 | -- | PACE | -- | -- | --- | --- |
| | 9/6/2002 | -- | * | 87.91 | 12.32 | -- | 75.59 | 1,900 | <10 | <10 | <10 | <10 | 15,000 | -- | SEQ | -- | -- | --- | --- |
| | 2/19/2003 | -- | h | 87.91 | 11.63 | -- | 76.28 | 45,000 | <250 | <250 | <250 | <250 | 32,000 | -- | SEQ | -- | -- | --- | --- |
| | 7/14/2003 | -- | -- | 87.91 | 12.07 | -- | 75.84 | 9,300 | <500 | <500 | <500 | <500 | 24,000 | -- | SEQ | -- | -- | --- | --- |
| | 01/14/2004 | P | -- | 87.91 | 11.45 | -- | 76.46 | <50,000 | <500 | <500 | <500 | <500 | 21,000 | -- | SEQM | 6.9 | -- | -- | -- |
| | 04/23/2004 | P | -- | 87.91 | 11.45 | -- | 76.46 | 5,100 I | <250 | <250 | <250 | <250 | 22,000 | -- | SEQM | 6.8 | -- | -- | -- |
| | **07/01/2004** | **P** | **--** | **87.91** | **12.32** | **--** | **75.59** | **<5,000** | **<50** | **<50** | **<50** | **<50** | **5,200** | **--** | **SEQM** | **5.6** | **--** | **--** | **--** |
| MW-3 | 11/4/1989 | -- | -- | 87.02 | 15.40 | -- | 71.62 | <500 | <0.3 | <0.3 | <0.3 | <0.3 | -- | -- | SAL | -- | -- | --- | --- |
| | 11/11/1989 | -- | -- | 87.02 | 14.10 | -- | 72.92 | -- | -- | -- | -- | -- | -- | -- | --- | -- | -- | --- | --- |
| | 4/3/1990 | -- | -- | 87.02 | 13.90 | -- | 73.12 | <100 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | ANA | -- | -- | --- | --- |
| | 7/30/1990 | -- | -- | 87.02 | 13.77 | -- | 73.25 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | ANA | -- | -- | <5000 | --- |
| | 11/20/1990 | -- | -- | 87.02 | 14.67 | -- | 72.35 | <50 | 0.3 | 0.8 | 0.4 | 1.5 | -- | -- | SAL | -- | -- | --- | --- |
| | 3/1/1991 | -- | -- | 87.02 | 15.22 | -- | 71.80 | <100 | 0.4 | <0.3 | <0.3 | <0.3 | -- | -- | SAL | -- | -- | --- | --- |
| | 8/19/1991 | -- | -- | 87.02 | 13.15 | -- | 73.87 | <30 | <0.3 | <0.3 | <0.3 | <0.3 | -- | -- | SEQ | -- | -- | --- | --- |
| | 11/13/1991 | -- | -- | 87.02 | 15.66 | -- | 71.36 | <30 | <0.3 | <0.3 | <0.3 | <0.3 | -- | -- | SEQ | -- | -- | --- | --- |
| | 2/24/1992 | -- | -- | 87.02 | 15.01 | -- | 72.01 | <50 | 0.65 | 1.4 | 0.66 | 4.4 | -- | -- | SEQ | -- | -- | --- | --- |
| | 5/19/1992 | -- | -- | 87.02 | 15.52 | -- | 71.50 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | SEQ | -- | -- | --- | --- |
| | 7/22/1992 | -- | -- | 87.02 | 15.63 | -- | 71.39 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | ANA | -- | <50 | <5000 | --- |
| | 8/14/1992 | -- | -- | 87.02 | 13.57 | -- | 73.45 | -- | -- | -- | -- | -- | -- | -- | --- | -- | -- | --- | --- |

## Table 1

### Groundwater Elevation and Analytical Data

Former BP Station No. 11102
100 MacArthur Blvd., Oakland, CA

| Well No. | Date | P/ NP | Foot Note | TOC (feet) | DTW (feet) | Product Thickness (feet) | GWE (feet) | GRO/ TPH-g (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethyl-benzene (µg/L) | Total Xylenes (µg/L) | MTBE (µg/L) | DO (mg/L) | Lab | pH | DRO/ TPH-d (µg/L) | TOG (µg/L) | HVOC (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-3 | 11/11/1992 | -- | -- | 87.02 | 14.13 | -- | 72.89 | <50 | <0.5 | 0.7 | <0.5 | 1.3 | -- | -- | ANA | -- | -- | --- | --- |
| | 6/7/1993 | -- | -- | 87.02 | 12.13 | -- | 74.89 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | PACE | -- | -- | --- | --- |
| | 12/2/1993 | -- | -- | 87.02 | 13.29 | -- | 73.73 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | PACE | -- | -- | --- | --- |
| | 6/22/1994 | -- | -- | 87.02 | 12.78 | -- | 74.24 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | 2.9 | PACE | -- | -- | --- | --- |
| | 1/10/1995 | -- | -- | 87.02 | 12.01 | -- | 75.01 | <50 | <0.5 | <0.5 | <0.5 | <1 | -- | 3.8 | ATI | -- | -- | --- | --- |
| | 6/21/1995 | -- | -- | 87.02 | 11.57 | -- | 75.45 | <50 | <0.50 | <0.50 | <0.50 | <1.0 | -- | 7.4 | ATI | -- | -- | --- | --- |
| | 12/27/1995 | -- | -- | 87.02 | 13.47 | -- | 73.55 | <50 | <0.50 | <0.50 | <0.50 | <1.0 | 5.7 | 7.3 | ATI | -- | -- | --- | --- |
| | 6/13/1996 | -- | -- | 87.02 | 11.22 | -- | 75.80 | 60 | <0.5 | <0.5 | <0.5 | <0.5 | <10 | 6.8 | SPL | -- | -- | --- | --- |
| | 12/4/1996 | -- | -- | 87.02 | 13.28 | -- | 73.74 | <50 | <0.5 | <1 | <1 | <1 | <10 | 6.7 | SPL | -- | -- | --- | --- |
| | 6/10/1997 | -- | -- | 87.02 | 10.22 | -- | 76.80 | <50 | <0.5 | <1.0 | <1.0 | <1.0 | <10 | 6.1 | SPL | -- | -- | --- | --- |
| | 12/12/1997 | -- | c | 87.02 | -- | -- | -- | <50 | <0.5 | <1.0 | <1.0 | <1.0 | <10 | -- | SPL | -- | -- | --- | --- |
| | 12/12/1997 | -- | -- | 87.02 | 12.61 | -- | 74.41 | <50 | <0.5 | <1.0 | <1.0 | <1.0 | <10 | 5.6 | SPL | -- | -- | --- | --- |
| | 6/18/1998 | -- | -- | 87.02 | 12.80 | -- | 74.22 | -- | -- | -- | -- | -- | -- | -- | --- | -- | -- | --- | --- |
| | 6/18/1998 | -- | -- | 87.02 | 9.07 | -- | 77.95 | 50 | <0.5 | <1.0 | <1.0 | <1.0 | <10 | 5.3 | SPL | -- | -- | --- | --- |
| | 9/28/1999 | -- | -- | 87.02 | 13.76 | -- | 73.26 | -- | -- | -- | -- | -- | -- | -- | --- | -- | -- | --- | --- |
| | 3/27/2000 | -- | -- | 87.02 | 13.77 | -- | 73.25 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 1.6 | -- | PACE | -- | -- | --- | --- |
| | 9/28/2000 | -- | -- | 87.02 | 11.28 | -- | 75.74 | <50 | <0.5 | 7.4 | <0.5 | 1.3 | 2 | -- | PACE | -- | -- | --- | --- |
| | 3/8/2001 | -- | -- | 87.02 | 11.75 | -- | 75.27 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 60.4 | -- | PACE | -- | -- | --- | --- |
| | 9/21/2001 | -- | -- | 87.02 | 11.33 | -- | 75.69 | <50 | <0.5 | <0.5 | <0.5 | <1.5 | 8.18 | -- | PACE | -- | -- | --- | --- |
| | 2/28/2002 | -- | -- | 87.02 | 10.86 | -- | 76.16 | <50 | <0.5 | <0.5 | <0.5 | <1.0 | 25.5 | -- | PACE | -- | -- | --- | --- |
| | 9/6/2002 | -- | * | 87.02 | 12.73 | -- | 74.29 | <50 | 1.2 | <0.5 | <0.5 | 1 | 16 | -- | SEQ | -- | -- | --- | --- |
| | 2/19/2003 | -- | h | 87.02 | 11.72 | -- | 75.30 | <500 | <5.0 | <5.0 | <5.0 | <5.0 | 110 | -- | SEQ | -- | -- | --- | --- |
| | 7/14/2003 | -- | -- | 87.02 | 13.76 | -- | 73.26 | <50 | <0.50 | <0.50 | <0.50 | 0.67 | 28 | -- | SEQ | -- | -- | --- | --- |
| | 01/14/2004 | P | -- | 87.02 | 14.83 | -- | 72.19 | 550 | <5.0 | <5.0 | <5.0 | <5.0 | 380 | -- | SEQM | 8.1 | -- | -- | -- |
| | 04/23/2004 | P | -- | 87.02 | 13.17 | -- | 73.85 | <200 I | <25 | <25 | <25 | <25 | 560 | -- | SEQM | 6.8 | -- | -- | -- |
| | **07/01/2004** | **P** | **--** | **87.02** | **15.19** | **--** | **71.83** | **<50** | **<0.50** | **<0.50** | **<0.50** | **0.50** | **48** | **--** | **SEQM** | **6.4** | **--** | **--** | **--** |
| QC-2 | 11/11/1992 | -- | g | -- | -- | -- | -- | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | ANA | -- | -- | --- | --- |
| | 6/7/1993 | -- | g | -- | -- | -- | -- | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | PACE | -- | -- | --- | --- |
| | 12/2/1993 | -- | g | -- | -- | -- | -- | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | PACE | -- | -- | --- | --- |
| | 6/22/1994 | -- | g | -- | -- | -- | -- | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | PACE | -- | -- | --- | --- |
| | 1/10/1995 | -- | g | -- | -- | -- | -- | <50 | <0.5 | <0.5 | <0.5 | <1 | -- | -- | ATI | -- | -- | --- | --- |
| | 6/21/1995 | -- | g | -- | -- | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <1.0 | -- | -- | ATI | -- | -- | --- | --- |
| | 12/27/1995 | -- | g | -- | -- | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <1.0 | <5.0 | -- | ATI | -- | -- | --- | --- |

