3R - 100

# REPORTS

# DATE:

JAN 2006

XTO ENERGY

3R0100
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JAN 31 2006

Oil Conservation Division
Environmental

January 30, 2006

Mr. Glenn von Gonten
Hydrologist – Groundwater Remediation
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: Annual Groundwater Remediation Reports

Dear Mr. von Gonten:

XTO Energy Inc. (XTO) is submitting the Annual Groundwater Remediation Report in accordance with the NMOCD approved Groundwater Management Plan (GMP). Enclosed are summary reports with analytical data, summary tables, site maps, potentiometric surface diagrams and recommendations/proposed actions for:

- Abrams J #1 3R0100
- Bruington Gas Com B #1 3R0106
- EJ Johnson C #1E 3R0385
- PO Pipken #3E
- Romero Gas Com A #1 3R0123
- Rowland Gas Com #1 3R0124
- Sullivan Gas Com D #1 3R0131
- Valdez A #1E 3R0134

Also enclosed in the third volume of our Annual Report are three sites that meet the closure requirements outlined in the GMP. XTO respectfully requests closure of:

- Armenta Gas Com #1E 3R0394
- Bergin Gas Com #1E 3R0105
- State Gas Com BS #1 3R0127

As we discussed this afternoon, several sites are being reviewed to make sure we have a comprehensive set of reports submitted. An extension will be allowed for reports on the remaining sites to be submitted by April 30, 2006.

Thank you for your review of the reports and allowing some flexibility with this years reporting schedule. If you have any questions please do not hesitate to contact me at (505) 566-7942.

Sincerely,

Lisa Winn
Environmental Specialist
San Juan Division

cc: Mr. Denny Foust, Environmental, NMOCD District III Office, Aztec, NM
Mr. Jeff Blagg, Blagg Engineering Inc.
File – San Juan Groundwater

3R0100

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Oil Conservation Division
Environmental Bureau

**XTO ENERGY INC.**

# ANNUAL GROUNDWATER REMEDIATION REPORT

## 2005

## ABRAMS J #1
## (I) SECTION 29, T29N, R10W, NMPM
## SAN JUAN COUNTY, NEW MEXICO

*PREPARED FOR:*
*MR. GLENN VON GONTEN*
*NEW MEXICO OIL CONSERVATION DIVISION*

*JANUARY 2006*

*PREPARED BY:*
*BLAGG ENGINEERING, INC.*

*Consulting Petroleum / Reclamation Services*
*P.O. Box 87*
*Bloomfield, New Mexico 87413*

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# XTO Energy Inc.
# Abrams J # 1 - Separator & Blow Pits
# NE/4 SE/4 Sec. 29, T29N, R10W

**Pit Closure Dates:** 8/30/93 (Blow); 9/7/93 (Separator)

**Monitor Well Installation Dates:**
9/7/93 (MW #1)
6/4/96 (MW #2 & 3)
7/26/96 (MW #4 & 5)
7/29/96 (MW #6 & 7)
7/30/96 (MW #8 & 9)
8/9/96 (MW #10 & 11)
3/31/97 (MW #8R)
8/23/01 (MW #1R)

**Monitor Well Sampling Dates:** 9/11/93, 6/11/96, 8/16/96, 4/7/97, 6/27/97, 9/15/97, 12/30/97, 1/25/99, 5/11/99, 8/25/99, 11/30/99, 2/22/00, 6/02/00, 8/30/00, 11/30/00, 3/20/01, 5/16/01, 8/30/01, 12/19/01, 2/20/02, 6/26/02

**Historical Information:**

- August 1993 – Hydrocarbon impacted soils excavated at an earthen blow pit by removal of approximately 1,460 cubic yards of soil by Amoco Production Company. Soils composted on site.
- September 1993 – Hydrocarbon impacted soils excavated at an earthen separator pit by removal of approximately 1,730 cubic yards of soil. Soils composted on site. Potential groundwater impacts identified following installation and sampling of monitor well MW1.
- June 1996 – Groundwater monitor wells were installed to further investigate impacts. Free phase product was identified within the source areas of the separator and blow pits.
- July/August 1996 – Additional monitor wells were installed to fully delineate the extent of hydrocarbon impacts to groundwater and soil.
- March 1997 – An air sparge system was installed to aggressively treat impacts.
- April 1997 – Initial startup of the air sparge system.
- January 1998 - XTO Energy Inc. (XTO) acquires the Abrams J #1 from Amoco Production Company. XTO elected to discontinue operation of the air sparge system pending analysis of its effectiveness.
- January 2000 – The air sparge system was reinitiated to enhance the remedial process and a reduction in BTEX constituents was observed.
- June 2002 – Laboratory analysis shows groundwater from monitoring wells 1 – 11 meets New Mexico Water Quality Control Commission (NMWQCC) closure standards and operation of the air sparge system was terminated.
- August 2002 – Laboratory analysis of soil samples collected from borings within the original source areas determine the sparge system effectively remediated soils to below NMOCD closure standards.

## Groundwater Monitor Well Sampling Procedures:

Groundwater samples were collected from site (Figure 1) monitor wells (MW) following US EPA: SW-846 protocol. Samples were collected using new disposable bailers and placed in laboratory supplied containers and stored in a cooler on ice. The samples were delivered to an accredited environmental laboratory according to chain-of-custody procedures. The samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) per US EPA Method 8021B and general water chemistry per US EPA Method 600/4-79-020. Analytical results are summarized in Table 1. Waste generated (groundwater) during monitor well sampling and development was placed in the produced water separator tank located on the well site.

## Water Quality and Gradient Information:

Site monitoring has indicated a groundwater gradient that consistently flows towards the north with a minor west component (Figures 2 – 4).

Monitor well testing prior to July 1999 indicated BTEX constituents exceed closure standards in wells MW 1 (redrilled as MW 1R), MW 3, MW 4, MW 5, MW 6, MW 9 and MW 10. XTO restarted the air sparge system in July 1999 to enhance site groundwater remediation. By June 2002, four (4) quarters of groundwater analytical results were completed and demonstrate BTEX constituents below standards.

## Summary:

XTO proposes quarterly sampling of the groundwater monitoring wells, in accordance with the NMOCD approved Groundwater Management Plan. The quarterly sampling will confirm no rebound of BTEX constituents has occurred since termination of air sparging activities. Upon completion of four quarters below NMWQCC standards, XTO will request closure of this groundwater remediation site.

# TABLE 1

## XTO ENERGY INC. GROUNDWATER LAB RESULTS

SUBMITTED BY BLAGG ENGINEERING, INC.

**ABRAMS J # 1**
**UNIT I, SEC. 29, T29N, R10W**

REVISED DATE: JANUARY 22, 2006
FILENAME: ( AB-2Q-02.WK4 ) NJV

| SAMPLE DATE | MONITOR WELL No: | D.T.W. (ft) | T.D. (ft) | TDS mg/L | COND. umhos | pH | PRODUCT (ft.) | BTEX EPA METHOD 8021 (PPB) Benzene | Toluene | Ethyl Benzene | Total Xylene |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11-Jun-96 | MW #1 | 45.17 | 45.73 | | - | - | 0.58 | - | - | - | - |
| 07-Apr-97 | | - | | | - | - | 1.80 | - | - | - | - |
| 27-Jun-97 | | - | | | - | - | 0.70 | - | - | - | - |
| 15-Sep-97 | | - | | | - | - | 0.01 | - | - | - | - |
| 30-Dec-97 | | 44.59 | | | | | | 748 | 3,280 | 1,050 | 5,490 |
| 25-Jan-99 | | 44.35 | | | 1,200 | 6.9 | | 214 | 3,130 | 707 | 7,090 |
| 02-Jun-00 | | DRY | | | - | - | | - | - | - | - |
| 20-Mar-01 | | DRY | | | - | - | | - | - | - | - |
| 30-Aug-01 | MW #1R | 44.97 | 52.00 | | 900 | 7.2 | | ND | 14 | 16 | 309 |
| 19-Dec-01 | | 44.18 | | | 1,000 | 7.1 | | 0.8 | ND | 31 | 153.4 |
| 20-Feb-02 | | 44.80 | | | 1,000 | 7.2 | | 1.4 | 1.2 | 57 | 452 |
| 26-Jun-02 | | 46.42 | | | 1,000 | 7.4 | | ND | ND | ND | ND |
| 11-Jun-96 | MW #2 | 42.30 | 50.00 | 435 | 600 | 7.5 | | ND | ND | ND | ND |
| 07-Apr-97 | | 42.86 | | 394 | 700 | 7.5 | | ND | ND | ND | ND |
| 19-May-97 | | 43.13 | | | | | | ND | ND | ND | 0.7 |
| 15-Sep-97 | | 42.45 | | | | | | ND | ND | 0.3 | 0.6 |
| 25-Jan-99 | | MONITOR WELL NOT FOUND - PRESUMED DESTROYED | | | | | | | | | |
| 11-Jun-96 | MW #3 | 44.58 | 50.00 | | - | - | 0.33 | - | - | - | - |
| 07-Apr-97 | | - | | | - | - | 1.65 | - | - | - | - |
| 27-Jun-97 | | - | | | - | - | 1.10 | - | - | - | - |
| 15-Sep-97 | | - | | | - | - | 0.01 | - | - | - | - |
| 30-Dec-97 | | 44.11 | | | | | | 78.1 | 891 | 138 | 3,731 |
| 25-Jan-99 | | 43.93 | | | 1,400 | 7.3 | | 18.9 | 123 | 71 | 3,809 |
| 11-May-99 | | 45.00 | | | 1,300 | 6.9 | | 18.3 | 52 | 76.4 | 3,482 |
| 01-Feb-00 | | | | | - | - | 0.05 | - | - | - | - |
| 22-Feb-00 | | | | | - | - | 1.78 | - | - | - | - |
| 02-Jun-00 | | | | | - | - | 0.01 | - | - | - | - |
| 30-Nov-00 | | 44.83 | | | 1,000 | 7.3 | | ND | ND | 5.7 | 3,300 |
| 20-Mar-01 | | 45.89 | | | 1,500 | 7.2 | | ND | ND | 6.6 | 1,200 |
| 16-May-01 | | 46.15 | | | 1,900 | 6.9 | | ND | ND | ND | 283 |
| 30-Aug-01 | | 44.43 | | | 1,000 | 7.2 | | ND | ND | 6.2 | 195 |
| 19-Dec-01 | | 43.70 | | | 1,100 | 7.1 | | ND | ND | 1.2 | 134 |
| 20-Feb-02 | | 44.33 | | | 1,300 | 7.1 | | 0.5 | ND | 3.8 | 90 |
| 16-Aug-96 | MW #4 | 43.75 | 50.00 | | | | | ND | 0.56 | ND | ND |
| 07-Apr-97 | | 44.93 | | 2815 | 2,400 | 7.0 | | ND | ND | ND | ND |
| 27-Jun-97 | | 45.90 | | | 2,100 | 6.7 | | 139 | 1.6 | 1.6 | 9.4 |
| 15-Sep-97 | | 44.38 | | | | | | ND | 8.3 | ND | 1.1 |
| 30-Dec-97 | | 44.35 | | | | | | 0.6 | 1.5 | 0.4 | 2.6 |
| 25-Jan-99 | | 44.11 | | | 1,400 | 7.1 | | 324 | ND | 13.0 | ND |
| 11-May-99 | | 45.18 | | | 2,200 | 6.9 | | 0.9 | 4.4 | 4.0 | 37.3 |
| 25-Aug-99 | | 44.80 | | | 2,200 | 6.8 | | 1.5 | 2.1 | 0.2 | 3.5 |
| 30-Nov-99 | | 44.97 | | | 2,600 | 6.6 | | 8.7 | 7.6 | ND | 8.9 |
| 22-Feb-00 | | 45.78 | | | 2,600 | 6.7 | | ND | ND | ND | ND |
| | | NMWQCC GROUNDWATER STANDARDS | | | | | | 10 | 750 | 750 | 620 |

# TABLE 1 ( continued )

## XTO ENERGY INC. GROUNDWATER LAB RESULTS

SUBMITTED BY BLAGG ENGINEERING, INC.

**ABRAMS J # 1**
**UNIT I, SEC. 29, T29N, R10W**

REVISED DATE: JANUARY 22, 2006
FILENAME: ( AB-2Q-02.WK4 ) NJV

| SAMPLE DATE | MONITOR WELL No. | D.T.W. (ft) | T.D. (ft) | TDS mg/L | COND. umhos | pH | PRODUCT (ft.) | BTEX EPA METHOD 8021 (PPB) Benzene | Toluene | Ethyl Benzene | Total Xylene |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16-Aug-96 | MW #5 | 45.28 | 50.00 | | | | | 553 | 1,300 | 74.3 | 1,077 |
| 07-Apr-97 | | 46.44 | | 1487 | 2,000 | 7.0 | | 161 | 394 | 25.6 | 313.6 |
| 27-Jun-97 | | 46.18 | | | 1,800 | 6.9 | | 286 | 474 | 238 | 492 |
| 15-Sep-97 | | 45.95 | | | | | | 5.9 | 5.8 | 1.1 | 42.5 |
| 30-Dec-97 | | 45.86 | | | | | | 1.3 | 1.7 | 0.2 | 4.3 |
| 25-Jan-99 | | 45.63 | | | 2,000 | 7.0 | | 10.9 | 3.5 | 96.6 | 39.7 |
| 11-May-99 | | 46.71 | | | 1,800 | 6.4 | | 10.1 | 3.3 | 54.0 | 84.3 |
| 25-Aug-99 | | 46.41 | | | 2,000 | 6.4 | | 11.9 | 3.9 | 0.2 | 40.5 |
| 01-Feb-00 | | 47.02 | | | 2,400 | 6.9 | | 10 | 2.8 | 65 | 128.1 |
| 02-Jun-00 | | 47.86 | | | 2,300 | 6.9 | | ND | ND | ND | ND |
| 30-Aug-00 | | 46.95 | | | 2,500 | 7.0 | | ND | ND | ND | ND |
| 30-Nov-00 | | 46.52 | | | 2,500 | 7.3 | | ND | ND | ND | ND |
| 30-Jun-96 | MW #6 | - | 50.00 | | - | - | 0.70 | - | - | - | - |
| 07-Apr-97 | | - | | | - | - | 1.15 | - | - | - | - |
| 27-Jun-97 | | - | | | - | - | 1.25 | - | - | - | - |
| 15-Sep-97 | | - | | | - | - | 0.05 | - | - | - | - |
| 30-Dec-97 | | 45.08 | | | | | | 782 | 2,560 | 465 | 5,240 |
| 25-Jan-99 | | 44.86 | | | 900 | 7.3 | | 327 | 1,940 | 508 | 4,810 |
| 11-May-99 | | 45.94 | | | 1,000 | 6.9 | | 420 | 1,940 | 500 | 3,822 |
| 01-Feb-00 | | | | | - | - | 0.06 | - | - | - | - |
| 22-Feb-00 | | | | | - | - | 1.25 | - | - | - | - |
| 02-Jun-00 | | 46.90 | | | 600 | 7.3 | | 51 | 1,300 | 410 | 10,700 |
| 30-Aug-00 | | 45.86 | | | 900 | 7.0 | | ND | 12 | 130 | 4,800 |
| 30-Nov-00 | | 45.67 | | | 800 | 7.1 | | 6.7 | ND | 39 | 1,076 |
| 20-Mar-01 | | 47.38 | | | 800 | 7.1 | | 130 | ND | 180 | 1,680 |
| 16-May-01 | | 46.96 | | | 900 | 7.5 | | 1.0 | ND | 4.7 | 13.2 |
| 30-Aug-01 | | 45.26 | | | 700 | 7.2 | | 0.5 | ND | 1.6 | 3.1 |
| 19-Dec-01 | | 44.65 | | | 1,100 | 7.0 | | 1.2 | ND | 5.6 | 6.1 |
| 20-Feb-02 | | 45.28 | | | 900 | 6.9 | | 1.1 | ND | 15 | 7.1 |
| 16-Aug-96 | MW #7 | 43.32 | 50.00 | | | | | ND | ND | ND | ND |
| 07-Apr-97 | | 44.55 | | 414 | 700 | 7.5 | | ND | 0.73 | ND | 0.54 |
| 15-Sep-97 | | 43.88 | | | | | | ND | ND | ND | 0.5 |
| 30-Dec-97 | | 43.91 | | | | | | 1.1 | 3.7 | 0.2 | 18.3 |
| 25-Jan-99 | | 43.69 | | | 600 | 7.5 | | 1.6 | ND | ND | ND |
| 25-Aug-99 | | 44.33 | | | 500 | 7.2 | | 2.6 | 0.5 | 1.0 | 16.0 |
| 30-Nov-99 | | 44.51 | | | 600 | 7.3 | | 32.6 | 3.6 | 5.9 | 6.2 |
| 06-Dec-99 | | 44.53 | | | | | | 6.9 | 2.9 | 6.1 | 13.2 |
| 06-Dec-99 | dup. | " | | | | | | 7.3 | 3.9 | 12.3 | 13.1 |
| 22-Feb-00 | | 45.32 | | | 600 | 7.5 | | ND | ND | ND | ND |
| 02-Jun-00 | | 45.77 | | | 700 | 7.6 | | ND | ND | ND | ND |
| 20-Mar-01 | | 45.64 | | | 700 | 7.4 | | ND | ND | ND | 23.7 |
| 20-Feb-02 | | 44.09 | | | 700 | 7.5 | | ND | ND | ND | ND |
| | | NMWQCC GROUNDWATER STANDARDS | | | | | | 10 | 750 | 750 | 620 |

# TABLE 1 ( continued )

## XTO ENERGY INC. GROUNDWATER LAB RESULTS

SUBMITTED BY BLAGG ENGINEERING, INC.