## Table 1

### Groundwater Elevation and Analytical Data

Former BP Station No. 11102
100 MacArthur Blvd., Oakland, CA

| Well No. | Date | P/ NP | Foot Note | TOC (feet) | DTW (feet) | Product Thickness (feet) | GWE (feet) | GRO/ TPH-g (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethyl-benzene (µg/L) | Total Xylenes (µg/L) | MTBE (µg/L) | DO (mg/L) | Lab | pH | DRO/ TPH-d (µg/L) | TOG (µg/L) | HVOC (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QC-2 | 6/13/1996 | -- | g | -- | -- | -- | -- | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <10 | -- | SPL | -- | -- | --- | --- |

## Table 1

### Groundwater Elevation and Analytical Data

Former BP Station No. 11102
100 MacArthur Blvd., Oakland, CA

Abbreviations:
TPH-g = Total petroleum hydrocarbons as gasoline
GRO = Gasoline Range Organics
TPH-d = Total petroleum hydrocarbons as diesel
DRO = Diesel Range Organics
GWE = Groundwater Elevation, feet above mean sea level
TOG = Total oil and grease
HVOC = Halogenated volatile organic compounds
MtBE = Methyl tert-butyl ether
DIPE = Di-Isopropyl Ether
EtBE = Ethyl tert-Butyl Ether
TAME = tert-Amyl Methyl Ether
DO = Dissolved oxygen
ug/l = Micrograms per liter
< = Not detected at or above reported detection limit
— Not analyzed/measured/applicable
SAL Superior Analytical Laboratory
ANA Anametrix, Inc.
SEQ Sequoia Analytical Laboratory
PACE Pace, Inc.
ATI Analytical Technologies, Inc.
SPL Southern Petroleum Laboratories

Notes:
a = Top of casing elevations surveyed to the nearest 0.01 foot above mean sea level.
b = Groundwater elevations in feet above mean sea level.
c = Blind duplicate.
d = A copy of the documentation for this data is included in Appendix C of Alisto report 10-076-06-002.
e = Tetrachloroethene.
f = Trans-1,2-Dichloroethene
g = Travel blank.
h = TPH-g, BTEX, and MTBE analyzed by EPA Method 8260B beginning on 1st Quarter Sampling event (2/19/03)
i = Discrete peak @ C6-C7.
j = Please note that beginning in the Fourth Quarter 2003, the laboratory modified the reported analyte list. Total Petroleum Hydrocarbons as Gasoline (TPH-g) has been changed to Gasoline Range Organics (GRO). The resulting data may be impacted by the potential inclusion of non-TPH-g analytes within the requested fuel range resulting in a higher concentration being reported.
k = Beginning in the second quarter 2004, the carbon range for GRO was changed from C6-C10 to C4-C12.
l = GRO analyzed by EPA Method 8015B
*The data within this table collected prior to June 2002 was provided to URS by Atlantic Richfield Company and their previous consultants. URS has not verified the accuracy of this information.

## Table 2

### Fuel Additives Analytical Data

Former BP Station No. 11102
100 MacArthur Blvd., Oakland, CA

| Well Number | Date Sampled | Ethanol (µg/L) | TBA (µg/L) | MtBE (µg/L) | DIPE (µg/L) | EtBE (µg/L) | TAME (µg/L) | 1,2-DCA (µg/L) | EDB (µg/L) |
|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 7/14/2003 | <2000 | 2,700 | 940 | <20 | <20 | <20 | -- | -- |
| | 01/14/2004 | <1,000 | 2,500 | 220 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| | 04/23/2004 | <500 | 2,500 | 150 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 |
| | **07/01/2004** | **<500** | **2,000** | **96** | **<2.5** | **<2.5** | **<2.5** | **<2.5** | **<2.5** |
| MW-2 | 7/14/2003 | <100000 | <20000 | 24,000 | <1000 | <1000 | <1000 | -- | -- |
| | 01/14/2004 | <100,000 | <20,000 | 21,000 | <500 | <500 | <500 | <500 | <500 |
| | 04/23/2004 | <50,000 | 11,000 | 22,000 | <250 | <250 | 420 | <250 | <250 |
| | **07/01/2004** | **<10,000** | **2,900** | **5,200** | **<50** | **<50** | **110** | **<50** | **<50** |
| MW-3 | 7/14/2003 | <100 | <20 | 28 | <1.0 | <1.0 | <1.0 | -- | -- |
| | 01/14/2004 | <1,000 | <200 | 380 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| | 04/23/2004 | <5,000 | <1,000 | 560 | <25 | <25 | <25 | <25 | <25 |
| | **07/01/2004** | **<100** | **<20** | **48** | **<0.50** | **<0.50** | **0.52** | **<0.50** | **<0.50** |