**ABRAMS J # 1**
**UNIT I, SEC. 29, T29N, R10W**

REVISED DATE: JANUARY 22, 2006
FILENAME: ( AB-2Q-02.WK4 ) NJV

| SAMPLE DATE | MONITOR WELL No: | D.T.W. (ft) | T.D. (ft) | TDS mg/L | COND. umhos | pH | PRODUCT (ft.) | BTEX EPA METHOD 8021 (PPB) Benzene | Toluene | Ethyl Benzene | Total Xylene |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 07-Apr-97 | MW #8R | 45.10 | 53.10 | 2439 | 2,200 | 7.3 | | ND | 1.06 | ND | 0.54 |
| 19-May-97 | | 45.10 | | | | | | ND | 0.3 | 0.3 | 1.6 |
| 27-Jun-97 | | 45.09 | | | 1,800 | 7.3 | | ND | ND | 0.2 | 0.7 |
| 15-Sep-97 | | 44.32 | | | | | | ND | ND | ND | ND |
| 30-Dec-97 | | 44.49 | | | | | | ND | 0.3 | ND | 0.1 |
| 25-Jan-99 | | 44.25 | | | 2,300 | 7.1 | | 2.2 | ND | ND | ND |
| 25-Aug-99 | | 44.78 | | | 2,100 | 7.2 | | 0.9 | 0.3 | 0.9 | 2.4 |
| 30-Nov-99 | | 45.02 | | | 2,400 | 7.3 | | 8.5 | 2.9 | 0.5 | 2.7 |
| 22-Feb-00 | | 45.89 | | | 2,400 | 7.2 | | ND | ND | ND | ND |
| 02-Jun-00 | | 46.12 | | | 2,100 | 7.4 | | ND | ND | ND | ND |
| 20-Feb-02 | | 44.64 | | | 2,400 | 7.3 | | ND | ND | ND | ND |
| 16-Aug-96 | MW #9 | 44.59 | 50.00 | | | | | **74.8** | ND | ND | ND |
| 07-Apr-97 | | 45.84 | | 6397 | 3,900 | 6.9 | | **341** | 0.86 | 0.64 | ND |
| 27-Jun-97 | | 45.86 | | | 3,800 | 6.9 | | **48.6** | 0.2 | 0.2 | 1.0 |
| 15-Sep-97 | | 45.09 | | | | | | **113** | 0.8 | 1.4 | 20.3 |
| 30-Dec-97 | | 45.24 | | | | | | **0.9** | 0.4 | 0.3 | 2.4 |
| 25-Jan-99 | | 44.98 | | | 2,000 | 7.1 | | **13.9** | ND | ND | 2.6 |
| 11-May-99 | | 46.01 | | | 1,900 | 7.0 | | **0.9** | 1.0 | 1.6 | 5.2 |
| 25-Aug-99 | | 45.54 | | | 2,200 | 6.8 | | **5.3** | 2.3 | ND | 1.8 |
| 30-Nov-99 | | 45.75 | | | 2,200 | | | **3.6** | 2.0 | 2.3 | 3.7 |
| 22-Feb-00 | | 46.62 | | | 2,200 | 7.0 | | **ND** | ND | ND | ND |
| 16-Aug-96 | MW #10 | 44.71 | 50.00 | | | | | **1,600** | **6,280** | 511 | **6,190** |
| 07-Apr-97 | | 45.88 | | 1164 | 1,500 | 6.9 | | **1,010** | **1,940** | 66.8 | **514** |
| 19-May-97 | | 46.20 | | | | | | **0.5** | **23.8** | 152 | **752** |
| 27-Jun-97 | | 46.65 | | | 1,600 | 6.9 | | **5.0** | **0.5** | 7.1 | **56.6** |
| 15-Sep-97 | | 45.39 | | | | | | **492** | **329** | 426 | **1,038** |
| 30-Dec-97 | | 45.30 | | | | | | **96.8** | **6.6** | 60.9 | **660** |
| 25-Jan-99 | | 45.06 | | | 1,800 | 6.8 | | **43.6** | **53.0** | 253 | **1,397** |
| 11-May-99 | | 46.16 | | | 1,800 | 6.9 | | **27.0** | **65.1** | 162 | **723** |
| 01-Feb-00 | | 46.46 | | | 1,900 | 6.7 | | **31** | **120** | 300 | **3,500** |
| 02-Jun-00 | | 47.29 | | | 2,000 | 6.9 | | **13** | **8** | 10 | **415** |
| 16-May-01 | | 47.26 | | | 2,000 | 7.2 | | **ND** | **ND** | 0.7 | **ND** |
| 30-Aug-01 | | 45.73 | | | 1,800 | 7.4 | | **ND** | **ND** | ND | **ND** |
| 19-Dec-01 | | 44.86 | | | 1,900 | 6.8 | | **ND** | **ND** | 20 | **4.5** |
| 20-Feb-02 | | 45.47 | | | 1,800 | 6.8 | | **ND** | **ND** | 18 | **18.6** |
| 16-Aug-96 | MW #11 | 45.76 | 50.00 | | | | | ND | ND | ND | ND |
| 07-Apr-97 | | 47.02 | | 315 | 700 | 7.5 | | ND | ND | ND | ND |
| 25-Jan-99 | | 46.16 | | | 600 | 7.3 | | ND | ND | ND | 0.7 |
| | | NMWQCC GROUNDWATER STANDARDS | | | | | | 10 | 750 | 750 | 620 |

**NOTES :** 1) RESULTS IN BOLD RED TYPE INDICATE EXCEEDING NMWQCC STANDARDS .
2) RESULTS IN BOLD BLUE TYPE INDICATE BELOW NMWQCC STANDARDS AFTER PROCEEDING RESULTS EXCEEDED .

# TABLE 2

# CROSS TIMBERS OIL COMPANY

## ABRAMS J #1
## FREE PRODUCT REMOVAL OF MW #3 & 6

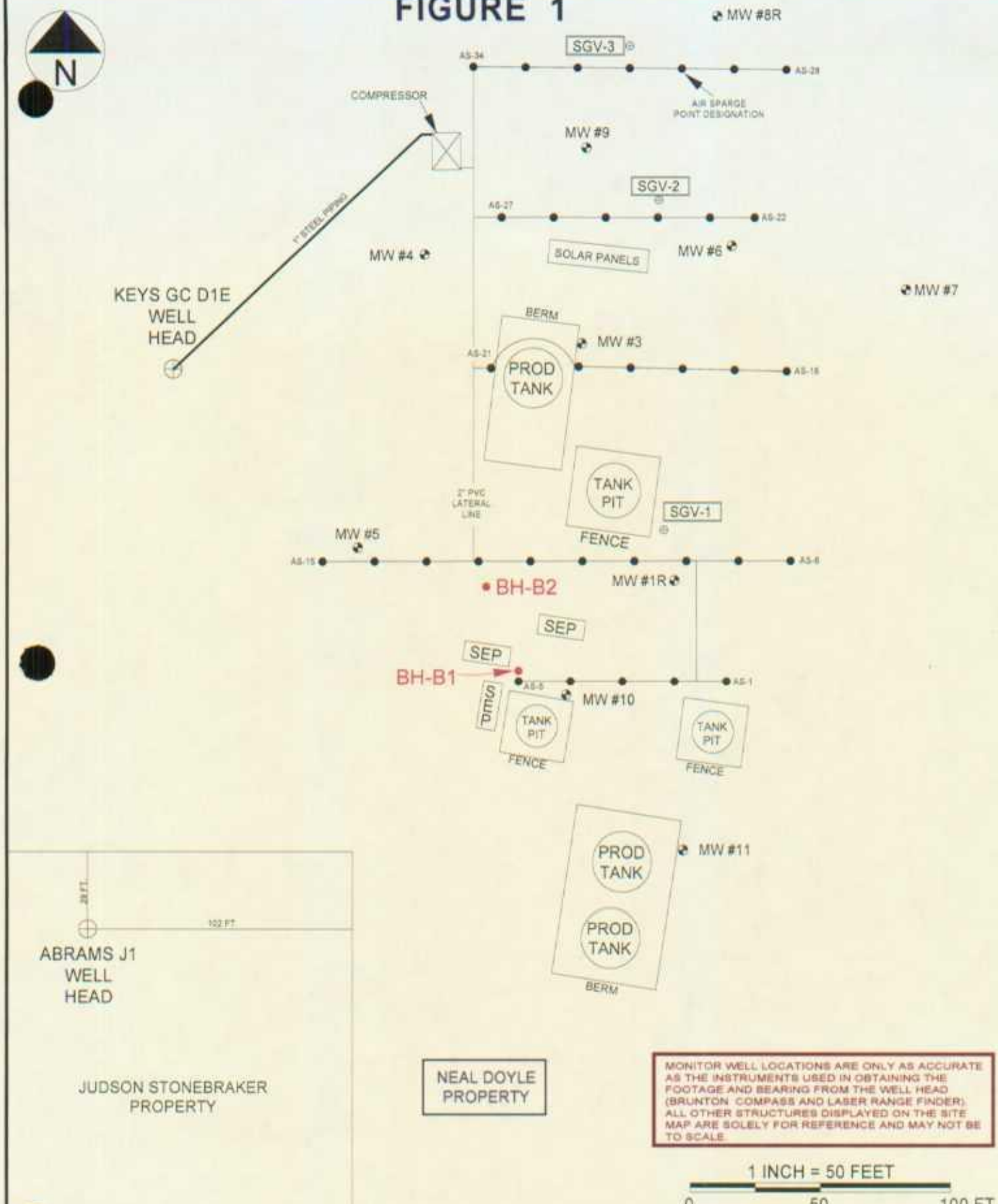
Vol. = 0.085775842 gal. / ft

| DATE | TIME OF 1st BAIL | DEPTH TO PRODUCT (FT.) | DEPTH TO WATER (FT.) | TOTAL DEPTH (FT.) | PRODUCT THICKNESS (INITIAL BAIL) (FT.) | PRODUCT THICKNESS ACCUM. (FT.) | PRODUCT VOLUME REMOVED (GAL.) | (oz.) | WELL VOLUME PURGED (GAL.) |
|---|---|---|---|---|---|---|---|---|---|
| MW #3 | | | | | | | | | |
| 25-Feb-00 | 1240 | 45.16 | NA | 50.00 | 1.41 | 3.47 | 0.30 | 38.10 | 2.50 |
| 28-Feb-00 | 1325 | 45.44 | NA | 50.00 | 0.24 | 0.48 | 0.04 | 5.27 | 2.25 |
| 29-Feb-00 | 1335 | 45.54 | NA | 50.00 | 0.03 | 0.15 | 0.01 | 1.65 | 2.25 |
| 08-Mar-00 | 1410 | NA | NA | 50.00 | 0.33 | 0.33 | 0.03 | 3.62 | 0.25 |
| 09-Mar-00 | 1055 | NA | NA | 50.00 | 0.18 | 0.18 | 0.02 | 1.98 | 2.25 |
| 13-Mar-00 | 1010 | 45.60 | 45.96 | 50.00 | 0.36 | 0.65 | 0.06 | 7.14 | 1.00 |
| 20-Mar-00 | 1240 | 45.69 | 46.03 | 50.00 | 0.34 | 0.60 | 0.05 | 6.59 | |
| 27-Mar-00 | 1627 | NA | NA | 50.00 | 0.22 | 0.22 | 0.02 | 2.42 | |
| 17-Apr-00 | 1530 | NA | NA | 50.00 | 0.50 | 0.50 | 0.04 | 5.49 | |
| 19-Apr-00 | 0850 | NA | NA | 50.00 | 0.20 | 0.20 | 0.02 | 2.20 | |
| | | | | | TOTALS | 6.78 | 0.58 | 74.44 | |
| MW #6 | | | | | | | | | |
| 25-Feb-00 | 1325 | 46.10 | NA | 50.00 | 0.83 | 2.80 | 0.24 | 30.74 | 2.00 |
| 28-Feb-00 | 1350 | 46.25 | NA | 50.00 | 0.87 | 1.97 | 0.17 | 21.63 | 2.00 |
| 29-Feb-00 | 1410 | 46.44 | NA | 50.00 | 0.13 | 0.49 | 0.04 | 5.38 | 1.75 |
| 08-Mar-00 | 1415 | NA | NA | 50.00 | 1.20 | 1.20 | 0.10 | 13.18 | 0.25 |
| 09-Mar-00 | 1100 | NA | NA | 50.00 | 0.74 | 0.74 | 0.06 | 8.12 | 0.25 |
| 13-Mar-00 | 1050 | 46.56 | 47.01 | 50.00 | 0.45 | 0.96 | 0.08 | 10.54 | 1.75 |
| 20-Mar-00 | 1305 | 46.67 | 46.75 | 50.00 | 0.08 | 0.04 | 0.00 | 0.44 | 0.13 |
| 27-Mar-00 | 1624 | NA | NA | 50.00 | 0.02 | 0.02 | 0.00 | 0.22 | |
| 17-Apr-00 | 1526 | NA | NA | 50.00 | 0.02 | 0.02 | 0.00 | 0.22 | |
| | | | | | TOTALS | 8.24 | 0.71 | 90.47 | |

INITIAL PRODUCT THICKNESS EITHER MEASURED USING FREE PRODUCT INTERFACE PROBE OR BY BAILER ( INDICATED BY NA WITHING DEPTH TO WATER COLUMN ) .