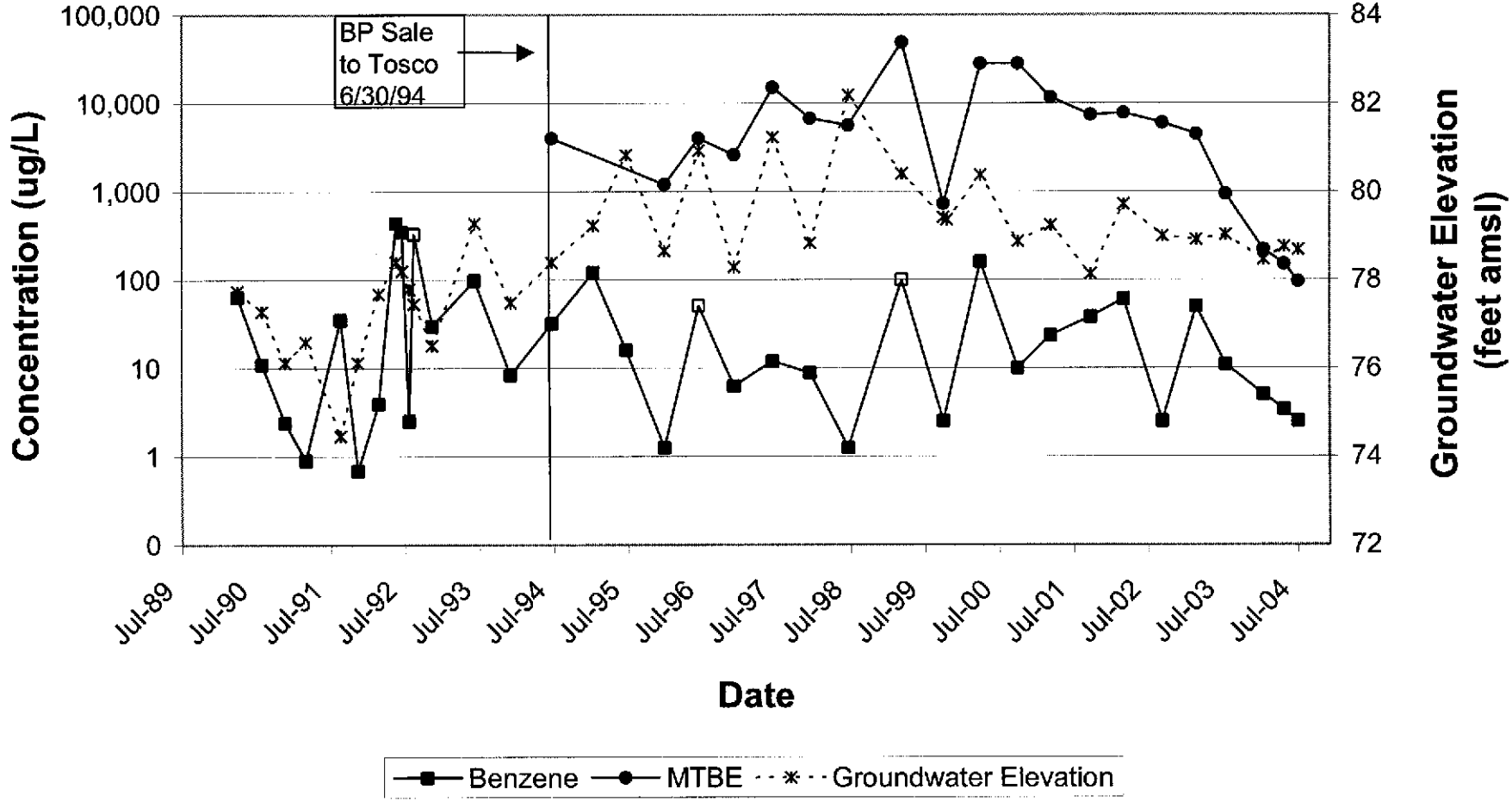
## Table 2

### Fuel Additives Analytical Data

Former BP Station No. 11102
100 MacArthur Blvd., Oakland, CA

Abbreviations:
ug/L = Micrograms per liter
< = Not detected at or above laboratory detection limit
TBA = tert-Butyl Alcohol
MtBE = Methyl tert butyl ether
DIPE = Di-Isopropyl Ether
EtBE = Ethyl t-Butyl Ether
TAME = tert-Amyl Methyl Ether