SHUT IN BOTH GATE VALVES FOR THE 2 UPPER GRADIENT SPARGE LEGS ON 4 / 19 / 00 . CONDITIONS TOO WINDY TO AUDIBLY DETECT AIR FLOW THROUGH MW # 3 & # 6 . CHECKED COMPRESSOR INTAKE ( GOOD VACUUM PRESSURE DETECTED PHYSICALLY ) & OTHER VALVES TO OBSERVE IF FULLY OPERATIONAL ( CONFIRMED ) . DRILLED HOLES INTO EXISTING ABOVE GRADE CASING TO MW # 3 & # 6 TO ALLOW OFF GAS ESCAPE .

# FIGURE 1




MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

1 INCH = 50 FEET

0 50 100 FT.

XTO ENERGY, INC.

ABRAMS J #1

NE/4 SE/4 SEC. 29, T29N, R10W

SAN JUAN COUNTY, NEW MEXICO


BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199


PROJECT: SOIL VERIFICATION

DRAWN BY: NJV

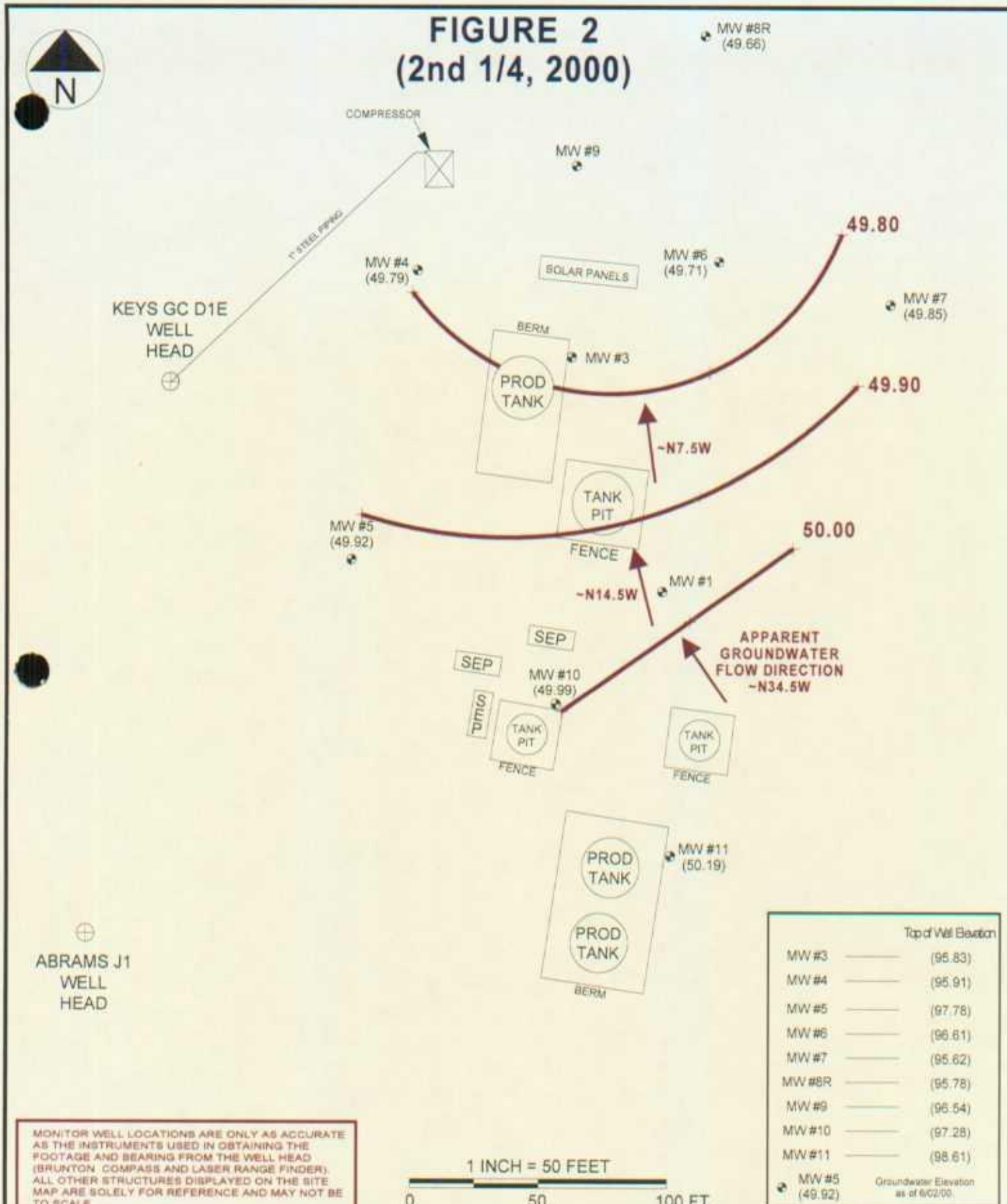
FILENAME: 08-02-99-SM

REVISED: 11/14/05 NJV

# SITE MAP

08/02

# FIGURE 2
# (2nd 1/4, 2000)




| | Top of Well Elevation |
|---|---|
| MW #3 | (95.83) |
| MW #4 | (95.91) |
| MW #5 | (97.78) |
| MW #6 | (96.61) |
| MW #7 | (95.62) |
| MW #8R | (95.78) |
| MW #9 | (96.54) |
| MW #10 | (97.28) |
| MW #11 | (98.61) |
| MW #5 (49.92) | Groundwater Elevation as of 6/02/00 |

MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE

1 INCH = 50 FEET

0 50 100 FT.

XTO ENERGY, INC.

ABRAMS J1

NE/4 SE/4 SEC. 29, T29N, R10W

SAN JUAN COUNTY, NEW MEXICO


BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 633-1199


PROJECT: MW SAMPLING

DRAWN BY: NJV

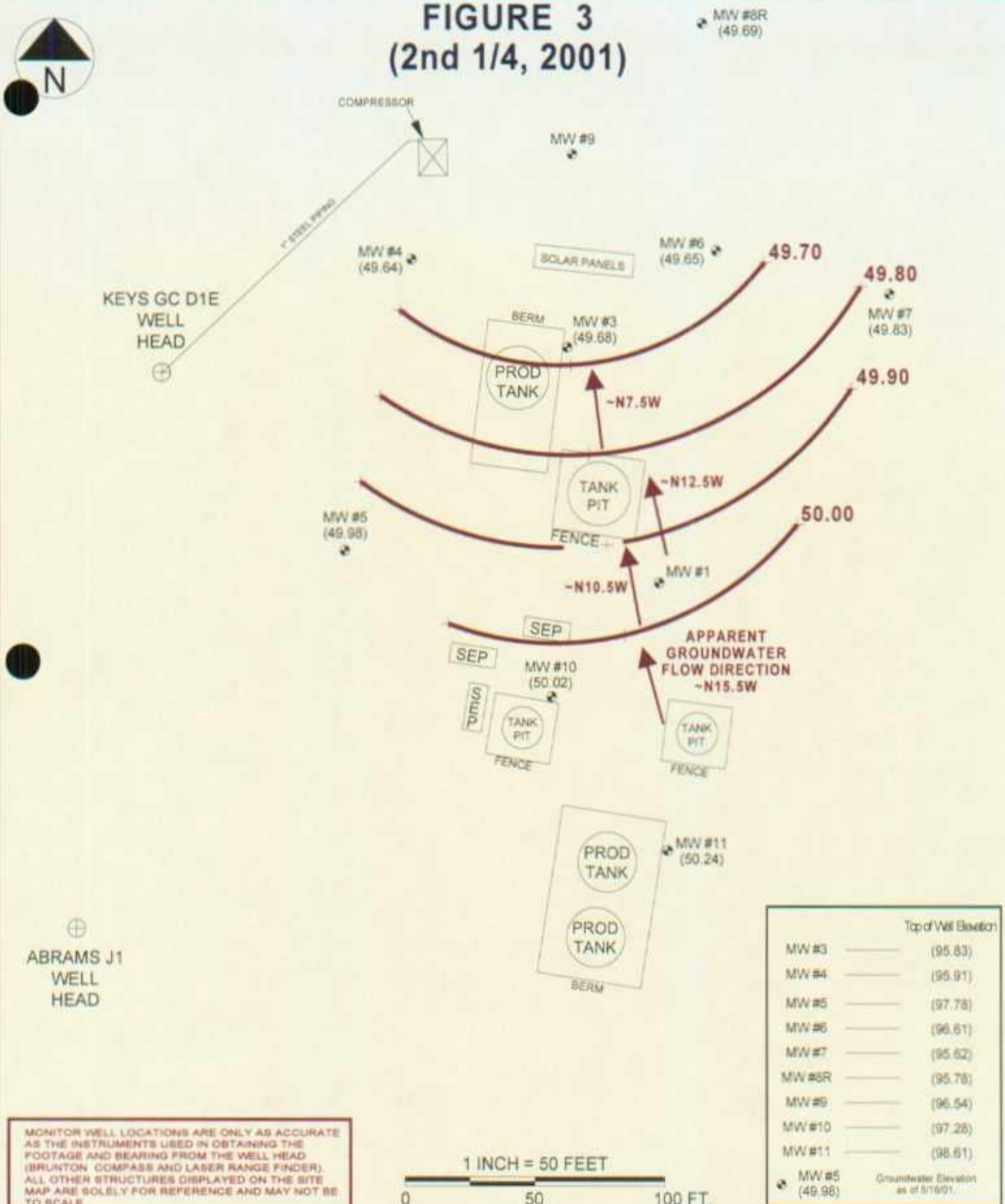
FILENAME: 06-02-00-GW

REVISED: 11/14/05 NJV

**GROUNDWATER GRADIENT MAP**

**06/00**

# FIGURE 3
# (2nd 1/4, 2001)




| | Top of Well Elevation |
|---|---|
| MW #3 | (95.83) |
| MW #4 | (95.91) |
| MW #5 | (97.78) |
| MW #6 | (96.61) |
| MW #7 | (95.62) |
| MW #8R | (95.78) |
| MW #9 | (96.54) |
| MW #10 | (97.28) |
| MW #11 | (96.61) |
| MW #5 (49.98) | Groundwater Elevation as of 5/16/01 |

MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

1 INCH = 50 FEET

0 50 100 FT.

XTO ENERGY, INC.

ABRAMS J1

NE/4 SE/4 SEC. 29, T29N, R10W

SAN JUAN COUNTY, NEW MEXICO


BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199


PROJECT: MW SAMPLING

DRAWN BY: NJV

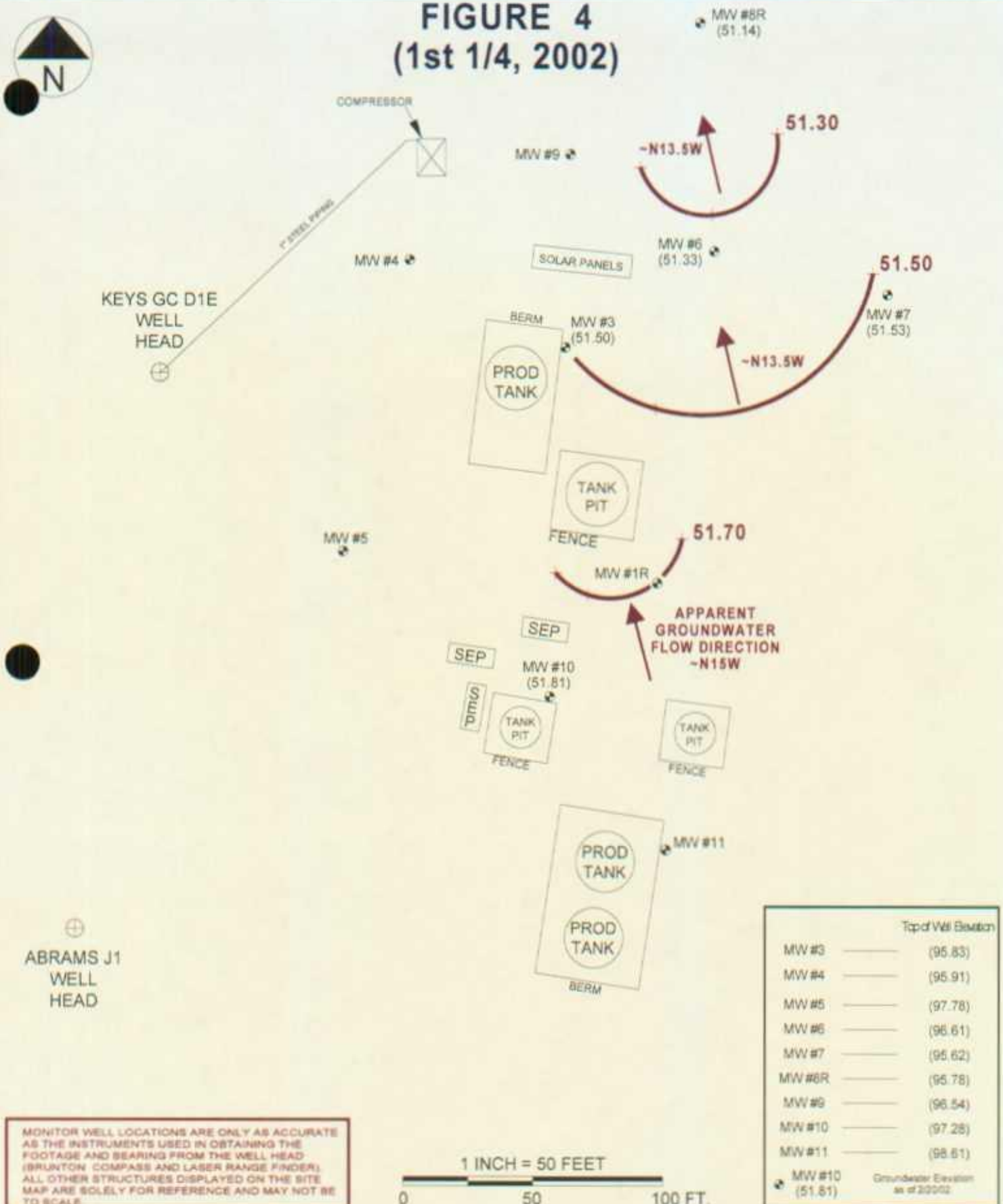
FILENAME: 05-16-01-GW

REVISED: 11/14/05 NJV

**GROUNDWATER GRADIENT MAP**

**05/01**

# FIGURE 4
# (1st 1/4, 2002)




| | Top of Well Elevation |
|---|---|
| MW #3 | (95.83) |
| MW #4 | (95.91) |
| MW #5 | (97.78) |
| MW #6 | (96.61) |
| MW #7 | (95.62) |
| MW #6R | (95.78) |
| MW #9 | (96.54) |
| MW #10 | (97.28) |
| MW #11 | (98.61) |

MW #10 (51.81) Groundwater Elevation as of 2/20/02

MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

1 INCH = 50 FEET

0 50 100 FT.

XTO ENERGY, INC.

ABRAMS J1

NE/4 SE/4 SEC. 29, T29N, R10W

SAN JUAN COUNTY, NEW MEXICO


BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199


PROJECT: MW SAMPLING

DRAWN BY: NJV

FILENAME: 02-20-02-GW

REVISED: 11/14/05 NJV

**GROUNDWATER GRADIENT MAP**

02/02

# FIGURE 5


## BLAGG ENGINEERING, INC.

P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199


# BORE / TEST HOLE REPORT

| | |
|---|---|
| LOCATION NAME: | ABRAMS J # 1 |
| CLIENT: | AMOCO PRODUCTION COMPANY |
| CONTRACTOR: | BLAGG ENGINEERING, INC. / ENVIROTECH, INC |
| EQUIPMENT USED: | MOBILE DRILL RIG - CME 75 |
| BORING LOCATION: | N35E, 420 FEET FROM WELL HEAD. |

| | |
|---|---|
| BORING # | BH-35 |
| MW # | 8R |
| PAGE # | 1 |
| DATE STARTED | 3/31/97 |
| DATE FINISHED | 3/31/97 |
| OPERATOR | BB |
| PREPARED BY | NJV |

DEPTH FEET | INTERVAL | LITHOLOGY INTERVAL | MW SCHEMATIC

2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62


## FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 2.70 FT. ABOVE GROUND SURFACE.

DARK YELLOWISH BROWN SAND TO SILTY SAND CONTINUOUS THROUGHOUT ENTIRE BORING, NON COHESIVE, SLIGHTLY MOIST TO SATURATED (AT GROUNDWATER), FIRM TO LOOSE, NO APPARENT HC ODOR DETECTED PYHSICALLY WITHIN AUGER CUTTINGS (0.0 - 51.0 FT. INTERVAL).

▼ GW DEPTH ON 4/1/97 = 42.40 FT. (APPROX.) FROM GROUND SURFACE.

NOTES: ☐ - SAND TO SILTY SAND.

TOS - TOP OF SCREEN FROM GROUND SURFACE.
TD - TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.
GW - GROUND WATER.

Monitor well consist of 2 inch PVC piping - casing from 2.70 ft. above grade to 35.40 ft. below grade, 0.010 slotted screen between 35.40 to 50.40 feet below grade, sand packed annular to 32.00 ft. below grade, bentonite plug between 30.00 - 32.00 ft. below grade, then with clean native fill material to grade.

DRAWING: AB-J1-8R.SKF | DATE: 4/06/97 | DWN BY: NJV

# FIGURE 6


## BLAGG ENGINEERING, INC.

P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199


# BORE / TEST HOLE REPORT

| | |
|---|---|
| LOCATION NAME: | ABRAMS J # 1 |
| CLIENT: | CROSS TIMBERS OIL COMPANY |
| CONTRACTOR: | BLAGG ENGINEERING, INC. / ENVIROTECH, INC. |
| EQUIPMENT USED: | MOBILE DRILL RIG - CME 75 |
| BORING LOCATION: | N59.5E, 261 FEET FROM WELL HEAD. |

| | |
|---|---|
| BORING #..... | BH-36 |
| MW #..... | 1R |
| PAGE #..... | 2 |
| DATE STARTED | 8/23/01 |
| DATE FINISHED | 8/23/01 |
| OPERATOR..... | KP |
| PREPARED BY | NJV |

DEPTH FEET | INTERVAL | LITHOLOGY INTERVAL | MW SCHEMATIC

## FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 2.00 FT. ABOVE GROUND SURFACE.

DARK YELLOWISH ORANGE TO MODERATE BROWN SAND TO SILTY SAND CONTINUOUS THROUGHOUT ENTIRE BORING, NON COHESIVE, SLIGHTLY MOIST TO SATURATED, LOOSE TO FIRM, NO APPARENT HC ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (0.0 - 40.0 FT. & 45.0 - 54.0 FT. INTERVAL).

MW #1R @ 35 FT. - TIME COLLECTED 1000, OVM = **3.7** ppm

MW #1R @ 40 FT. - TIME COLLECTED 1015, OVM = **291** ppm, TPH = **ND** ppm; benzene = **ND** ppb; Total BTEX = **23.1** ppb

TOS 42.00

GW DEPTH ON 8/30/01 = 42.97 FT. (APPROX.) FROM GROUND SURFACE.

SOIL SAME AS ABOVE EXCEPT SLIGHT HC ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (40.0 - 45.0 FT. INTERVAL).

TD 52.00

OVM CALIBRATION:
53.5 ppm; RF = 0.52
(RF = response factor).
100 ppm calibration gas - isobutylene.
Date - 8/23/01.
Time - 1017.

NOTES:
- SAND TO SILTY SAND.
TOS - TOP OF SCREEN FROM GROUND SURFACE.
TD - TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.
GW - GROUND WATER.

Monitor well consist of 2 inch PVC piping - casing from 2.00 ft. above grade to 42.00 ft. below grade, 0.010 slotted screen between 42.00 to 52.00 feet below grade, sand packed annular to 40.00 ft. below grade, bentonite plug between 37.00 - 40.00 ft. below grade, then with clean native fill material to grade.

DRAWING: AB-J1-1R.SKF | DATE: 4/06/97 | DWN BY: NJV

# FIGURE 7


## BLAGG ENGINEERING, INC.

P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199


# BORE / TEST HOLE REPORT

| | |
|---|---|
| BORING # | BH - B1 |
| MW # | - |
| PAGE # | 3 |
| DATE STARTED | 8/22/02 |
| DATE FINISHED | 8/22/02 |
| OPERATOR | JCB |
| PREPARED BY | NJV |

CLIENT: **XTO ENERGY, INC.**
LOCATION NAME: ABRAMS J #1 UNIT I, SEC. 29, T29N, R10W
CONTRACTOR: **BLAGG ENGINEERING, INC.**
EQUIPMENT USED: **EARTHPROBE 200**
BORING LOCATION: **4** FEET, **NORTH** FROM AS-5 (SEE SITE MAP).


## FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

DARK YELLOWISH ORANGE TO BROWN SAND TO SILTY SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, SLIGHT HC ODOR DETECTED APPROX. 27 FT. BELOW GRADE (0.0 - 27 FT. BELOW GRADE).

118.1 — BH-B1 @ 27 FT. - TIME COLLECTED 0850, TIME OF OVM READING 0905; TPH = **69.6** ppm.

170.3 — BH-B1 @ 30 FT. - TIME COLLECTED 0926, Time of OVM reading 0942. TPH = **40.9** ppm; Benzene = **10.5** ppb; Total BTEX = **352** ppb.

LIGHT TO DARK GRAY SILTY SAND, SLIGHTLY COHESIVE, SLIGHTLY MOIST, FIRM, SLIGHT HC ODOR DETECTED PHYSICALLY WITHIN CUTTINGS & AT SAMPLE POINTS ( 27 - 39 FT. BELOW GRADE).

35.4 — BH-B1 @ 38-39 FT. - TIME COLLECTED 0924, Time of OVM reading 0942; TPH = **25.9** ppm.

NOTES:
- SAND TO SILTY SAND.
- **OVM** - organic vapor meter or PID (photoionization detector).
- **ppm** - parts per million.
- **ppb** - parts per billion.
- **TPH** - total petroleum hydrocarbons (US Epa modified method 8015B).
- **BTEX** - benzene, toluene, ethylbenzene, & total xylenes (US Epa method 8021B).

**OVM CALIBRATION:**
53.5 ppm; RF = 0.52
(RF = response factor).
100 ppm calibration gas - isobutylene.
Date - 8/22/02.
Time - 0719.

DRAWING: ABRAMS-BH1. SKF | DATE: 10/29/02 | DWN BY: NJV

# FIGURE 8


## BLAGG ENGINEERING, INC.

P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199


# BORE / TEST HOLE REPORT

| | |
|---|---|
| BORING # | BH - B2 |
| MW # | - |
| PAGE # | 4 |
| DATE STARTED | 8/22/02 |
| DATE FINISHED | 8/22/02 |
| OPERATOR | JCB |
| PREPARED BY | NJV |

CLIENT: **XTO ENERGY, INC.**
LOCATION NAME: ABRAMS J #1 UNIT I, SEC. 29, T29N, R10W
CONTRACTOR: BLAGG ENGINEERING, INC.
EQUIPMENT USED: EARTHPROBE 200
BORING LOCATION: **10** FEET, **SSE** FROM AS-12 (SEE SITE MAP).

| DEPTH (FT.) | LITHOLOGY INTERVAL | OVM READINGS (ppm) | FIELD CLASSIFICATION AND REMARKS |
|---|---|---|---|
| | | | GROUND SURFACE |
| 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62 | | | DARK YELLOWISH ORANGE SAND TO SILTY SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HC ODOR DETECTED PHYSICALLY THROUGHOUT ENTIRE BORING (0.0 - 39 FT. BELOW GRADE). |
| 36 | | 8.5 | BH-B2 @ 36 FT. - TIME COLLECTED 1030, Time of OVM reading 1038, TPH = **42.2** ppm. |

NOTES:
- SAND TO SILTY SAND.
- **OVM** - organic vapor meter or PID (photoionization detector).
- **ppm** - parts per million.
- **TPH** - total petroleum hydrocarbons (US Epa modified method 8015B).

**OVM CALIBRATION:**
53.5 ppm; RF = 0.52
(RF = response factor).
100 ppm calibration gas - isobutylene.
Date - 8/22/02.
Time - 0719.

DRAWING: ABRAMS-BH2. SKF DATE: 10/29/02 DWN BY: NJV

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8015 Modified
## Nonhalogenated Volatile Organics
## Total Petroleum Hydrocarbons

| | | | |
|---|---|---|---|
| Client: | Blagg / XTO | Project #: | 94034-010 |
| Sample ID: | BH-B1 @ 27' | Date Reported: | 08-27-02 |
| Laboratory Number: | 23624 | Date Sampled: | 08-22-02 |
| Chain of Custody No: | 10090 | Date Received: | 08-22-02 |
| Sample Matrix: | Soil | Date Extracted: | 08-22-02 |
| Preservative: | Cool | Date Analyzed: | 08-27-02 |
| Condition: | Cool and Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|---|---|---|
| **Gasoline Range (C5 - C10)** | **4.0** | **0.2** |
| **Diesel Range (C10 - C28)** | **65.6** | **0.1** |
| **Total Petroleum Hydrocarbons** | **69.6** | **0.2** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Abrams J #1 Grab Sample.**

Christine M Walters
Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8015 Modified
## Nonhalogenated Volatile Organics
## Total Petroleum Hydrocarbons

| | | | |
|---|---|---|---|
| Client: | Blagg / XTO | Project #: | 94034-010 |
| Sample ID: | BH-B1 @ 30' | Date Reported: | 08-27-02 |
| Laboratory Number: | 23625 | Date Sampled: | 08-22-02 |
| Chain of Custody No: | 10090 | Date Received: | 08-22-02 |
| Sample Matrix: | Soil | Date Extracted: | 08-22-02 |
| Preservative: | Cool | Date Analyzed: | 08-27-02 |
| Condition: | Cool and Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|---|---|---|
| **Gasoline Range (C5 - C10)** | **4.1** | **0.2** |
| **Diesel Range (C10 - C28)** | **36.8** | **0.1** |
| **Total Petroleum Hydrocarbons** | **40.9** | **0.2** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Abrams J #1 Grab Sample.**

Christine M Walters
Analyst

Review

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# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021
## AROMATIC VOLATILE ORGANICS

| | | | |
|---|---|---|---|
| Client: | Blagg / XTO | Project #: | 94034-010 |
| Sample ID: | BH - B1 @ 30' | Date Reported: | 08-27-02 |
| Laboratory Number: | 23625 | Date Sampled: | 08-22-02 |
| Chain of Custody: | 10090 | Date Received: | 08-22-02 |
| Sample Matrix: | Soil | Date Analyzed: | 08-26-02 |
| Preservative: | Cool | Date Extracted: | 08-22-02 |
| Condition: | Cool & Intact | Analysis Requested: | BTEX |

| Parameter | Concentration (ug/Kg) | Det. Limit (ug/Kg) |
|---|---|---|
| **Benzene** | **10.5** | **1.8** |
| **Toluene** | **31.3** | **1.7** |
| **Ethylbenzene** | **33.3** | **1.5** |
| **p,m-Xylene** | **153** | **2.2** |
| **o-Xylene** | **124** | **1.0** |
| **Total BTEX** | **352** | |

ND - Parameter not detected at the stated detection limit.

| Surrogate Recoveries: | Parameter | Percent Recovery |
|---|---|---|
| | **Fluorobenzene** | **99 %** |
| | **1,4-difluorobenzene** | **99 %** |
| | **Bromochlorobenzene** | **99 %** |

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

**Comments:** **Abrams J #1 Grab Sample.**

Christine M Walters
Analyst

Review

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# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8015 Modified
## Nonhalogenated Volatile Organics
## Total Petroleum Hydrocarbons

| | | | |
|---|---|---|---|
| Client: | Blagg / XTO | Project #: | 94034-010 |
| Sample ID: | BH-B1 @ 38'-39' | Date Reported: | 08-27-02 |
| Laboratory Number: | 23626 | Date Sampled: | 08-22-02 |
| Chain of Custody No: | 10090 | Date Received: | 08-22-02 |
| Sample Matrix: | Soil | Date Extracted: | 08-22-02 |
| Preservative: | Cool | Date Analyzed: | 08-27-02 |
| Condition: | Cool and Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|---|---|---|
| **Gasoline Range (C5 - C10)** | **ND** | **0.2** |
| **Diesel Range (C10 - C28)** | **25.9** | **0.1** |
| **Total Petroleum Hydrocarbons** | **25.9** | **0.2** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Abrams J #1 Grab Sample.**

Christine M Walter
Analyst

Review

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# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8015 Modified
## Nonhalogenated Volatile Organics
## Total Petroleum Hydrocarbons

| | | | |
|---|---|---|---|
| Client: | Blagg / XTO | Project #: | 94034-010 |
| Sample ID: | BH-B2 @ 35' | Date Reported: | 08-27-02 |
| Laboratory Number: | 23627 | Date Sampled: | 08-22-02 |
| Chain of Custody No: | 10090 | Date Received: | 08-22-02 |
| Sample Matrix: | Soil | Date Extracted: | 08-22-02 |
| Preservative: | Cool | Date Analyzed: | 08-27-02 |
| Condition: | Cool and Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|---|---|---|
| **Gasoline Range (C5 - C10)** | **ND** | **0.2** |
| **Diesel Range (C10 - C28)** | **42.2** | **0.1** |
| **Total Petroleum Hydrocarbons** | **42.2** | **0.2** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Abrams J #1 Grab Sample.**

Christine M Walters
Analyst

Review

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# CHAIN OF CUSTODY RECORD

10090

| Client / Project Name | Project Location | ANALYSIS / PARAMETERS |
|---|---|---|
| BLAGG / XTO | ABRAMS J #1 | |

| Sampler: | Client No. |
|---|---|
| NJV | 94034-010 |

| Sample No./ Identification | Sample Date | Sample Time | Lab Number | Sample Matrix | No. of Containers | TPH (8015B) | BTEX (8021B) | Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | PRESERVED COOL |
| | | | | | | | | GRAB SAMPLES |
| BH-B1 @ 27' | 8/22/02 | 0850 | 23624 | SOIL | 1 | ✓ | | |
| ~~BH-B1 @ 30'~~ BH-B1 @ 30' | 8/22/02 | 0926 | 23625 | SOIL | 1 | ✓ | ✓ | |
| BH-B1 @ 38-39' | 8/22/02 | 0924 | 23626 | SOIL | 1 | ✓ | | |
| BH-B2 @ 35' | 8/22/02 | 1030 | 23627 | SOIL | 1 | ✓ | | |

| Relinquished by: (Signature) | Date | Time | Received by: (Signature) | Date | Time |
|---|---|---|---|---|---|
| Nelson Velez | 8/22/02 | 1110 | | 8/22/02 | 11:10 |
| Relinquished by: (Signature) | | | Received by: (Signature) | | |
| Relinquished by: (Signature) | | | Received by: (Signature) | | |


ENVIROTECH INC.