# Concentration and Water Level Trends
# Well MW-1

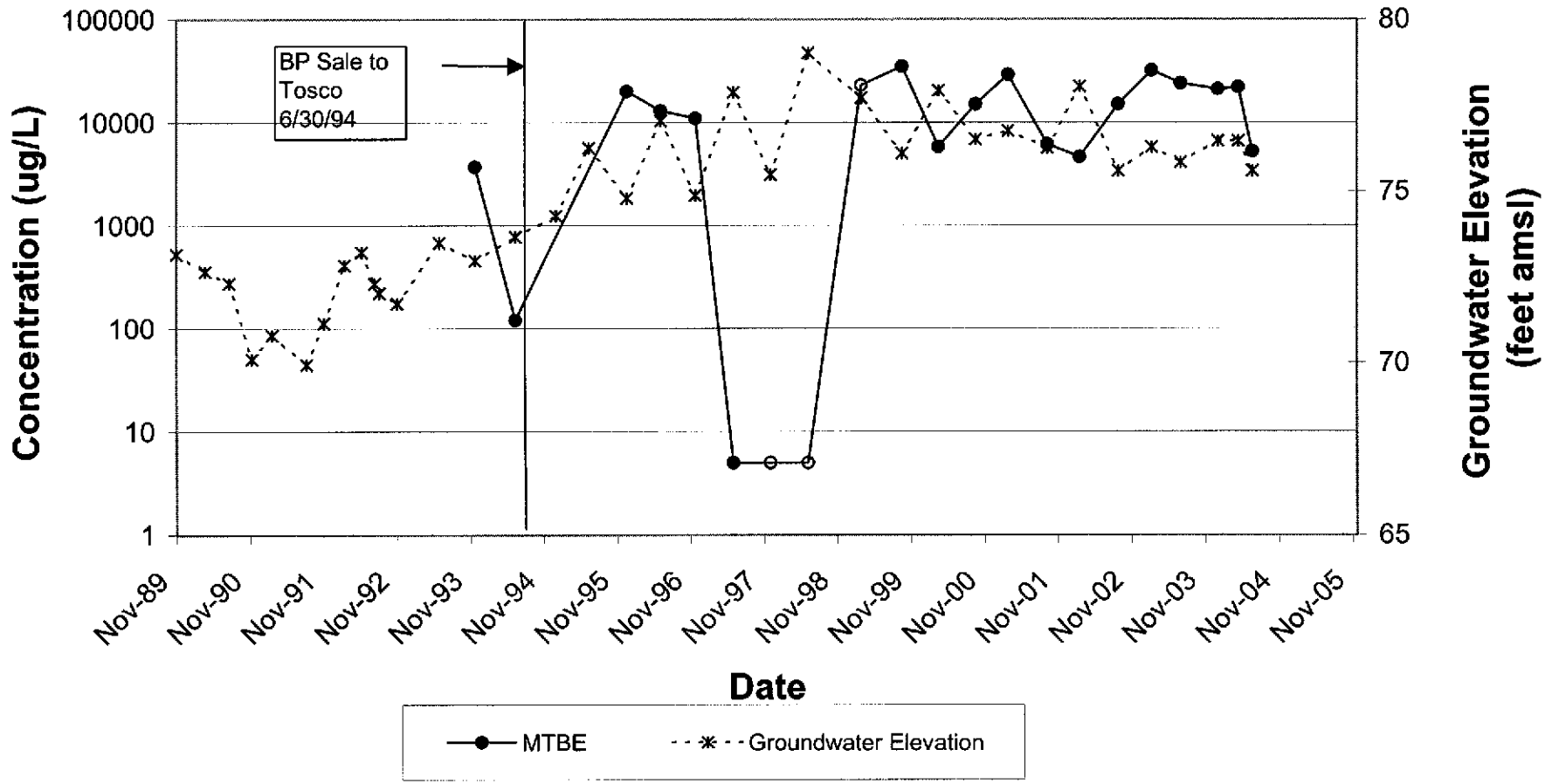



Former BP Service Station #11102
100 MacArthur Blvd
Oakland, CA

**Chart 1**

*MW-1 Chart 1*

# Concentration and Water Level Trends
# Well MW-2

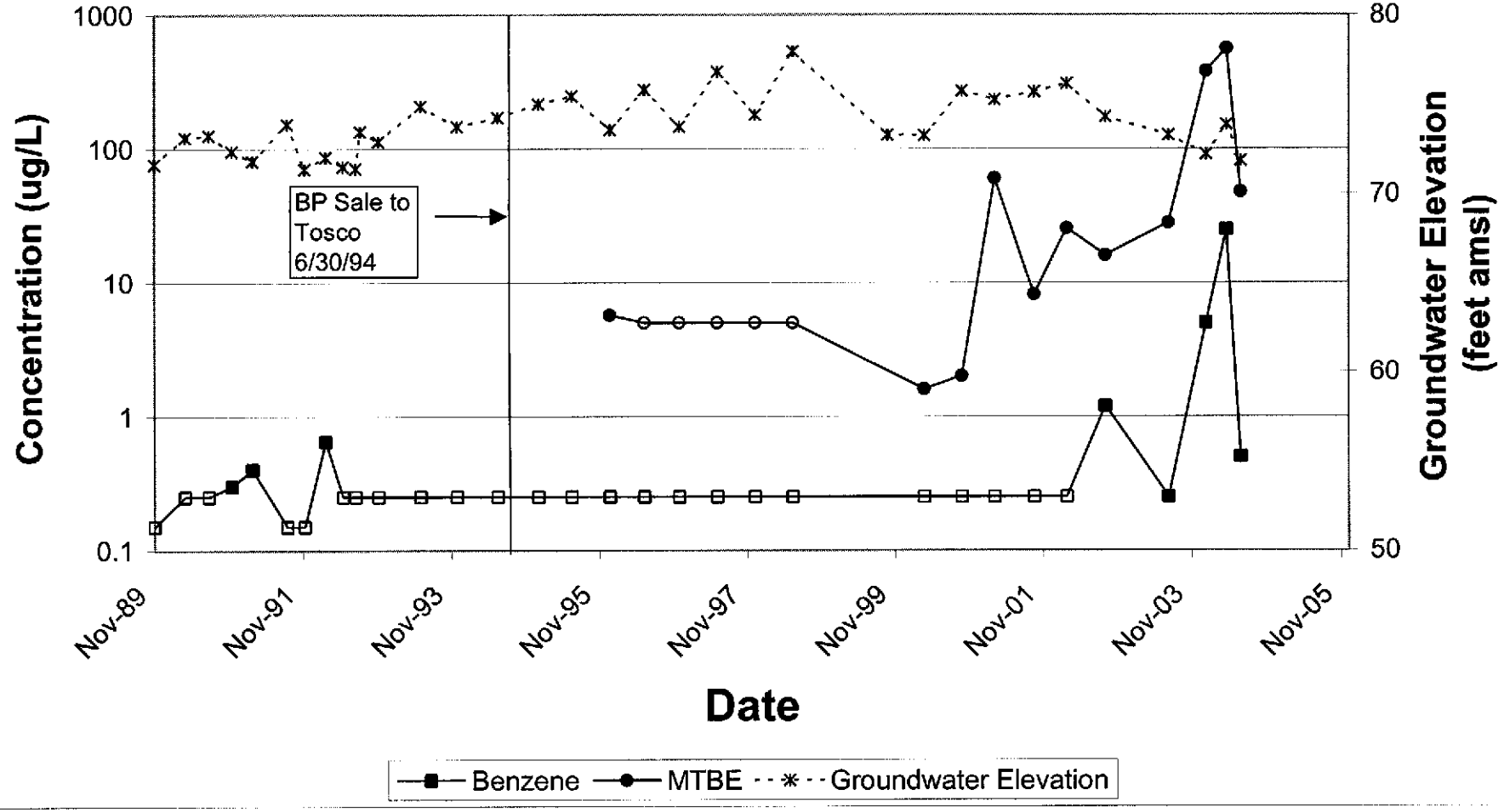



Former BP Service Station #11102
100 MacArthur Blvd
Oakland, CA

*MW-2 Chart 2*

**Chart 2**

# Concentration and Water Level Trends
# Well MW-3




BP Oil Site No. 11102
100 MacArthur Boulevard
Oakland, California

**Chart 3**

*MW-3 Chart 3*

# ATTACHMENT A

# FIELD PROCEDURES AND FIELD DATA SHEETS

# FIELD PROCEDURES

## Sampling Procedures

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

# WELL GAUGING DATA

Project # 040701-PC1 Date 7/1/04 Client BP 11102

Site 100 Macarthur Blvd., Oakland

| Well ID | Well Size (in.) | Sheen / Odor | Depth to Immiscible Liquid (ft.) | Thickness of Immiscible Liquid (ft.) | Volume of Immiscibles Removed (ml) | Depth to water (ft.) | Depth to well bottom (ft.) | Survey Point: TOB or TOC | |
|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 4 | | | | | 11.52 | 32.01 | ↓ | |
| MW-2 | 4 | | | | | 12.32 | 32.31 ~~15.98~~ | | |
| MW-3 | 4 | | | | | 15.19 | 32.45 | | |
| | | | | | | | | | |
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# ARCO / BP WELL MONITORING DATA SHEET

| | |
|---|---|
| BTS #: 040701-PC1 | Station # BP 11102 |
| Sampler: PC | Date: 7/1/04 |
| Well I.D.: MW-1 | Well Diameter: 2 3 (4) 6 8 ___ |
| Total Well Depth: 32.01 | Depth to Water: 11.52 |
| Depth to Free Product: | Thickness of Free Product (feet): |
| Referenced to: (PVC) Grade | D.O. Meter (if req'd): YSI HACH |

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

Purge Method: Bailer / Disposable Bailer / Positive Air Displacement / *Electric Submersible / Extraction Pump / Other: ___

Sampling Method: Bailer / *Disposable Bailer / Extraction Port / Other: ___

Top of Screen: ___

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

13.3 (1 Case Volume (Gals.)) X 3 (Specified Volumes) = ~~40~~ 39.9 Gals. (Calculated Volume)

| Time | Temp (°F) | pH | Conductivity (mS or µS) | Gals. Removed | Observations |
|---|---|---|---|---|---|
| 948 | 66.0 | 6.5 | 724 | 13.5 | clear |
| 952 | 66.4 | 6.3 | 801 | 27 | ↓ |
| 955 | 64.9 | 6.0 | 798 | ~~39~~ 40.5 | |
| | | | | | |
| | | | | | |

Did well dewater? Yes (No) Gallons actually evacuated: 40.5

Sampling Time: 1008 Sampling Date: 7/1/04

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

Analyzed for: GRO BTEX MTBE DRO Other: Oxys, EDB, 1,2-DCA & Ethanol by 8260

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

# ARCO / BP WELL MONITORING DATA SHEET

| | |
|---|---|
| BTS #: 040701-PC1 | Station # BP 11102 |
| Sampler: PC | Date: 7/1/04 |
| Well I.D.: MW-2 | Well Diameter: 2 3 (4) 6 8 ____ |
| Total Well Depth: 32.31 | Depth to Water: 13.32 |
| Depth to Free Product: | Thickness of Free Product (feet): |
| Referenced to: PVC Grade | D.O. Meter (if req'd): YSI HACH |

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

Purge Method: Bailer / Disposable Bailer / Positive Air Displacement / (X) Electric Submersible / Extraction Pump / Other: _____

Sampling Method: Bailer / (X) Disposable Bailer / Extraction Port / Other: _____

Top of Screen: _____

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

13 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 39 (Calculated Volume) Gals.

| Time | Temp (°F) | pH | Conductivity (mS or µS) | Gals. Removed | Observations |
|---|---|---|---|---|---|
| 1018 | 68.0 | ~~6~~ 5.5 | 620 | 13 | clear |
| 1021 | 68.1 | 5.8 | 728 | 26 | ↓ |
| 1025 | 67.1 | ~~5~~ 5.6 | 800 | 39 | |
| | | | | | |
| | | | | | |

Did well dewater? Yes (No) Gallons actually evacuated: 39

Sampling Time: 1035 Sampling Date: 7/1/04

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

Analyzed for: ~~GRO~~ ~~BTEX~~ MTBE DRO Other: Oxy's, EDB, 1,2-DCA & Ethanol by 8260

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

# ARCO / BP WELL MONITORING DATA SHEET

| | |
|---|---|
| BTS #: 040701-RC1 | Station # 1402 BP |
| Sampler: PC | Date: 7/1/04 |
| Well I.D.: MW-3 | Well Diameter: 2 3 (4) 6 8 ____ |
| Total Well Depth: 32.45 | Depth to Water: 15.19 |
| Depth to Free Product: | Thickness of Free Product (feet): |
| Referenced to: PVC Grade | D.O. Meter (if req'd): YSI HACH |

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

Purge Method: Bailer / Disposable Bailer / Positive Air Displacement / (X) Electric Submersible / Extraction Pump / Other: _____

Sampling Method: Bailer / (X) Disposable Bailer / Extraction Port / Other: _____

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

11.2 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 33.6 (Calculated Volume) Gals.

| Time | Temp (°F) | pH | Conductivity (mS or µS) | Gals. Removed | Observations |
|---|---|---|---|---|---|
| 924 | 68.1 | 6.3 | 712 | 11.2 | clear |
| 926 | 68.5 | 6.4 | 649 | 22.4 | ↓ |
| 928 | 67.7 | 6.4 | 678 | 33.6 | |
| | | | | | |
| | | | | | |

Did well dewater? Yes (No) Gallons actually evacuated: 33.6

Sampling Time: 938 Sampling Date: 7/1/04

Sample I.D.: MW-3 Laboratory: Pace (Spectra) Other _____

Analyzed for: (GRO) (BTEX) MTBE DRO Other: Oxys, EDB, 1,2-DCA, Ethanol by 8260

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

# 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:

BP 11102
Station #

100 MacArthur Blvd., Oakland
Station Address

Total Gallons Collected From Groundwater Monitoring Wells:

110

added equip. rinse water 10

any other adjustments

**TOTAL GALS. RECOVERED** 120

loaded onto BTS vehicle # 22

BTS event # 070701-PC1

time 1000

date 7/1/04

signature

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

REC'D AT BTS

time

date

unloaded by

signature

# ATTACHMENT B

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

# LABORATORY PROCEDURES

## Laboratory Procedures

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

Sequoia
Analytical

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

19 July, 2004

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

RE: BP Heritage #11102, Oakland, CA
Work Order: MNG0067

Enclosed are the results of analyses for samples received by the laboratory on 07/02/04 13:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lisa Race
Senior Project Manager

CA ELAP Certificate #1210

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| | | |
|---|---|---|
| URS Corporation [Arco] | Project: BP Heritage #11102, Oakland, CA | MNG0067 |
| 1333 Broadway, Suite 800 | Project Number: N/P | **Reported:** |
| Oakland CA, 94612 | Project Manager: Leonard Niles | 07/19/04 16:19 |

**ANALYTICAL REPORT FOR SAMPLES**

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| MW-1 | MNG0067-01 | Water | 07/01/04 10:08 | 07/02/04 13:15 |
| MW-2 | MNG0067-02 | Water | 07/01/04 10:35 | 07/02/04 13:15 |
| MW-3 | MNG0067-03 | Water | 07/01/04 09:38 | 07/02/04 13:15 |
| TB-111027012004 | MNG0067-04 | Water | 07/01/04 00:00 | 07/02/04 13:15 |

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

These samples were received with intact custody seals.