5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615


| Sample Receipt | Y | N | N/A |
|---|---|---|---|
| Received Intact | ✓ | | |
| Cool - Ice/Blue Ice | ✓ | | |

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA Method 8015 Modified
### Nonhalogenated Volatile Organics
### Total Petroleum Hydrocarbons

## Quality Assurance Report

| | | | |
|---|---|---|---|
| Client: | QA/QC | Project #: | N/A |
| Sample ID: | 08-27-TPH QA/QC | Date Reported: | 08-27-02 |
| Laboratory Number: | 23624 | Date Sampled: | N/A |
| Sample Matrix: | Methylene Chloride | Date Received: | N/A |
| Preservative: | N/A | Date Analyzed: | 08-27-02 |
| Condition: | N/A | Analysis Requested: | TPH |

| | I-Cal Date | I-Cal RF: | C-Cal RF: | % Difference | Accept. Range |
|---|---|---|---|---|---|
| **Gasoline Range C5 - C10** | 04-25-02 | 2.7355E-002 | 2.7328E-002 | **0.10%** | **0 - 15%** |
| **Diesel Range C10 - C28** | 04-25-02 | 2.4557E-002 | 2.4508E-002 | **0.20%** | **0 - 15%** |

| Blank Conc. (mg/L - mg/Kg) | Concentration | Detection Limit |
|---|---|---|
| **Gasoline Range C5 - C10** | **ND** | **0.2** |
| **Diesel Range C10 - C28** | **ND** | **0.1** |
| **Total Petroleum Hydrocarbons** | **ND** | **0.2** |

| Duplicate Conc. (mg/Kg) | Sample | Duplicate | % Difference | Accept. Range |
|---|---|---|---|---|
| **Gasoline Range C5 - C10** | **4.0** | **4.0** | **0.0%** | **0 - 30%** |
| **Diesel Range C10 - C28** | **65.6** | **65.4** | **0.3%** | **0 - 30%** |

| Spike Conc. (mg/Kg) | Sample | Spike Added | Spike Result | % Recovery | Accept. Range |
|---|---|---|---|---|---|
| **Gasoline Range C5 - C10** | **4.0** | **250** | **254** | **99.8%** | **75 - 125%** |
| **Diesel Range C10 - C28** | **65.6** | **250** | **315** | **99.8%** | **75 - 125%** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **QA/QC for samples 23624 - 23625 and 23637.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021
## AROMATIC VOLATILE ORGANICS

| | | | |
|---|---|---|---|
| Client: | N/A | Project #: | N/A |
| Sample ID: | 08-26-BTEX QA/QC | Date Reported: | 08-27-02 |
| Laboratory Number: | 23625 | Date Sampled: | N/A |
| Sample Matrix: | Soil | Date Received: | N/A |
| Preservative: | N/A | Date Analyzed: | 08-26-02 |
| Condition: | N/A | Analysis: | BTEX |

| Calibration and Detection Limits (ug/L) | I-Cal RF: | C-Cal RF: | %Diff. Accept. Range 0 - 15% | Blank Conc | Detect. Limit |
|---|---|---|---|---|---|
| Benzene | 2.6914E-002 | 2.6995E-002 | 0.3% | ND | 0.2 |
| Toluene | 3.3709E-002 | 3.3777E-002 | 0.2% | ND | 0.2 |
| Ethylbenzene | 5.8262E-002 | 5.8438E-002 | 0.3% | ND | 0.2 |
| p,m-Xylene | 7.1891E-002 | 7.2107E-002 | 0.3% | ND | 0.2 |
| o-Xylene | 5.4522E-002 | 5.4631E-002 | 0.2% | ND | 0.1 |

| Duplicate Conc. (ug/Kg) | Sample | Duplicate | %Diff. | Accept Range | Detect. Limit |
|---|---|---|---|---|---|
| Benzene | 10.5 | 10.8 | 2.9% | 0 - 30% | 1.8 |
| Toluene | 31.3 | 30.7 | 1.9% | 0 - 30% | 1.7 |
| Ethylbenzene | 33.3 | 32.6 | 2.1% | 0 - 30% | 1.5 |
| p,m-Xylene | 153 | 157 | 2.8% | 0 - 30% | 2.2 |
| o-Xylene | 124 | 128 | 2.7% | 0 - 30% | 1.0 |

| Spike Conc. (ug/Kg) | Sample | Amount Spiked | Spiked Sample | % Recovery | Accept Range |
|---|---|---|---|---|---|
| Benzene | 10.5 | 50.0 | 60.4 | 99.8% | 39 - 150 |
| Toluene | 31.3 | 50.0 | 81.2 | 99.9% | 46 - 148 |
| Ethylbenzene | 33.3 | 50.0 | 83.2 | 99.9% | 32 - 160 |
| p,m-Xylene | 153 | 100 | 253 | 100% | 46 - 148 |
| o-Xylene | 124 | 50.0 | 174 | 100% | 46 - 148 |

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

**Comments:** **QA/QC for sample 23625.**

Kristine M Walters
Analyst

Review

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# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8015 Modified
## Nonhalogenated Volatile Organics
## Total Petroleum Hydrocarbons

| | | | |
|---|---|---|---|
| Client: | Blagg / XTO Energy | Project #: | 94034-010 |
| Sample ID: | MW #1R @ 40' | Date Reported: | 08-27-01 |
| Laboratory Number: | 20749 | Date Sampled: | 08-23-01 |
| Chain of Custody No: | 9420 | Date Received: | 08-24-01 |
| Sample Matrix: | Soil | Date Extracted: | 08-24-01 |
| Preservative: | Cool | Date Analyzed: | 08-27-01 |
| Condition: | Cool and Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|---|---|---|
| **Gasoline Range (C5 - C10)** | **ND** | **0.2** |
| **Diesel Range (C10 - C28)** | **ND** | **0.1** |
| **Total Petroleum Hydrocarbons** | **ND** | **0.2** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Abrams J #1 Grab Sample from Split Spoon.**

Analyst

Review

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# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021
## AROMATIC VOLATILE ORGANICS

| | | | |
|---|---|---|---|
| Client: | Blagg / XTO Energy | Project #: | 94034-010 |
| Sample ID: | MW #1R @ 40' | Date Reported: | 08-27-01 |
| Laboratory Number: | 20749 | Date Sampled: | 08-23-01 |
| Chain of Custody: | 9420 | Date Received: | 08-24-01 |
| Sample Matrix: | Soil | Date Analyzed: | 08-27-01 |
| Preservative: | Cool | Date Extracted: | 08-24-01 |
| Condition: | Cool & Intact | Analysis Requested: | BTEX |

| Parameter | Concentration (ug/Kg) | Det. Limit (ug/Kg) |
|---|---|---|
| **Benzene** | **ND** | **1.8** |
| **Toluene** | **ND** | **1.7** |
| **Ethylbenzene** | **2.7** | **1.5** |
| **p,m-Xylene** | **14.6** | **2.2** |
| **o-Xylene** | **5.8** | **1.0** |
| **Total BTEX** | **23.1** | |

ND - Parameter not detected at the stated detection limit.

| Surrogate Recoveries: | Parameter | Percent Recovery |
|---|---|---|
| | **Fluorobenzene** | **98 %** |
| | **1,4-difluorobenzene** | **98 %** |
| | **Bromochlorobenzene** | **98 %** |

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

**Comments:** **Abrams J #1 Grab Sample from Split Spoon.**

Analyst

Review

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# CHAIN OF CUSTODY RECORD

09420

| Client / Project Name | Project Location | ANALYSIS / PARAMETERS |
|---|---|---|
| BLAGG / XTO ENERGY | ABRAMS J #1 | |
| Sampler: | Client No. 94034-010 | |

| Sample No./ Identification | Sample Date | Sample Time | Lab Number | Sample Matrix | No. of Containers | TPH (8015) | BTEX (8021) | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | GRAB SAMPLE FROM SPLIT SPOON ~~CUTTING~~ NV |
| MW #1R @ 40' | 8/23/01 | 1015 | 20748 9 | SOIL | 1 | ✓ | ✓ | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | PRESERVED COOL |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

| Relinquished by: (Signature) | Date | Time | Received by: (Signature) | Date | Time |
|---|---|---|---|---|---|
| Mahon Vail | 8/24/01 | 0830 | Allen L. Adkins | 8-24-01 | 0830 |
| Relinquished by: (Signature) | | | Received by: (Signature) | | |
| Relinquished by: (Signature) | | | Received by: (Signature) | | |


ENVIROTECH INC.

5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615


| Sample Receipt | Y | N | N/A |
|---|---|---|---|
| Received Intact | ✓ | | |
| Cool - Ice/Blue Ice | ✓ | | |

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA Method 8015 Modified
### Nonhalogenated Volatile Organics
### Total Petroleum Hydrocarbons

### Quality Assurance Report

| | | | |
|---|---|---|---|
| Client: | QA/QC | Project #: | N/A |
| Sample ID: | 08-27-TPH QA/QC | Date Reported: | 08-27-01 |
| Laboratory Number: | 20749 | Date Sampled: | N/A |
| Sample Matrix: | Methylene Chloride | Date Received: | N/A |
| Preservative: | N/A | Date Analyzed: | 08-27-01 |
| Condition: | N/A | Analysis Requested: | TPH |

| | I-Cal Date | I-Cal RF: | C-Cal RF: | % Difference | Accept. Range |
|---|---|---|---|---|---|
| **Gasoline Range C5 - C10** | 08-22-01 | 4.6356E-002 | 4.6310E-002 | **0.10%** | **0 - 15%** |
| **Diesel Range C10 - C28** | 08-22-01 | 1.7617E-002 | 1.7582E-002 | **0.20%** | **0 - 15%** |

| Blank Conc. (mg/L - mg/Kg) | Concentration | Detection Limit |
|---|---|---|
| **Gasoline Range C5 - C10** | **ND** | **0.2** |
| **Diesel Range C10 - C28** | **ND** | **0.1** |
| **Total Petroleum Hydrocarbons** | **ND** | **0.2** |

| Duplicate Conc. (mg/Kg) | Sample | Duplicate | % Difference | Accept. Range |
|---|---|---|---|---|
| **Gasoline Range C5 - C10** | **ND** | **ND** | **0.0%** | **0 - 30%** |
| **Diesel Range C10 - C28** | **ND** | **ND** | **0.0%** | **0 - 30%** |

| Spike Conc. (mg/Kg) | Sample | Spike Added | Spike Result | % Recovery | Accept. Range |
|---|---|---|---|---|---|
| **Gasoline Range C5 - C10** | **ND** | **250** | **250** | **99.8%** | **75 - 125%** |
| **Diesel Range C10 - C28** | **ND** | **250** | **250** | **99.8%** | **75 - 125%** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **QA/QC for samples 20749, 20804 and 20806 - 20809.**

Analyst

Review

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# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021
## AROMATIC VOLATILE ORGANICS

| | | | |
|---|---|---|---|
| Client: | N/A | Project #: | N/A |
| Sample ID: | 08-27-BTEX QA/QC | Date Reported: | 08-27-01 |
| Laboratory Number: | 20749 | Date Sampled: | N/A |
| Sample Matrix: | Soil | Date Received: | N/A |
| Preservative: | N/A | Date Analyzed: | 08-27-01 |
| Condition: | N/A | Analysis: | BTEX |

| Calibration and Detection Limits (ug/L) | I-Cal RF: | C-Cal RF: | %Diff. Accept. Range 0 - 15% | Blank Conc | Detect. Limit |
|---|---|---|---|---|---|
| Benzene | 4.2027E-002 | 4.2128E-002 | 0.2% | ND | 0.2 |
| Toluene | 4.0813E-002 | 4.0887E-002 | 0.2% | ND | 0.2 |
| Ethylbenzene | 6.5979E-002 | 6.6118E-002 | 0.2% | ND | 0.2 |
| p,m-Xylene | 6.5866E-002 | 6.6031E-002 | 0.3% | ND | 0.2 |
| o-Xylene | 5.7355E-002 | 5.7453E-002 | 0.2% | ND | 0.1 |

| Duplicate Conc. (ug/Kg) | Sample | Duplicate | %Diff. | Accept Range | Detect. Limit |
|---|---|---|---|---|---|
| Benzene | ND | ND | 0.0% | 0 - 30% | 1.8 |
| Toluene | ND | ND | 0.0% | 0 - 30% | 1.7 |
| Ethylbenzene | 2.7 | 2.7 | 0.0% | 0 - 30% | 1.5 |
| p,m-Xylene | 14.6 | 14.7 | 0.7% | 0 - 30% | 2.2 |
| o-Xylene | 5.8 | 5.8 | 0.0% | 0 - 30% | 1.0 |

| Spike Conc. (ug/Kg) | Sample | Amount Spiked | Spiked Sample | % Recovery | Accept Range |
|---|---|---|---|---|---|
| Benzene | ND | 50.0 | 50.0 | 100.0% | 39 - 150 |
| Toluene | ND | 50.0 | 50.0 | 100.0% | 46 - 148 |
| Ethylbenzene | 2.7 | 50.0 | 52.7 | 100.0% | 32 - 160 |
| p,m-Xylene | 14.6 | 100 | 115 | 99.9% | 46 - 148 |
| o-Xylene | 5.8 | 50.0 | 55.8 | 100.0% | 46 - 148 |

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

**Comments:** **QA/QC for samples 20749, 20804 and 20806 - 20809.**

Analyst

Review

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# BLAGG ENGINEERING, INC.

## MONITOR WELL SAMPLING DATA

**CLIENT :** CROSS TIMBERS OIL CO.

**CHAIN-OF-CUSTODY # :** 10350

**ABRAMS J # 1**
**UNIT I, SEC. 29, T29N, R10W**

**LABORATORY (S) USED :** ON - SITE TECH.

*Date :* February 1, 2000

*Filename :* 02-01-00.WK4

**SAMPLER :** R E P

**PROJECT MANAGER :** N J V

| WELL # | WELL ELEV. (ft) | WATER ELEV. (ft) | DEPTH TO WATER (ft) | TOTAL DEPTH (ft) | SAMPLING TIME | pH | CONDUCT (umhos) | VOLUME PURGED (gal.) | FREE PRODUCT (ft) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | | - | 45.73 | - | - | - | - | - |
| 2 | MONITOR WELL NOT FOUND - PRESUMED DESTROYED | | | | | | | | |
| 3 | | | - | 50.00 | - | - | - | - | 0.05 |
| 4 | 95.91 | 49.49 | 46.42 | 50.00 | - | - | - | - | - |
| 5 | 97.78 | 50.76 | 47.02 | 50.00 | 1155 | 6.9 | 2,400 | 1.50 | - |
| 6 | | | - | 50.00 | - | - | - | - | 0.06 |
| 7 | 95.62 | 50.53 | 45.09 | 50.00 | - | - | - | - | - |
| 8R | | | - | 53.10 | - | - | - | - | - |
| 9 | | | - | 50.00 | - | - | - | - | - |
| 10 | 97.28 | 50.82 | 46.46 | 50.00 | 1125 | 6.7 | 1,900 | 1.75 | - |
| 11 | 98.61 | 50.99 | 47.62 | 50.00 | - | - | - | - | - |

NOTES : Volume of water purged from well prior to sampling; V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores).

Ideally a minimum of three (3) wellbore volumes:

1.25 " well diameter = 0.19 gallons per foot of water ( or 24 oz. ).

2 bails per foot - small teflon bailer.

3 bails per foot - 3 / 4 " teflon bailer.

2.00 " well diameter = 0.49 gallons per foot of water.

4.00 " well diameter = 1.95 gallons per foot of water.

Comments or note well diameter if not standard 2 ".

Dry hole in MW # 1 . Poor recovery in MW 's 5 & 10 . Collected BTEX samples from MW # 's 5, & 10 only .

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

# ANALYTICAL REPORT

**Date:** *09-Feb-00*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0002004 | **Client Sample ID:** | MW #5 |
| **Lab ID:** | 0002004-02A **Matrix:** AQUEOUS | **Collection Date:** | 2/1/2000 11:55:00 AM |
| **Project:** | Abrams J #1 | **COC Record:** | 10350 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DM** |
| Benzene | 10 | 0.5 | | µg/L | 1 | 2/4/2000 |
| Toluene | 2.8 | 0.5 | | µg/L | 1 | 2/4/2000 |
| Ethylbenzene | 65 | 0.5 | | µg/L | 1 | 2/4/2000 |
| m,p-Xylene | 120 | 1 | | µg/L | 1 | 2/4/2000 |
| o-Xylene | 8.1 | 0.5 | | µg/L | 1 | 2/4/2000 |

**Qualifiers:**

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate



**P.O. BOX 2606 • FARMINGTON, NM 87499**

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

# ANALYTICAL REPORT

**Date:** *09-Feb-00*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0002004 | **Client Sample ID:** | MW #10 |
| **Lab ID:** | 0002004-04A **Matrix:** AQUEOUS | **Collection Date:** | 2/1/2000 11:25:00 AM |
| **Project:** | Abrams J #1 | **COC Record:** | 10350 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DM** |
| Benzene | 31 | 5 | | µg/L | 10 | 2/8/2000 |
| Toluene | 120 | 5 | | µg/L | 10 | 2/8/2000 |
| Ethylbenzene | 300 | 5 | | µg/L | 10 | 2/8/2000 |
| m,p-Xylene | 3200 | 10 | | µg/L | 10 | 2/8/2000 |
| o-Xylene | 300 | 5 | | µg/L | 10 | 2/8/2000 |

***Qualifiers:***

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate



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# CHAIN OF CUSTODY RECORD

ON SITE TECHNOLOGIES, LTD.

612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 327-1496

Date: _____

Page: _____ of _____

| | | | |
|---|---|---|---|
| Purchase Order No.: | Project No. | | |
| SEND INVOICE TO — Name | | REPORT RESULTS TO — Name | Title |
| Company | Dept. | Company | |
| Address | | Mailing Address | |
| City, State, Zip | | City, State, Zip | |
| | | Telephone No. | Telefax No. |

**PROJECT LOCATION:** ABRAMS S # 1

**SAMPLER'S SIGNATURE:**

| SAMPLE IDENTIFICATION | SAMPLE DATE | SAMPLE TIME | SAMPLE MATRIX | SAMPLE PRES. | Number of Containers | ANALYSIS REQUESTED: BTEX (8021) | LAB ID |
|---|---|---|---|---|---|---|---|
| [illegible] | 2-1-00 | 1145 | W | [illegible] | 3 | X | |
| MW #5 | 2-1-00 | 1155 | W | " | 3 | X | |
| [illegible] | 2-1-00 | 1145 | W | " | 3 | X | |
| MW #10 | 2-1-00 | 1135 | W | " | 3 | X | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| | | | |
|---|---|---|---|
| Relinquished by: | Date/Time 2-2-00 1230 | Received by: | Date/Time |
| Relinquished by: | Date/Time | Received by: | Date/Time |
| Relinquished by: | Date/Time | Received by: | Date/Time |

Method of Shipment:

Rush | | 24-48 Hours | | 10 Working Days | | By Date |

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Special Instructions / Remarks:

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

On Site Technologies, LTD.

**Date:** *09-Feb-00*

**CLIENT:** Blagg Engineering
**Work Order:** 0002004
**Project:** Abrams J #1

# QC SUMMARY REPORT

## Method Blank

Sample ID: **MB1** Batch ID: **GC-1_000204** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/4/2000** Prep Date:

Client ID: **0002004** Run ID: **GC-1_000204A** SeqNo: **23410**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | .1592 | 0.5 | | | | | | | | | J |
| Ethylbenzene | .1635 | 0.5 | | | | | | | | | J |
| m,p-Xylene | .5037 | 1 | | | | | | | | | J |
| Methyl tert-Butyl Ether | ND | 1 | | | | | | | | | |
| o-Xylene | .1177 | 0.5 | | | | | | | | | J |
| Toluene | .2486 | 0.5 | | | | | | | | | J |

Sample ID: **MB1** Batch ID: **GC-1_000208** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/8/2000** Prep Date:

Client ID: **0002004** Run ID: **GC-1_000208A** SeqNo: **23609**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | .0689 | 0.5 | | | | | | | | | J |
| Ethylbenzene | .1289 | 0.5 | | | | | | | | | J |
| m,p-Xylene | .174 | 1 | | | | | | | | | J |
| Methyl tert-Butyl Ether | ND | 1 | | | | | | | | | |
| o-Xylene | .1 | 0.5 | | | | | | | | | J |
| Toluene | .1355 | 0.5 | | | | | | | | | J |

**Qualifiers:**

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *09-Feb-00*

**CLIENT:** Blagg Engineering
**Work Order:** 0002004
**Project:** Abrams J #1

# QC SUMMARY REPORT

## Sample Matrix Spike

Sample ID: **0002014-02AMS** Batch ID: **GC-1_000204** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/4/2000** Prep Date:
Client ID: **0002004** Run ID: **GC-1_000204A** SeqNo: **23411**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 546.3 | 5 | 400 | 167.7 | 94.6% | 73 | 126 | | | | |
| Ethylbenzene | 761.1 | 5 | 400 | 366.8 | 98.6% | 88 | 113 | | | | |
| m,p-Xylene | 3700 | 10 | 800 | 2841 | 107.4% | 83 | 112 | | | | |
| Methyl tert-Butyl Ether | 397.7 | 10 | 400 | 8.134 | 97.4% | 81 | 125 | | | | |
| o-Xylene | 802.5 | 5 | 400 | 404.1 | 99.6% | 93 | 110 | | | | |
| Toluene | 1180 | 5 | 400 | 783.1 | 99.2% | 76 | 126 | | | | |

Sample ID: **0002014-02AMSD** Batch ID: **GC-1_000204** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/4/2000** Prep Date:
Client ID: **0002004** Run ID: **GC-1_000204A** SeqNo: **23412**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 554.2 | 5 | 400 | 167.7 | 96.6% | 73 | 126 | 546.3 | 1.5% | 6 | |
| Ethylbenzene | 770.6 | 5 | 400 | 366.8 | 100.9% | 88 | 113 | 761.1 | 1.2% | 5 | |
| m,p-Xylene | 3736 | 10 | 800 | 2841 | 111.9% | 83 | 112 | 3700 | 1.0% | 7 | |
| Methyl tert-Butyl Ether | 415.4 | 10 | 400 | 8.134 | 101.8% | 81 | 125 | 397.7 | 4.4% | 9 | |
| o-Xylene | 820 | 5 | 400 | 404.1 | 104.0% | 93 | 110 | 802.5 | 2.2% | 6 | |
| Toluene | 1196 | 5 | 400 | 783.1 | 103.1% | 76 | 126 | 1180 | 1.3% | 6 | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

**CLIENT:** Blagg Engineering
**Work Order:** 0002004
**Project:** Abrams J #1

# QC SUMMARY REPORT
## Sample Matrix Spike

Sample ID: **0002018-12AMS** Batch ID: **GC-1_000208** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/8/2000** Prep Date:
Client ID: **0002004** Run ID: **GC-1_000208A** SeqNo: **23610**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 1932 | 25 | 2000 | 20.91 | 95.6% | 73 | 126 | | | | |
| Ethylbenzene | 6259 | 25 | 2000 | 4175 | 104.2% | 88 | 113 | | | | |
| m,p-Xylene | 8961 | 50 | 4000 | 4893 | 101.7% | 83 | 112 | | | | |
| Methyl tert-Butyl Ether | 2117 | 50 | 2000 | 162 | 97.8% | 81 | 125 | | | | |
| o-Xylene | 7073 | 25 | 2000 | 4933 | 107.0% | 93 | 110 | | | | |
| Toluene | 2626 | 25 | 2000 | 631.2 | 99.8% | 76 | 126 | | | | |

Sample ID: **0002018-12AMSD** Batch ID: **GC-1_000208** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/8/2000** Prep Date:
Client ID: **0002004** Run ID: **GC-1_000208A** SeqNo: **23611**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 1906 | 25 | 2000 | 20.91 | 94.3% | 73 | 126 | 1932 | 1.3% | 6 | |
| Ethylbenzene | 6181 | 25 | 2000 | 4175 | 100.3% | 88 | 113 | 6259 | 1.2% | 5 | |
| m,p-Xylene | 8855 | 50 | 4000 | 4893 | 99.1% | 83 | 112 | 8961 | 1.2% | 7 | |
| Methyl tert-Butyl Ether | 1952 | 50 | 2000 | 162 | 89.5% | 81 | 125 | 2117 | 8.1% | 9 | |
| o-Xylene | 7002 | 25 | 2000 | 4933 | 103.5% | 93 | 110 | 7073 | 1.0% | 6 | |
| Toluene | 2592 | 25 | 2000 | 631.2 | 98.1% | 76 | 126 | 2626 | 1.3% | 6 | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *09-Feb-00*

**CLIENT:** Blagg Engineering
**Work Order:** 0002004
**Project:** Abrams J #1

# QC SUMMARY REPORT

## Laboratory Control Spike - generic

Sample ID: **LCS WATER** Batch ID: **GC-1_000204** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/4/2000** Prep Date:

Client ID: **0002004** Run ID: **GC-1_000204A** SeqNo: **23409**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 38.31 | 0.5 | 40 | 0.1592 | 95.4% | 89 | 112 | | | | |
| Ethylbenzene | 40.55 | 0.5 | 40 | 0.1635 | 101.0% | 93 | 112 | | | | |
| m,p-Xylene | 77.51 | 1 | 80 | 0.5037 | 96.3% | 88 | 108 | | | | |
| Methyl tert-Butyl Ether | 38.57 | 1 | 40 | 0 | 96.4% | 87 | 115 | | | | |
| o-Xylene | 40.68 | 0.5 | 40 | 0.1177 | 101.4% | 93 | 112 | | | | |
| Toluene | 39.77 | 0.5 | 40 | 0.2486 | 98.8% | 92 | 111 | | | | |

Sample ID: **LCS WATER** Batch ID: **GC-1_000208** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/8/2000** Prep Date:

Client ID: **0002004** Run ID: **GC-1_000208A** SeqNo: **23608**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 38.62 | 0.5 | 40 | 0.0689 | 96.4% | 89 | 112 | | | | |
| Ethylbenzene | 41.62 | 0.5 | 40 | 0.1289 | 103.7% | 93 | 112 | | | | |
| m,p-Xylene | 79.36 | 1 | 80 | 0.174 | 99.0% | 88 | 108 | | | | |
| Methyl tert-Butyl Ether | 38.86 | 1 | 40 | 0 | 97.1% | 87 | 115 | | | | |
| o-Xylene | 41.76 | 0.5 | 40 | 0.1 | 104.1% | 93 | 112 | | | | |
| Toluene | 40.54 | 0.5 | 40 | 0.1355 | 101.0% | 92 | 111 | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *09-Feb-00*

**CLIENT:** Blagg Engineering
**Work Order:** 0002004
**Project:** Abrams J #1

# QC SUMMARY REPORT

## Continuing Calibration Verification Standard

Sample ID: **CCV1 BTEX_0001** Batch ID: **GC-1_000204** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/4/2000** Prep Date:

Client ID: **0002004** Run ID: **GC-1_000204A** SeqNo: **23406**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 19.35 | 0.5 | 20 | 0 | 96.8% | 85 | 115 | | | | |
| Ethylbenzene | 20.71 | 0.5 | 20 | 0 | 103.5% | 85 | 115 | | | | |
| m,p-Xylene | 39.36 | 1 | 40 | 0 | 98.4% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 19.55 | 1 | 20 | 0 | 97.8% | 85 | 115 | | | | |
| o-Xylene | 20.62 | 0.5 | 20 | 0 | 103.1% | 85 | 115 | | | | |
| Toluene | 20.09 | 0.5 | 20 | 0 | 100.5% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 90.22 | 0 | 100 | 0 | 90.2% | 80 | 105 | | | | |
| 4-Bromochlorobenzene | 88.43 | 0 | 100 | 0 | 88.4% | 78 | 108 | | | | |
| Fluorobenzene | 89 | 0 | 100 | 0 | 89.0% | 78 | 108 | | | | |

Sample ID: **CCV2 BTEX_0001** Batch ID: **GC-1_000204** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/4/2000** Prep Date:

Client ID: **0002004** Run ID: **GC-1_000204A** SeqNo: **23407**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 18.93 | 0.5 | 20 | 0 | 94.7% | 85 | 115 | | | | |
| Ethylbenzene | 20.29 | 0.5 | 20 | 0 | 101.5% | 85 | 115 | | | | |
| m,p-Xylene | 38.75 | 1 | 40 | 0 | 96.9% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 19.74 | 1 | 20 | 0 | 98.7% | 85 | 115 | | | | |
| o-Xylene | 20.36 | 0.5 | 20 | 0 | 101.8% | 85 | 115 | | | | |
| Toluene | 19.73 | 0.5 | 20 | 0 | 98.6% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 89.86 | 0 | 100 | 0 | 89.9% | 80 | 105 | | | | |
| 4-Bromochlorobenzene | 88.98 | 0 | 100 | 0 | 89.0% | 78 | 108 | | | | |
| Fluorobenzene | 88.97 | 0 | 100 | 0 | 89.0% | 78 | 108 | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

**CLIENT:** Blagg Engineering
**Work Order:** 0002004
**Project:** Abrams J #1

# QC SUMMARY REPORT
## Continuing Calibration Verification Standard

Sample ID: **CCV3 BTEX_0001** Batch ID: **GC-1_000204** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/4/2000** Prep Date:
Client ID: **0002004** Run ID: **GC-1_000204A** SeqNo: **23408**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 19.31 | 0.5 | 20 | 0 | 96.6% | 85 | 115 | | | | |
| Ethylbenzene | 20.39 | 0.5 | 20 | 0 | 101.9% | 85 | 115 | | | | |
| m,p-Xylene | 38.77 | 1 | 40 | 0 | 96.9% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 19.72 | 1 | 20 | 0 | 98.6% | 85 | 115 | | | | |
| o-Xylene | 20.42 | 0.5 | 20 | 0 | 102.1% | 85 | 115 | | | | |
| Toluene | 19.94 | 0.5 | 20 | 0 | 99.7% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 90.11 | 0 | 100 | 0 | 90.1% | 80 | 105 | | | | |
| 4-Bromochlorobenzene | 87.97 | 0 | 100 | 0 | 88.0% | 78 | 108 | | | | |
| Fluorobenzene | 89.06 | 0 | 100 | 0 | 89.1% | 78 | 108 | | | | |

Sample ID: **CCV1 BTEX_0001** Batch ID: **GC-1_000208** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/8/2000** Prep Date:
Client ID: **0002004** Run ID: **GC-1_000208A** SeqNo: **23605**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 19.58 | 0.5 | 20 | 0 | 97.9% | 85 | 115 | | | | |
| Ethylbenzene | 21.5 | 0.5 | 20 | 0 | 107.5% | 85 | 115 | | | | |
| m,p-Xylene | 40.59 | 1 | 40 | 0 | 101.5% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 20.09 | 1 | 20 | 0 | 100.4% | 85 | 115 | | | | |
| o-Xylene | 21.62 | 0.5 | 20 | 0 | 108.1% | 85 | 115 | | | | |
| Toluene | 20.53 | 0.5 | 20 | 0 | 102.7% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 89.82 | 0 | 100 | 0 | 89.8% | 80 | 105 | | | | |
| 4-Bromochlorobenzene | 88.26 | 0 | 100 | 0 | 88.3% | 78 | 108 | | | | |
| Fluorobenzene | 88.56 | 0 | 100 | 0 | 88.6% | 78 | 108 | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