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|---|---|---|
| URS Corporation [Arco] | Project: BP Heritage #11102, Oakland, CA | MNG0067 |
| 1333 Broadway, Suite 800 | Project Number: N/P | **Reported:** |
| Oakland CA, 94612 | Project Manager: Leonard Niles | 07/19/04 16:19 |

## Volatile Organic Compounds by EPA Method 8260B

## Sequoia Analytical - Morgan Hill

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **MW-1 (MNG0067-01) Water Sampled: 07/01/04 10:08 Received: 07/02/04 13:15** | | | | | | | | | |
| tert-Amyl methyl ether | ND | 2.5 | ug/l | 5 | 4G12010 | 07/12/04 | 07/12/04 | EPA 8260B | |
| Benzene | ND | 2.5 | " | " | " | " | " | " | |
| **tert-Butyl alcohol** | **2000** | 100 | " | " | " | " | " | " | |
| Di-isopropyl ether | ND | 2.5 | " | " | " | " | " | " | |
| 1,2-Dibromoethane (EDB) | ND | 2.5 | " | " | " | " | " | " | |
| 1,2-Dichloroethane | ND | 2.5 | " | " | " | " | " | " | |
| Ethanol | ND | 500 | " | " | " | " | " | " | |
| Ethyl tert-butyl ether | ND | 2.5 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 2.5 | " | " | " | " | " | " | |
| **Methyl tert-butyl ether** | **96** | 2.5 | " | " | " | " | " | " | |
| Toluene | ND | 2.5 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 2.5 | " | " | " | " | " | " | |
| **Gasoline Range Organics (C4-C12)** | **360** | 250 | " | " | " | " | " | " | |
| *Surrogate: 1,2-Dichloroethane-d4* | | *116 %* | *78-129* | | " | " | " | " | |
| **MW-2 (MNG0067-02) Water Sampled: 07/01/04 10:35 Received: 07/02/04 13:15** | | | | | | | | | |
| **tert-Amyl methyl ether** | **110** | 50 | ug/l | 100 | 4G12010 | 07/12/04 | 07/12/04 | EPA 8260B | |
| Benzene | ND | 50 | " | " | " | " | " | " | |
| **tert-Butyl alcohol** | **2900** | 2000 | " | " | " | " | " | " | |
| Di-isopropyl ether | ND | 50 | " | " | " | " | " | " | |
| 1,2-Dibromoethane (EDB) | ND | 50 | " | " | " | " | " | " | |
| 1,2-Dichloroethane | ND | 50 | " | " | " | " | " | " | |
| Ethanol | ND | 10000 | " | " | " | " | " | " | |
| Ethyl tert-butyl ether | ND | 50 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 50 | " | " | " | " | " | " | |
| **Methyl tert-butyl ether** | **5200** | 50 | " | " | " | " | " | " | |
| Toluene | ND | 50 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 50 | " | " | " | " | " | " | |
| Gasoline Range Organics (C4-C12) | ND | 5000 | " | " | " | " | " | " | |
| *Surrogate: 1,2-Dichloroethane-d4* | | *104 %* | *78-129* | | " | " | " | " | |

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|---|---|---|
| URS Corporation [Arco] | Project: BP Heritage #11102, Oakland, CA | MNG0067 |
| 1333 Broadway, Suite 800 | Project Number: N/P | **Reported:** |
| Oakland CA, 94612 | Project Manager: Leonard Niles | 07/19/04 16:19 |

## Volatile Organic Compounds by EPA Method 8260B

### Sequoia Analytical - Morgan Hill

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **MW-3 (MNG0067-03) Water Sampled: 07/01/04 09:38 Received: 07/02/04 13:15** | | | | | | | | | |
| **tert-Amyl methyl ether** | **0.52** | 0.50 | ug/l | 1 | 4G12010 | 07/12/04 | 07/12/04 | EPA 8260B | |
| Benzene | ND | 0.50 | " | " | " | " | " | " | |
| tert-Butyl alcohol | ND | 20 | " | " | " | " | " | " | |
| Di-isopropyl ether | ND | 0.50 | " | " | " | " | " | " | |
| 1,2-Dibromoethane (EDB) | ND | 0.50 | " | " | " | " | " | " | |
| 1,2-Dichloroethane | ND | 0.50 | " | " | " | " | " | " | |
| Ethanol | ND | 100 | " | " | " | " | " | " | |
| Ethyl tert-butyl ether | ND | 0.50 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.50 | " | " | " | " | " | " | |
| **Methyl tert-butyl ether** | **48** | 0.50 | " | " | " | " | " | " | |
| Toluene | ND | 0.50 | " | " | " | " | " | " | |
| **Xylenes (total)** | **0.50** | 0.50 | " | " | " | " | " | " | |
| Gasoline Range Organics (C4-C12) | ND | 50 | " | " | " | " | " | " | |
| *Surrogate: 1,2-Dichloroethane-d4* | | *106 %* | | *78-129* | " | " | " | " | |

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|---|---|---|
| URS Corporation [Arco] | Project: BP Heritage #11102, Oakland, CA | MNG0067 |
| 1333 Broadway, Suite 800 | Project Number: N/P | Reported: |
| Oakland CA, 94612 | Project Manager: Leonard Niles | 07/19/04 16:19 |

# Volatile Organic Compounds by EPA Method 8260B - Quality Control

## Sequoia Analytical - Morgan Hill

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 4G12010 - EPA 5030B P/T** | | | | | | | | | | |
| **Blank (4G12010-BLK1)** | | | | Prepared & Analyzed: 07/12/04 | | | | | | |
| tert-Amyl methyl ether | ND | 0.50 | ug/l | | | | | | | |
| Benzene | ND | 0.50 | " | | | | | | | |
| tert-Butyl alcohol | ND | 20 | " | | | | | | | |
| Di-isopropyl ether | ND | 0.50 | " | | | | | | | |
| 1,2-Dibromoethane (EDB) | ND | 0.50 | " | | | | | | | |
| 1,2-Dichloroethane | ND | 0.50 | " | | | | | | | |
| Ethanol | ND | 100 | " | | | | | | | |
| Ethyl tert-butyl ether | ND | 0.50 | " | | | | | | | |
| Ethylbenzene | ND | 0.50 | " | | | | | | | |
| Methyl tert-butyl ether | ND | 0.50 | " | | | | | | | |
| Toluene | ND | 0.50 | " | | | | | | | |
| Xylenes (total) | ND | 0.50 | " | | | | | | | |
| Gasoline Range Organics (C4-C12) | ND | 50 | " | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *5.05* | | " | *5.00* | | *101* | *78-129* | | | |
| **Laboratory Control Sample (4G12010-BS1)** | | | | Prepared & Analyzed: 07/12/04 | | | | | | |
| tert-Amyl methyl ether | 8.78 | 0.50 | ug/l | 10.0 | | 88 | 56-140 | | | |
| Benzene | 8.85 | 0.50 | " | 10.0 | | 88 | 78-124 | | | |
| tert-Butyl alcohol | 58.1 | 20 | " | 50.0 | | 116 | 0-206 | | | |
| Di-isopropyl ether | 8.09 | 0.50 | " | 10.0 | | 81 | 76-130 | | | |
| 1,2-Dibromoethane (EDB) | 7.95 | 0.50 | " | 10.0 | | 80 | 77-132 | | | |
| 1,2-Dichloroethane | 7.69 | 0.50 | " | 10.0 | | 77 | 77-136 | | | |
| Ethanol | 216 | 100 | " | 200 | | 108 | 31-186 | | | |
| Ethyl tert-butyl ether | 7.72 | 0.50 | " | 10.0 | | 77 | 61-141 | | | |
| Ethylbenzene | 8.28 | 0.50 | " | 10.0 | | 83 | 84-117 | | | QC02 |
| Methyl tert-butyl ether | 7.85 | 0.50 | " | 10.0 | | 78 | 63-137 | | | |
| Toluene | 9.06 | 0.50 | " | 10.0 | | 91 | 78-129 | | | |
| Xylenes (total) | 26.9 | 0.50 | " | 30.0 | | 90 | 83-125 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *4.74* | | " | *5.00* | | *95* | *78-129* | | | |