**CLIENT:** Blagg Engineering
**Work Order:** 0002004
**Project:** Abrams J #1

# QC SUMMARY REPORT

## Continuing Calibration Verification Standard

Sample ID: **CCV2 BTEX_0001** Batch ID: **GC-1_000208** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/8/2000** Prep Date:

Client ID: **0002004** Run ID: **GC-1_000208A** SeqNo: **23606**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 18.99 | 0.5 | 20 | 0 | 94.9% | 85 | 115 | | | | |
| Ethylbenzene | 20.85 | 0.5 | 20 | 0 | 104.3% | 85 | 115 | | | | |
| m,p-Xylene | 39.4 | 1 | 40 | 0 | 98.5% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 20.09 | 1 | 20 | 0 | 100.5% | 85 | 115 | | | | |
| o-Xylene | 21.09 | 0.5 | 20 | 0 | 105.5% | 85 | 115 | | | | |
| Toluene | 19.97 | 0.5 | 20 | 0 | 99.9% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 89.51 | 0 | 100 | 0 | 89.5% | 80 | 105 | | | | |
| 4-Bromochlorobenzene | 89.41 | 0 | 100 | 0 | 89.4% | 78 | 108 | | | | |
| Fluorobenzene | 88.95 | 0 | 100 | 0 | 89.0% | 78 | 108 | | | | |

Sample ID: **CCV3 BTEX_0001** Batch ID: **GC-1_000208** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/8/2000** Prep Date:

Client ID: **0002004** Run ID: **GC-1_000208A** SeqNo: **23607**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 19.81 | 0.5 | 20 | 0 | 99.1% | 85 | 115 | | | | |
| Ethylbenzene | 21.31 | 0.5 | 20 | 0 | 106.5% | 85 | 115 | | | | |
| m,p-Xylene | 40.22 | 1 | 40 | 0 | 100.5% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 20.34 | 1 | 20 | 0 | 101.7% | 85 | 115 | | | | |
| o-Xylene | 21.37 | 0.5 | 20 | 0 | 106.9% | 85 | 115 | | | | |
| Toluene | 20.67 | 0.5 | 20 | 0 | 103.4% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 89.69 | 0 | 100 | 0 | 89.7% | 80 | 105 | | | | |
| 4-Bromochlorobenzene | 89.15 | 0 | 100 | 0 | 89.1% | 78 | 108 | | | | |
| Fluorobenzene | 88.87 | 0 | 100 | 0 | 88.9% | 78 | 108 | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** 09-Feb-00

**CLIENT:** Blagg Engineering
**Work Order:** 0002004
**Project:** Abrams J #1
**Test No:** SW8021B

# QC SUMMARY REPORT
# SURROGATE RECOVERIES

## Aromatic Volatiles by GC/PID

| Sample ID | 14FBZ | 4BCBZ | FLBZ |
|---|---|---|---|
| 0002001-01A | 86.7 | 85.6 | 86.5 |
| 0002004-02A | 87 | 88.2 | 88 |
| 0002004-04A | 88.9 | 86.6 | 88.2 |
| 0002005-01A | 88.6 | 85.4 | 88.1 |
| 0002006-01A | 90.4 | 88.1 | 90.5 |
| 0002006-02A | 89.6 | 87.4 | 90.9 |
| 0002007-01A | 90.7 | 88.2 | 89.7 |
| 0002007-02A | 86.8 | 86.9 | 86.6 |
| 0002007-03A | 90.7 | 88.6 | 89.8 |
| 0002007-04A | 90.3 | 88.7 | 90.1 |
| 0002011-10A | 89.9 | 87.4 | 90 |
| 0002011-11A | 87.7 | 87.7 | 87.9 |
| 0002011-12A | 90.3 | 88.8 | 91.1 |
| 0002011-13A | 90.4 | 88.1 | 90.4 |
| 0002011-14A | 90.3 | 88.8 | 92.4 |
| 0002011-15A | 90.7 | 88.3 | 89.7 |
| 0002014-01A | 90.1 | 87.9 | 89.6 |
| 0002014-02A | 88.6 | 88.8 | 89.5 |
| 0002014-02AMS | 88.6 | 89.6 | 88.4 |
| 0002014-02AMSD | 88.5 | 89.1 | 88.4 |
| 0002014-03A | 79.5 * | 76.7 * | 80.5 |
| 0002014-04A | 90.5 | 88.9 | 90.1 |
| 0002014-05A | 89.8 | 88.7 | 89.1 |
| 0002014-06A | 88.8 | 88.8 | 89 |
| 0002018-01A | 90.4 | 89.8 | 154 * |
| 0002018-02A | 89.9 | 88.5 | 95.8 |
| 0002018-03A | 89.3 | 88.7 | 95.6 |

| Acronym | | Surrogate | QC Limits |
|---|---|---|---|
| 14FBZ | = | 1,4-Difluorobenzene | 80-105 |
| 4BCBZ | = | 4-Bromochlorobenzene | 78-108 |
| FLBZ | = | Fluorobenzene | 78-108 |

*** Surrogate recovery outside acceptance limits**

**CLIENT:** Blagg Engineering
**Work Order:** 0002004
**Project:** Abrams J #1
**Test No:** SW8021B

# QC SUMMARY REPORT
# SURROGATE RECOVERIES

## Aromatic Volatiles by GC/PID

| Sample ID | 14FBZ | 4BCBZ | FLBZ |
|---|---|---|---|
| 0002018-04A | 90.1 | 87.8 | 89.6 |
| 0002018-05A | 89.3 | 89.5 | 115 * |
| 0002018-06A | 89.8 | 88.1 | 89.7 |
| 0002018-07A | 90.3 | 88.5 | 90.1 |
| 0002018-08A | 90.1 | 88.7 | 89.9 |
| 0002018-09A | 90.6 | 87.3 | 89.5 |
| 0002018-10A | 89.7 | 88.8 | 89.6 |
| 0002018-11A | 90.2 | 88.6 | 89.2 |
| 0002018-12A | 92.6 | 87.5 | 89.2 |
| 0002018-12AMS | 91.6 | 89.2 | 88.1 |
| 0002018-12AMSD | 91.4 | 89.4 | 88 |
| 0002018-13A | 90.5 | 88.1 | 90.1 |
| 0002018-14A | 90.2 | 89 | 89.6 |
| 0002018-15A | 90.4 | 89.2 | 89.4 |
| CCV1 BTEX_00010 | 89.8 | 88.3 | 88.6 |
| CCV2 BTEX_00010 | 89.5 | 89.4 | 89 |
| CCV3 BTEX_00010 | 89.7 | 89.1 | 88.9 |
| LCS WATER | 89.5 | 88.7 | 88.2 |
| MB1 | 90.4 | 87.6 | 89.5 |

| Acronym | | Surrogate | QC Limits |
|---|---|---|---|
| 14FBZ | = | 1,4-Difluorobenzene | 80-105 |
| 4BCBZ | = | 4-Bromochlorobenzene | 78-108 |
| FLBZ | = | Fluorobenzene | 78-108 |

*** Surrogate recovery outside acceptance limits**

# BLAGG ENGINEERING, INC.

## MONITOR WELL SAMPLING DATA

CLIENT : CROSS TIMBERS OIL CO.

CHAIN-OF-CUSTODY # : 10358

ABRAMS J # 1
UNIT I, SEC. 29, T29N, R10W

LABORATORY (S) USED : ON - SITE TECH.

*Date* : February 22, 2000

*Filename* : 02-22-00.WK4

SAMPLER : N J V

PROJECT MANAGER : N J V

| WELL # | WELL ELEV. (ft) | WATER ELEV. (ft) | DEPTH TO WATER (ft) | TOTAL DEPTH (ft) | SAMPLING TIME | pH | CONDUCT (umhos) | VOLUME PURGED (gal.) | FREE PRODUCT (ft) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | | - | 45.73 | - | - | - | - | - |
| 2 | MONITOR WELL NOT FOUND - PRESUMED DESTROYED | | | | | | | | |
| 3 | | | - | 50.00 | - | - | - | - | 1.78 |
| 4 | 95.91 | 50.13 | 45.78 | 50.00 | 1120 | 6.7 | 2,600 | 2.00 | - |
| 5 | | | - | 50.00 | - | - | - | - | - |
| 6 | | | - | 50.00 | - | - | - | - | 1.25 |
| 7 | 95.62 | 50.30 | 45.32 | 50.00 | 1105 | 7.5 | 600 | 2.25 | - |
| 8R | 95.78 | 49.89 | 45.89 | 53.10 | 1010 | 7.2 | 2,400 | 3.50 | - |
| 9 | 96.54 | 49.92 | 46.62 | 50.00 | 0925 | 7.0 | 2,200 | 1.75 | - |
| 10 | 97.28 | 50.58 | 46.70 | 50.00 | - | - | - | - | - |
| 11 | 98.61 | 50.75 | 47.86 | 50.00 | - | - | - | - | - |

NOTES : Volume of water purged from well prior to sampling: V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores).

Ideally a minimum of three (3) wellbore volumes:

1.25 " well diameter = 0.19 gallons per foot of water ( or 24 oz. ).

2 bails per foot - small teflon bailer.

3 bails per foot - 3 / 4 " teflon bailer.

2.00 " well diameter = 0.49 gallons per foot of water.

4.00 " well diameter = 1.95 gallons per foot of water.

Comments or note well diameter if not standard 2 ".

Poor recovery in MW # 4 . Fair recovery in MW 's 7 & 9 . Excellent recovery in MW # 8R .

Collected BTEX samples from MW #'s 4, 7, 8R, & 9 only . DTW decreased between

0.75 - 0.90 ft. since 11 / 29 / 99 .

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

# ANALYTICAL REPORT

**Date:** *01-Mar-00*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | CTOC - Abrams J #1 |
| **Work Order:** | 0002050 | **Client Sample ID:** | MW #4 |
| **Lab ID:** | 0002050-01A **Matrix:** AQUEOUS | **Collection Date:** | 2/22/2000 11:20:00 AM |
| **Project:** | CTOC - Abrams J #1 | **COC Record:** | 10358 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DM** |
| Benzene | ND | 0.5 | | µg/L | 1 | 2/28/2000 |
| Toluene | ND | 0.5 | | µg/L | 1 | 2/28/2000 |
| Ethylbenzene | ND | 0.5 | | µg/L | 1 | 2/28/2000 |
| m,p-Xylene | ND | 1 | | µg/L | 1 | 2/28/2000 |
| o-Xylene | ND | 0.5 | | µg/L | 1 | 2/28/2000 |

**Qualifiers:**

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate



**P.O. BOX 2606 • FARMINGTON, NM 87499**

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

# ANALYTICAL REPORT

**Date:** *01-Mar-00*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | CTOC - Abrams J #1 |
| **Work Order:** | 0002050 | **Client Sample ID:** | MW #7 |
| **Lab ID:** | 0002050-02A **Matrix:** AQUEOUS | **Collection Date:** | 2/22/2000 11:05:00 AM |
| **Project:** | CTOC - Abrams J #1 | **COC Record:** | 10358 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DM** |
| Benzene | ND | 0.5 | | µg/L | 1 | 2/28/2000 |
| Toluene | ND | 0.5 | | µg/L | 1 | 2/28/2000 |
| Ethylbenzene | ND | 0.5 | | µg/L | 1 | 2/28/2000 |
| m,p-Xylene | ND | 1 | | µg/L | 1 | 2/28/2000 |
| o-Xylene | ND | 0.5 | | µg/L | 1 | 2/28/2000 |

**Qualifiers:**

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate



**P.O. BOX 2606 • FARMINGTON, NM 87499**

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

# ANALYTICAL REPORT

**Date:** *01-Mar-00*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | CTOC - Abrams J #1 |
| **Work Order:** | 0002050 | **Client Sample ID:** | MW #8R |
| **Lab ID:** | 0002050-03A **Matrix:** AQUEOUS | **Collection Date:** | 2/22/2000 10:10:00 AM |
| **Project:** | CTOC - Abrams J #1 | **COC Record:** | 10358 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DM** |
| Benzene | ND | 0.5 | | µg/L | 1 | 2/28/2000 |
| Toluene | ND | 0.5 | | µg/L | 1 | 2/28/2000 |
| Ethylbenzene | ND | 0.5 | | µg/L | 1 | 2/28/2000 |
| m,p-Xylene | ND | 1 | | µg/L | 1 | 2/28/2000 |
| o-Xylene | ND | 0.5 | | µg/L | 1 | 2/28/2000 |

**Qualifiers:**

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate



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# ANALYTICAL REPORT

**Date:** *01-Mar-00*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | CTOC - Abrams J #1 |
| **Work Order:** | 0002050 | **Client Sample ID:** | MW #9 |
| **Lab ID:** | 0002050-04A **Matrix:** AQUEOUS | **Collection Date:** | 2/22/2000 9:25:00 AM |
| **Project:** | CTOC - Abrams J #1 | **COC Record:** | 10358 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DM** |
| Benzene | ND | 0.5 | | µg/L | 1 | 2/28/2000 |
| Toluene | ND | 0.5 | | µg/L | 1 | 2/28/2000 |
| Ethylbenzene | ND | 0.5 | | µg/L | 1 | 2/28/2000 |
| m,p-Xylene | ND | 1 | | µg/L | 1 | 2/28/2000 |
| o-Xylene | ND | 0.5 | | µg/L | 1 | 2/28/2000 |

***Qualifiers:***

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate



**P.O. BOX 2606 • FARMINGTON, NM 87499**

# CHAIN OF CUSTODY RECORD

ON SITE TECHNOLOGIES, LTD.

612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 327-1496

Date: _____

Page: _____ of _____

| | | | |
|---|---|---|---|
| Purchase Order No.: | Project No. | | |
| SEND INVOICE TO — Name | | REPORT RESULTS TO — Name | Title |
| Company | Dept. | Company | |
| Address | | Mailing Address | |
| City, State, Zip | | City, State, Zip | |
| | | Telephone No. | Telefax No. |

**PROJECT LOCATION:**

**SAMPLER'S SIGNATURE:**

| SAMPLE IDENTIFICATION | SAMPLE DATE | TIME | MATRIX | PRES. | Number of Containers | LAB ID |
|---|---|---|---|---|---|---|
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**ANALYSIS REQUESTED**

| | | | |
|---|---|---|---|
| Relinquished by: | Date/Time | Received by: | Date/Time |
| Relinquished by: | Date/Time | Received by: | Date/Time |
| Relinquished by: | Date/Time | Received by: | Date/Time |

Method of Shipment:

Rush | 24-48 Hours | 10 Working Days | By Date

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Special Instructions / Remarks:

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

On Site Technologies, LTD.