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| | | |
|---|---|---|
| URS Corporation [Arco] | Project: BP Heritage #11102, Oakland, CA | MNG0067 |
| 1333 Broadway, Suite 800 | Project Number: N/P | **Reported:** |
| Oakland CA, 94612 | Project Manager: Leonard Niles | 07/19/04 16:19 |

# Volatile Organic Compounds by EPA Method 8260B - Quality Control

## Sequoia Analytical - Morgan Hill

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 4G12010 - EPA 5030B P/T** | | | | | | | | | | |
| **Laboratory Control Sample (4G12010-BS2)** | | | | Prepared & Analyzed: 07/12/04 | | | | | | |
| Benzene | 5.40 | 0.50 | ug/l | 6.40 | | 84 | 78-124 | | | |
| Ethylbenzene | 7.27 | 0.50 | " | 6.96 | | 104 | 84-117 | | | |
| Methyl tert-butyl ether | 7.65 | 0.50 | " | 9.92 | | 77 | 63-137 | | | |
| Toluene | 33.8 | 0.50 | " | 29.7 | | 114 | 78-129 | | | |
| Xylenes (total) | 39.8 | 0.50 | " | 33.7 | | 118 | 83-125 | | | |
| Gasoline Range Organics (C4-C12) | 399 | 50 | " | 440 | | 91 | 70-124 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *4.95* | | " | *5.00* | | *99* | *78-129* | | | |
| **Laboratory Control Sample Dup (4G12010-BSD1)** | | | | Prepared & Analyzed: 07/12/04 | | | | | | |
| tert-Amyl methyl ether | 9.58 | 0.50 | ug/l | 10.0 | | 96 | 56-140 | 9 | 12 | |
| Benzene | 9.02 | 0.50 | " | 10.0 | | 90 | 78-124 | 2 | 12 | |
| tert-Butyl alcohol | 44.3 | 20 | " | 50.0 | | 89 | 0-206 | 27 | 22 | QC21 |
| Di-isopropyl ether | 8.60 | 0.50 | " | 10.0 | | 86 | 76-130 | 6 | 9 | |
| 1,2-Dibromoethane (EDB) | 8.94 | 0.50 | " | 10.0 | | 89 | 77-132 | 12 | 9 | QC21 |
| 1,2-Dichloroethane | 8.12 | 0.50 | " | 10.0 | | 81 | 77-136 | 5 | 13 | |
| Ethanol | 185 | 100 | " | 200 | | 92 | 31-186 | 15 | 37 | |
| Ethyl tert-butyl ether | 8.42 | 0.50 | " | 10.0 | | 84 | 61-141 | 9 | 9 | |
| Ethylbenzene | 8.05 | 0.50 | " | 10.0 | | 80 | 84-117 | 3 | 10 | QC02 |
| Methyl tert-butyl ether | 8.92 | 0.50 | " | 10.0 | | 89 | 63-137 | 13 | 13 | |
| Toluene | 8.97 | 0.50 | " | 10.0 | | 90 | 78-129 | 1 | 10 | |
| Xylenes (total) | 25.7 | 0.50 | " | 30.0 | | 86 | 83-125 | 5 | 11 | |
| *Surrogate: 1,2-Dichloroethane-d4* | *5.14* | | " | *5.00* | | *103* | *78-129* | | | |
| **Matrix Spike (4G12010-MS1)** | **Source: MNG0055-06** | | | Prepared & Analyzed: 07/12/04 | | | | | | |
| Benzene | 8.79 | 0.50 | ug/l | 6.40 | 3.8 | 78 | 78-124 | | | |
| Ethylbenzene | 7.10 | 0.50 | " | 6.96 | 0.29 | 98 | 84-117 | | | |
| Methyl tert-butyl ether | 28.4 | 0.50 | " | 9.92 | 15 | 135 | 63-137 | | | |
| Toluene | 34.3 | 0.50 | " | 29.7 | 0.13 | 115 | 78-129 | | | |
| Xylenes (total) | 38.8 | 0.50 | " | 33.7 | ND | 115 | 83-125 | | | |
| Gasoline Range Organics (C4-C12) | 835 | 50 | " | 440 | 500 | 76 | 70-124 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *5.32* | | " | *5.00* | | *106* | *78-129* | | | |

Sequoia Analytical

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FAX (408) 782-6308
www.sequoialabs.com

| | | |
|---|---|---|
| URS Corporation [Arco] | Project: BP Heritage #11102, Oakland, CA | MNG0067 |
| 1333 Broadway, Suite 800 | Project Number: N/P | **Reported:** |
| Oakland CA, 94612 | Project Manager: Leonard Niles | 07/19/04 16:19 |

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

## Sequoia Analytical - Morgan Hill

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 4G12010 - EPA 5030B P/T** | | | | | | | | | | |
| **Matrix Spike Dup (4G12010-MSD1)** | **Source: MNG0055-06** | | | Prepared & Analyzed: 07/12/04 | | | | | | |
| Benzene | 8.64 | 0.50 | ug/l | 6.40 | 3.8 | 76 | 78-124 | 2 | 12 | QM02 |
| Ethylbenzene | 6.99 | 0.50 | " | 6.96 | 0.29 | 96 | 84-117 | 2 | 10 | |
| Methyl tert-butyl ether | 20.0 | 0.50 | " | 9.92 | 15 | 50 | 63-137 | 35 | 13 | QC20, QM02 |
| Toluene | 33.8 | 0.50 | " | 29.7 | 0.13 | 113 | 78-129 | 1 | 10 | |
| Xylenes (total) | 38.0 | 0.50 | " | 33.7 | ND | 113 | 83-125 | 2 | 11 | |
| Gasoline Range Organics (C4-C12) | 731 | 50 | " | 440 | 500 | 52 | 70-124 | 13 | 20 | QM02 |
| *Surrogate: 1,2-Dichloroethane-d4* | *5.60* | | " | *5.00* | | *112* | *78-129* | | | |

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| | | |
|---|---|---|
| URS Corporation [Arco] | Project: BP Heritage #11102, Oakland, CA | MNG0067 |
| 1333 Broadway, Suite 800 | Project Number: N/P | Reported: |
| Oakland CA, 94612 | Project Manager: Leonard Niles | 07/19/04 16:19 |

**Notes and Definitions**

| | |
|---|---|
| QM02 | The spike recovery was below control limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery. |
| QC21 | The RPD result exceeded the control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data. |
| QC20 | The RPD was outside control limits. The results may still be useful for their intended purpose. |
| QC02 | The percent recovery was below the control limits. The sample results may still be useful for their intended purpose. |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |

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| | | |
|---|---|---|
| URS Corporation [Arco] | Project: BP Heritage #11102, Oakland, CA | MNG0067 |
| 1333 Broadway, Suite 800 | Project Number: N/P | **Reported:** |
| Oakland CA, 94612 | Project Manager: Leonard Niles | 07/19/04 16:19 |

**EDF Notes and Definitions**

| Qualifier | LNote | LNote description |
|---|---|---|
| QM02 | LN | MS and/or MSD below acceptance limits. See Blank Spike(LCS). |
| QC21 | RB | RPD exceeded method control limit; % recoveries within limits. |
| QC20 | BA | Relative percent difference out of control |
| QC02 | HM | Analyte recovery below established limit |

# Chain of Custody Record

bp

Project Name 11102 GWM
BP BU/GEM CO Portfolio Retail
BP Laboratory Contract Number: Atlantic Richfield Company
Requested Due Date (mm/dd/yy) 14 day TAT
MNG 6067

Date: 7/1/04

| | |
|---|---|
| On-site Time: 830 | Temp: 60°F |
| Off- site Time: 1050 | Temp: 60°F |
| Sky Conditions: cloudy | |
| Meteorological Events: none | |
| Wind Speed: | Direction: |

| | |
|---|---|
| Send To: | |
| Lab Name: SEQUOIA | |
| Lab Address: 885 Jarvis Dr. | |
| Morgan Hill, CA 95037 | |
| Lab PM Lisa Race | |
| Tele/Fax: 408-776-9600 / 408-782-6308 | |
| Report Type & QC Level: 1 Send EDF Reports | |
| BP/GEM Account No.: 400-6-21124 | |

| | |
|---|---|
| BP/GEM Facility No.: | 11102 |
| BP/GEM Facility Address: | 100 MCARTHUR BLVD., OAKLAND, CA |
| Site ID No. | 11102 |
| Site Lat/Long: | |
| California Global ID #: | T0600100908 |
| BP/GEM PM Contact: | PAUL SUPPLE |
| Address: | P.O. Box 6549 |
| | Moraga, CA 94570 |
| Tele/Fax: | 925-299-8891/925-299-8872 |

| | |
|---|---|
| Consultant/Contractor: | URS |
| Address: | 1333 Broadway, Suite 800 |
| | Oakland, CA 94612 |
| e-mail EDD: | donna cosper@URSCorp.com |
| Consultant/Contractor Project No.: | |
| Consultant Tele/Fax: | 510-893-3600/510-874-3268 |
| Consultant/Contractor PM: | Leonard Niles |
| Invoice to: | Consultant/Contractor or BP/GEM (Circle one) |
| BP/GEM Work Release No: | |

Lab Bottle Order No:

| Item No. | Sample Description | Time | Matrix: Soil/Solid | Matrix: Water/Liquid | Matrix: Sediments | Matrix: Air | Laboratory No. | No. of containers | Preservatives: Unpreserved | Preservatives: $H_2SO_4$ | Preservatives: $HNO_3$ | Preservatives: HCl | Requested Analysis: GRO / BTEX | Requested Analysis: DRO w/SGC (8015) | Requested Analysis: MTBE (8021) | Requested Analysis: MTBE (8260) | Requested Analysis: MTBE, TAME, ETBE DIPE, TBA (8260) | Requested Analysis: 1,2-DCA & EDB (8260) | Requested Analysis: Ethanol (8260) | Sample Point Lat/Long and Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MW-1 | 1008 | | X | | | 01 | 3 | | | | X | X | | | | X | X | X | |
| 2 | MW-2 | 1035 | | X | | | 02 | 3 | | | | X | X | | | | X | X | X | |
| 3 | MW-3 | 938 | | X | | | 03 | 3 | | | | X | X | | | | X | X | X | |
| 4 | TB-11102 070204 | - | | X | | | 04 | 2 | | | | | | | | | | | | on hold |
| 5 | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | |

| Sampler's Name: | Peter Cornish | Relinquished By / Affiliation | Date | Time | Accepted By / Affiliation | Date | Time |
|---|---|---|---|---|---|---|---|
| Sampler's Company: | Blaine Tech | | 7/2/04 | 1150 | | 7/2/04 | 1150 |
| Shipment Date: | | | 7/2/04 | 1315 | | 7/2/04 | 03:15 |
| Shipment Method: | | | | | | | |
| Shipment Tracking No: | | | | | | | |

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

Seals In Place Yes X No ___ Temperature Blank Yes X No ___ Cooler Temperature on Receipt 6 °F Trip Blank Yes X No ___

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

BP COC Rev. 1 2/5/02

# ATTACHMENT C

# EDCC REPORT AND EDF/GEOWELL SUBMITTAL CONFIRMATION

## Error Summary Log

*08/19/04*

EDF 1.2i All files present in deliverable.

| | |
|---|---|
| Laboratory: | Sequoia Analytical Laboratories, Inc., Morgan Hill, CA |
| Project Name: | BP Heritage #11102, Oakla |
| Work Order Number: | MNG0067 |
| Global ID: | T0600100908 |
| Lab Report Number: | MNG0067071920041619 |

# Report Summary

| Labreport | Sampid | Labsampid | Mtrx | QC | Anmcode | Exmcode | Logdate | Extdate | Anadate | Lablotctl | Run | Sub |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MNG0067071920041619 | MW-1 | MNG006701 | W | CS | 8260FA | SW5030B | 07/01/04 | 07/12/04 | 07/12/04 | 4G12010 | 1 | |
| MNG0067071920041619 | MW-2 | MNG006702 | W | CS | 8260FA | SW5030B | 07/01/04 | 07/12/04 | 07/12/04 | 4G12010 | 1 | |
| MNG0067071920041619 | MW-3 | MNG006703 | W | CS | 8260FA | SW5030B | 07/01/04 | 07/12/04 | 07/12/04 | 4G12010 | 1 | |
| | | MNG005506 | W | NC | 8260FA | SW5030B | / / | 07/12/04 | 07/12/04 | 4G12010 | 1 | |
| | | 4G12010BSD1 | WQ | BD1 | 8260FA | SW5030B | / / | 07/12/04 | 07/12/04 | 4G12010 | 1 | |
| | | 4G12010BS1 | WQ | BS1 | 8260FA | SW5030B | / / | 07/12/04 | 07/12/04 | 4G12010 | 1 | |
| | | 4G12010BS2 | WQ | BS2 | 8260FA | SW5030B | / / | 07/12/04 | 07/12/04 | 4G12010 | 1 | |
| | | 4G12010BLK1 | WQ | LB1 | 8260FA | SW5030B | / / | 07/12/04 | 07/12/04 | 4G12010 | 1 | |
| | | 4G12010MS1 | W | MS1 | 8260FA | SW5030B | / / | 07/12/04 | 07/12/04 | 4G12010 | 1 | |
| | | 4G12010MSD1 | W | SD1 | 8260FA | SW5030B | / / | 07/12/04 | 07/12/04 | 4G12010 | 1 | |

# EDFSAMP: Error Summary Log

*08/19/04*

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

# EDFTEST: Error Summary Log

*08/19/04*

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

# EDFRES: Error Summary Log

*08/19/04*

| Error type | Labsampid | Qccode | Matrix | Anmcode | Pvccode | Anadate | Run number | Parlabel |
|---|---|---|---|---|---|---|---|---|
| Warning: extra parameter | 4G12010MS1 | MS1 | W | 8260FA | PR | 07/12/04 | 1 | BZ |
| Warning: extra parameter | 4G12010MS1 | MS1 | W | 8260FA | PR | 07/12/04 | 1 | BZME |
| Warning: extra parameter | 4G12010MS1 | MS1 | W | 8260FA | PR | 07/12/04 | 1 | DCA12D4 |
| Warning: extra parameter | 4G12010MS1 | MS1 | W | 8260FA | PR | 07/12/04 | 1 | EBZ |
| Warning: extra parameter | 4G12010MS1 | MS1 | W | 8260FA | PR | 07/12/04 | 1 | GROC4C12 |
| Warning: extra parameter | 4G12010MS1 | MS1 | W | 8260FA | PR | 07/12/04 | 1 | XYLENES |
| Warning: extra parameter | 4G12010MSD1 | SD1 | W | 8260FA | PR | 07/12/04 | 1 | BZ |
| Warning: extra parameter | 4G12010MSD1 | SD1 | W | 8260FA | PR | 07/12/04 | 1 | BZME |
| Warning: extra parameter | 4G12010MSD1 | SD1 | W | 8260FA | PR | 07/12/04 | 1 | DCA12D4 |
| Warning: extra parameter | 4G12010MSD1 | SD1 | W | 8260FA | PR | 07/12/04 | 1 | EBZ |
| Warning: extra parameter | 4G12010MSD1 | SD1 | W | 8260FA | PR | 07/12/04 | 1 | GROC4C12 |
| Warning: extra parameter | 4G12010MSD1 | SD1 | W | 8260FA | PR | 07/12/04 | 1 | XYLENES |
| Warning: extra parameter | MNG005506 | NC | W | 8260FA | PR | 07/12/04 | 1 | BZ |
| Warning: extra parameter | MNG005506 | NC | W | 8260FA | PR | 07/12/04 | 1 | BZME |
| Warning: extra parameter | MNG005506 | NC | W | 8260FA | PR | 07/12/04 | 1 | DCA12D4 |
| Warning: extra parameter | MNG005506 | NC | W | 8260FA | PR | 07/12/04 | 1 | EBZ |
| Warning: extra parameter | MNG005506 | NC | W | 8260FA | PR | 07/12/04 | 1 | GROC4C12 |
| Warning: extra parameter | MNG005506 | NC | W | 8260FA | PR | 07/12/04 | 1 | XYLENES |
| Warning: extra parameter | MNG006701 | CS | W | 8260FA | PR | 07/12/04 | 1 | BZ |
| Warning: extra parameter | MNG006701 | CS | W | 8260FA | PR | 07/12/04 | 1 | BZME |
| Warning: extra parameter | MNG006701 | CS | W | 8260FA | PR | 07/12/04 | 1 | DCA12D4 |
| Warning: extra parameter | MNG006701 | CS | W | 8260FA | PR | 07/12/04 | 1 | EBZ |
| Warning: extra parameter | MNG006701 | CS | W | 8260FA | PR | 07/12/04 | 1 | GROC4C12 |
| Warning: extra parameter | MNG006701 | CS | W | 8260FA | PR | 07/12/04 | 1 | XYLENES |
| Warning: extra parameter | MNG006702 | CS | W | 8260FA | PR | 07/12/04 | 1 | BZ |

| Error type | Labsampid | Qccode | Matrix | Anmcode | Pvccode | Anadate | Run number | Parlabel |
|---|---|---|---|---|---|---|---|---|
| Warning: extra parameter | MNG006702 | CS | W | 8260FA | PR | 07/12/04 | 1 | BZME |
| Warning: extra parameter | MNG006702 | CS | W | 8260FA | PR | 07/12/04 | 1 | DCA12D4 |
| Warning: extra parameter | MNG006702 | CS | W | 8260FA | PR | 07/12/04 | 1 | EBZ |
| Warning: extra parameter | MNG006702 | CS | W | 8260FA | PR | 07/12/04 | 1 | GROC4C12 |
| Warning: extra parameter | MNG006702 | CS | W | 8260FA | PR | 07/12/04 | 1 | XYLENES |
| Warning: extra parameter | MNG006703 | CS | W | 8260FA | PR | 07/12/04 | 1 | BZ |
| Warning: extra parameter | MNG006703 | CS | W | 8260FA | PR | 07/12/04 | 1 | BZME |
| Warning: extra parameter | MNG006703 | CS | W | 8260FA | PR | 07/12/04 | 1 | DCA12D4 |
| Warning: extra parameter | MNG006703 | CS | W | 8260FA | PR | 07/12/04 | 1 | EBZ |
| Warning: extra parameter | MNG006703 | CS | W | 8260FA | PR | 07/12/04 | 1 | GROC4C12 |
| Warning: extra parameter | MNG006703 | CS | W | 8260FA | PR | 07/12/04 | 1 | XYLENES |
| Warning: extra parameter | 4G12010BLK1 | LB1 | WQ | 8260FA | PR | 07/12/04 | 1 | BZ |
| Warning: extra parameter | 4G12010BLK1 | LB1 | WQ | 8260FA | PR | 07/12/04 | 1 | BZME |
| Warning: extra parameter | 4G12010BLK1 | LB1 | WQ | 8260FA | PR | 07/12/04 | 1 | DCA12D4 |
| Warning: extra parameter | 4G12010BLK1 | LB1 | WQ | 8260FA | PR | 07/12/04 | 1 | EBZ |
| Warning: extra parameter | 4G12010BLK1 | LB1 | WQ | 8260FA | PR | 07/12/04 | 1 | GROC4C12 |
| Warning: extra parameter | 4G12010BLK1 | LB1 | WQ | 8260FA | PR | 07/12/04 | 1 | XYLENES |
| Warning: extra parameter | 4G12010BS1 | BS1 | WQ | 8260FA | PR | 07/12/04 | 1 | BZ |
| Warning: extra parameter | 4G12010BS1 | BS1 | WQ | 8260FA | PR | 07/12/04 | 1 | BZME |
| Warning: extra parameter | 4G12010BS1 | BS1 | WQ | 8260FA | PR | 07/12/04 | 1 | DCA12D4 |
| Warning: extra parameter | 4G12010BS1 | BS1 | WQ | 8260FA | PR | 07/12/04 | 1 | EBZ |
| Warning: extra parameter | 4G12010BS1 | BS1 | WQ | 8260FA | PR | 07/12/04 | 1 | XYLENES |
| Warning: extra parameter | 4G12010BS2 | BS2 | WQ | 8260FA | PR | 07/12/04 | 1 | BZ |
| Warning: extra parameter | 4G12010BS2 | BS2 | WQ | 8260FA | PR | 07/12/04 | 1 | BZME |
| Warning: extra parameter | 4G12010BS2 | BS2 | WQ | 8260FA | PR | 07/12/04 | 1 | DCA12D4 |
| Warning: extra parameter | 4G12010BS2 | BS2 | WQ | 8260FA | PR | 07/12/04 | 1 | EBZ |
| Warning: extra parameter | 4G12010BS2 | BS2 | WQ | 8260FA | PR | 07/12/04 | 1 | GROC4C12 |
| Warning: extra parameter | 4G12010BS2 | BS2 | WQ | 8260FA | PR | 07/12/04 | 1 | XYLENES |
| Warning: extra parameter | 4G12010BSD1 | BD1 | WQ | 8260FA | PR | 07/12/04 | 1 | BZ |

| Error type | Labsampid | Qccode | Matrix | Anmcode | Pvccode | Anadate | Run number | Parlabel |
|---|---|---|---|---|---|---|---|---|
| Warning: extra parameter | 4G12010BSD1 | BD1 | WQ | 8260FA | PR | 07/12/04 | 1 | BZME |
| Warning: extra parameter | 4G12010BSD1 | BD1 | WQ | 8260FA | PR | 07/12/04 | 1 | DCA12D4 |
| Warning: extra parameter | 4G12010BSD1 | BD1 | WQ | 8260FA | PR | 07/12/04 | 1 | EBZ |
| Warning: extra parameter | 4G12010BSD1 | BD1 | WQ | 8260FA | PR | 07/12/04 | 1 | XYLENES |
| Error: LNOTE has an invalid note | 4G12010MSD1 | SD1 | W | 8260FA | PR | 07/12/04 | 1 | BZ |
| Error: LNOTE has an invalid note | 4G12010MSD1 | SD1 | W | 8260FA | PR | 07/12/04 | 1 | GROC4C12 |
| Error: LNOTE has an invalid note | 4G12010MSD1 | SD1 | W | 8260FA | PR | 07/12/04 | 1 | MTBE |
| Error: LNOTE has an invalid note | 4G12010MSD1 | SD1 | W | 8260FA | PR | 07/12/04 | 1 | MTBE |

# EDFQC: Error Summary Log

*08/19/04*

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

# EDFCL: Error Summary Log

*08/19/04*

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

# Electronic Submittal Information

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**Confirmation Number:** 2416876912
**Date/Time of Submittal:** 8/19/2004 3:52:12 PM
**Facility Global ID:** T0600100908
**Facility Name:** BP
**Submittal Title:** 3rd Qtr 2004 Monitoring Report #11102
**Submittal Type:** GW Monitoring Report

Click here to view the detections report for this upload.

BP
100 MACARTHUR BLVD
OAKLAND, CA 94610

**Regional Board - Case #: 01-0985**
SAN FRANCISCO BAY RWQCB (REGION 2) - **(BG)**
**Local Agency (lead agency) - Case #: 1108**
ALAMEDA COUNTY LOP - **(UNK)**

| CONF # | TITLE | QUARTER |
|---|---|---|
| 2416876912 | 3rd Qtr 2004 Monitoring Report #11102 | Q3 2004 |

| SUBMITTED BY | SUBMIT DATE | STATUS |
|---|---|---|
| Srijesh Thapa | 8/19/2004 | PENDING REVIEW |

## SAMPLE DETECTIONS REPORT

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

## METHOD QA/QC REPORT

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

## QA/QC FOR 8021/8260 SERIES SAMPLES

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

## WATER SAMPLES FOR 8021/8260 SERIES

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

## SOIL SAMPLES FOR 8021/8260 SERIES

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

## FIELD QC SAMPLES

| SAMPLE | COLLECTED | DETECTIONS > REPDL |
|---|---|---|
| QCTB SAMPLES | N | 0 |
| QCEB SAMPLES | N | 0 |
| QCAB SAMPLES | N | 0 |

Logged in as URSCORP-OAKLAND (CONTRACTOR) CONTACT SITE ADMINISTRATOR.

# Electronic Submittal Information

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## UPLOADING A GEO_WELL FILE

**Processing is complete. No errors were found!**
**Your file has been successfully submitted!**

| | |
|---|---|
| **Submittal Title:** | **3rd Qtr 2004 Geowell for #11102** |
| **Submittal Date/Time:** | **8/19/2004 3:52:43 PM** |
| **Confirmation Number:** | **5754241764** |

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