**Date:** *01-Mar-00*

**CLIENT:** Blagg Engineering
**Work Order:** 0002050
**Project:** CTOC - Abrams J #1

# QC SUMMARY REPORT

## Method Blank

Sample ID: **MB1** Batch ID: **GC-1_000228** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/28/2000** Prep Date:

Client ID: **0002050** Run ID: **GC-1_000228A** SeqNo: **24562**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.5 | | | | | | | | | |
| Ethylbenzene | ND | 0.5 | | | | | | | | | |
| m,p-Xylene | ND | 1 | | | | | | | | | |
| Methyl tert-Butyl Ether | ND | 1 | | | | | | | | | |
| o-Xylene | ND | 0.5 | | | | | | | | | |
| Toluene | .0832 | 0.5 | | | | | | | | | J |

**Qualifiers:**

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *01-Mar-00*

**CLIENT:** Blagg Engineering
**Work Order:** 0002050
**Project:** CTOC - Abrams J #1

# QC SUMMARY REPORT

## Sample Matrix Spike

Sample ID: **0002039-02AMS** Batch ID: **GC-1_000228** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/28/2000** Prep Date:
Client ID: **0002050** Run ID: **GC-1_000228A** SeqNo: **24563**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 893.8 | 10 | 800 | 119.1 | 96.8% | 73 | 126 | | | | |
| Ethylbenzene | 1399 | 10 | 800 | 637.1 | 95.3% | 88 | 113 | | | | |
| m,p-Xylene | 6044 | 20 | 1600 | 4542 | 93.8% | 83 | 112 | | | | |
| Methyl tert-Butyl Ether | 812.5 | 20 | 800 | 35.51 | 97.1% | 81 | 125 | | | | |
| o-Xylene | 1389 | 10 | 800 | 617.7 | 96.5% | 93 | 110 | | | | |
| Toluene | 2642 | 10 | 800 | 1861 | 97.7% | 76 | 126 | | | | |

Sample ID: **0002039-02AMSD** Batch ID: **GC-1_000228** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/28/2000** Prep Date:
Client ID: **0002050** Run ID: **GC-1_000228A** SeqNo: **24564**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 891.7 | 10 | 800 | 119.1 | 96.6% | 73 | 126 | 893.8 | 0.2% | 6 | |
| Ethylbenzene | 1394 | 10 | 800 | 637.1 | 94.6% | 88 | 113 | 1399 | 0.4% | 5 | |
| m,p-Xylene | 6019 | 20 | 1600 | 4542 | 92.3% | 83 | 112 | 6044 | 0.4% | 7 | |
| Methyl tert-Butyl Ether | 819.4 | 20 | 800 | 35.51 | 98.0% | 81 | 125 | 812.5 | 0.8% | 9 | |
| o-Xylene | 1390 | 10 | 800 | 617.7 | 96.6% | 93 | 110 | 1389 | 0.0% | 6 | |
| Toluene | 2634 | 10 | 800 | 1861 | 96.7% | 76 | 126 | 2642 | 0.3% | 6 | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *01-Mar-00*

**CLIENT:** Blagg Engineering
**Work Order:** 0002050
**Project:** CTOC - Abrams J #1

# QC SUMMARY REPORT

## Laboratory Control Spike - generic

Sample ID: **LCS WATER** Batch ID: **GC-1_000228** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/28/2000** Prep Date:

Client ID: **0002050** Run ID: **GC-1_000228A** SeqNo: **24561**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 40.38 | 0.5 | 40 | 0 | 100.9% | 89 | 112 | | | | |
| Ethylbenzene | 41.28 | 0.5 | 40 | 0 | 103.2% | 93 | 112 | | | | |
| m,p-Xylene | 78.41 | 1 | 80 | 0 | 98.0% | 88 | 108 | | | | |
| Methyl tert-Butyl Ether | 40.59 | 1 | 40 | 0 | 101.5% | 87 | 115 | | | | |
| o-Xylene | 41.17 | 0.5 | 40 | 0 | 102.9% | 93 | 112 | | | | |
| Toluene | 40.9 | 0.5 | 40 | 0.0832 | 102.0% | 92 | 111 | | | | |

**Qualifiers:**

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *01-Mar-00*

**CLIENT:** Blagg Engineering
**Work Order:** 0002050
**Project:** CTOC - Abrams J #1

# QC SUMMARY REPORT

## Continuing Calibration Verification Standard

Sample ID: **CCV1 BTEX_0001** Batch ID: **GC-1_000228** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/28/2000** Prep Date:

Client ID: **0002050** Run ID: **GC-1_000228A** SeqNo: **24558**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 20.18 | 0.5 | 20 | 0 | 100.9% | 85 | 115 | | | | |
| Ethylbenzene | 20.93 | 0.5 | 20 | 0 | 104.7% | 85 | 115 | | | | |
| m,p-Xylene | 39.52 | 1 | 40 | 0 | 98.8% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 19.8 | 1 | 20 | 0 | 99.0% | 85 | 115 | | | | |
| o-Xylene | 20.84 | 0.5 | 20 | 0 | 104.2% | 85 | 115 | | | | |
| Toluene | 20.44 | 0.5 | 20 | 0 | 102.2% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 89.71 | 0 | 100 | 0 | 89.7% | 80 | 105 | | | | |
| 4-Bromochlorobenzene | 89.1 | 0 | 100 | 0 | 89.1% | 78 | 108 | | | | |
| Fluorobenzene | 88.62 | 0 | 100 | 0 | 88.6% | 78 | 108 | | | | |

Sample ID: **CCV2 BTEX_0001** Batch ID: **GC-1_000228** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/28/2000** Prep Date:

*Client ID:* **0002050** Run ID: **GC-1_000228A** SeqNo: **24559**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 19.4 | 0.5 | 20 | 0 | 97.0% | 85 | 115 | | | | |
| Ethylbenzene | 20.04 | 0.5 | 20 | 0 | 100.2% | 85 | 115 | | | | |
| m,p-Xylene | 37.84 | 1 | 40 | 0 | 94.6% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 20.64 | 1 | 20 | 0 | 103.2% | 85 | 115 | | | | |
| o-Xylene | 20.14 | 0.5 | 20 | 0 | 100.7% | 85 | 115 | | | | |
| Toluene | 19.68 | 0.5 | 20 | 0 | 98.4% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 89.28 | 0 | 100 | 0 | 89.3% | 80 | 105 | | | | |
| 4-Bromochlorobenzene | 89.66 | 0 | 100 | 0 | 89.7% | 78 | 108 | | | | |
| Fluorobenzene | 88.78 | 0 | 100 | 0 | 88.8% | 78 | 108 | | | | |

**Qualifiers:**

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

**CLIENT:** Blagg Engineering
**Work Order:** 0002050
**Project:** CTOC - Abrams J #1

# QC SUMMARY REPORT
## Continuing Calibration Verification Standard

Sample ID: **CCV3 BTEX_0001** Batch ID: **GC-1_000228** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/28/2000** Prep Date:

Client ID: **0002050** Run ID: **GC-1_000228A** SeqNo: **24560**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 38.89 | 0.5 | 40 | 0 | 97.2% | 85 | 115 | | | | |
| Ethylbenzene | 39.58 | 0.5 | 40 | 0 | 99.0% | 85 | 115 | | | | |
| m,p-Xylene | 75.31 | 1 | 80 | 0 | 94.1% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 41.12 | 1 | 40 | 0 | 102.8% | 85 | 115 | | | | |
| o-Xylene | 40.19 | 0.5 | 40 | 0 | 100.5% | 85 | 115 | | | | |
| Toluene | 39.55 | 0.5 | 40 | 0 | 98.9% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 89.13 | 0 | 100 | 0 | 89.1% | 80 | 105 | | | | |
| 4-Bromochlorobenzene | 92.77 | 0 | 100 | 0 | 92.8% | 78 | 108 | | | | |
| Fluorobenzene | 87.92 | 0 | 100 | 0 | 87.9% | 78 | 108 | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** 01-Mar-00

**CLIENT:** Blagg Engineering
**Work Order:** 0002050
**Project:** CTOC - Abrams J #1
**Test No:** SW8021B

# QC SUMMARY REPORT
# SURROGATE RECOVERIES

## Aromatic Volatiles by GC/PID

| Sample ID | 14FBZ | 4BCBZ | FLBZ |
|---|---|---|---|
| 0002039-02A | 87.2 | 88 | 87.8 |
| 0002039-02AMS | 87.3 | 89.3 | 86 |
| 0002039-02AMSD | 87.1 | 89.6 | 86.4 |
| 0002039-03A | 84.8 | 89.3 | 86.2 |
| 0002039-05A | 86.3 | 87.9 | 86.5 |
| 0002039-06A | 84.6 | 86 | 84.8 |
| 0002042-04A | 88.4 | 89.7 | 86.8 |
| 0002043-02A | 85.4 | 89.5 | 85.3 |
| 0002044-02A | 91.2 | 90 | 90.4 |
| 0002048-01A | 90 | 89.6 | 89 |
| 0002048-02A | 91.4 | 91.1 | 90 |
| 0002050-01A | 90.1 | 90.4 | 89 |
| 0002050-02A | 90.4 | 89.4 | 89.2 |
| 0002050-03A | 89.8 | 89.5 | 89.7 |
| 0002050-04A | 90.7 | 89.9 | 89 |
| 0002051-01A | 89.5 | 89.9 | 89.5 |
| 0002053-01A | 89.1 | 88.1 | 89.6 |
| 0002053-02A | 89.6 | 89.5 | 88.4 |
| 0002053-03A | 89.6 | 88.6 | 89.7 |
| 0002053-04A | 89.5 | 89.7 | 89.4 |
| CCV1 BTEX_00010 | 89.7 | 89.1 | 88.6 |
| CCV2 BTEX_00010 | 89.3 | 89.6 | 88.8 |
| CCV3 BTEX_00010 | 89.1 | 92.8 | 87.9 |
| LCS WATER | 88.9 | 89.1 | 87.8 |
| MB1 | 90.2 | 88.3 | 89.7 |

| Acronym | | Surrogate | QC Limits |
|---|---|---|---|
| 14FBZ | = | 1,4-Difluorobenzene | 80-105 |
| 4BCBZ | = | 4-Bromochlorobenzene | 78-108 |
| FLBZ | = | Fluorobenzene | 78-108 |

*** Surrogate recovery outside acceptance limits**

# BLAGG ENGINEERING, INC.

## MONITOR WELL SAMPLING DATA

CLIENT : CROSS TIMBERS OIL CO.

CHAIN-OF-CUSTODY # : 10592

ABRAMS J # 1
UNIT I, SEC. 29, T29N, R10W

LABORATORY (S) USED : ON - SITE TECH.

*Date* : June 2, 2000

SAMPLER : N J V

*Filename* : 06-02-00.WK4

PROJECT MANAGER : N J V

| WELL # | WELL ELEV. (ft) | WATER ELEV. (ft) | DEPTH TO WATER (ft) | TOTAL DEPTH (ft) | SAMPLING TIME | pH | CONDUCT (umhos) | VOLUME PURGED (gal.) | FREE PRODUCT (ft) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | - | DRY | 45.73 | - | - | - | - | - |
| 2 | MONITOR WELL NOT FOUND - PRESUMED DESTROYED | | | | | | | | |
| 3 | | | - | 50.00 | - | - | - | - | 0.01 |
| 4 | 95.91 | 49.79 | 46.12 | 50.00 | - | - | - | - | - |
| 5 | 97.78 | 49.92 | 47.86 | 50.00 | 1150 | 6.9 | 2,300 | 1.00 | - |
| 6 | 96.61 | 49.71 | 46.90 | 50.00 | 1235 | 7.3 | 600 | 1.50 | |
| 7 | 95.62 | 49.85 | 45.77 | 50.00 | 1050 | 7.6 | 700 | 2.25 | - |
| 8R | 95.78 | 49.66 | 46.12 | 53.10 | 1130 | 7.4 | 2,100 | 3.50 | - |
| 9 | 96.54 | - | - | 50.00 | - | - | - | - | - |
| 10 | 97.28 | 49.99 | 47.29 | 50.00 | 1200 | 6.9 | 2,000 | 1.50 | - |
| 11 | 98.61 | 50.19 | 48.42 | 50.00 | - | - | - | - | - |

NOTES : Volume of water purged from well prior to sampling: V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores).

Ideally a minimum of three (3) wellbore volumes:

1.25 " well diameter = 0.19 gallons per foot of water ( or 24 oz. ).

2 bails per foot - small teflon bailer.

3 bails per foot - 3 / 4 " teflon bailer.

2.00 " well diameter = 0.49 gallons per foot of water.

4.00 " well diameter = 1.95 gallons per foot of water.

Comments or note well diameter if not standard 2 ".

Poor recovery in MW # 5 & # 10 . Collected BTEX samples from MW # 's 5, 6, 7, 8R, & 10 .

BEI reclamation system operational at time of sampling .

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ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556
FAX: (505) 327-1496

# ANALYTICAL REPORT

**Date:** *20-Jun-00*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Cross Timbers - Abrams J #1 |
| **Work Order:** | 0006006 | **Client Sample ID:** | MW #5 |
| **Lab ID:** | 0006006-01A **Matrix:** AQUEOUS | **Collection Date:** | 6/2/2000 11:50:00 AM |
| **Project:** | Cross Timbers - Abrams J #1 | **COC Record:** | 10592 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DC** |
| Benzene | ND | 0.5 | | µg/L | 1 | 6/11/2000 |
| Toluene | ND | 0.5 | | µg/L | 1 | 6/11/2000 |
| Ethylbenzene | ND | 0.5 | | µg/L | 1 | 6/11/2000 |
| m,p-Xylene | ND | 1 | | µg/L | 1 | 6/11/2000 |
| o-Xylene | ND | 0.5 | | µg/L | 1 | 6/11/2000 |

**Qualifiers:**

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate



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LAB: (505) 325-1556
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# ANALYTICAL REPORT

**Date:** *20-Jun-00*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Cross Timbers - Abrams J #1 |
| **Work Order:** | 0006006 | **Client Sample ID:** | MW #6 |
| **Lab ID:** | 0006006-05A **Matrix:** AQUEOUS | **Collection Date:** | 6/2/2000 12:35:00 PM |
| **Project:** | Cross Timbers - Abrams J #1 | **COC Record:** | 10592 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DC** |
| Benzene | 51 | 25 | | µg/L | 50 | 6/11/2000 |
| Toluene | 1300 | 25 | | µg/L | 50 | 6/11/2000 |
| Ethylbenzene | 410 | 25 | | µg/L | 50 | 6/11/2000 |
| m,p-Xylene | 8900 | 50 | | µg/L | 50 | 6/11/2000 |
| o-Xylene | 1800 | 25 | | µg/L | 50 | 6/11/2000 |

**Qualifiers:**

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate



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LAB: (505) 325-1556
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# ANALYTICAL REPORT

**Date:** *20-Jun-00*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Cross Timbers - Abrams J #1 |
| **Work Order:** | 0006006 | **Client Sample ID:** | MW #7 |
| **Lab ID:** | 0006006-02A **Matrix:** AQUEOUS | **Collection Date:** | 6/2/2000 10:50:00 AM |
| **Project:** | Cross Timbers - Abrams J #1 | **COC Record:** | 10592 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DC** |
| Benzene | ND | 0.5 | | µg/L | 1 | 6/11/2000 |
| Toluene | ND | 0.5 | | µg/L | 1 | 6/11/2000 |
| Ethylbenzene | ND | 0.5 | | µg/L | 1 | 6/11/2000 |
| m,p-Xylene | ND | 1 | | µg/L | 1 | 6/11/2000 |
| o-Xylene | ND | 0.5 | | µg/L | 1 | 6/11/2000 |

**Qualifiers:**

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate



**P.O. BOX 2606 • FARMINGTON, NM 87499**

OFF: (505) 325-5667
FAX: (505) 327-1496

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556
FAX: (505) 327-1496

# ANALYTICAL REPORT

**Date:** *20-Jun-00*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Cross Timbers - Abrams J #1 |
| **Work Order:** | 0006006 | **Client Sample ID:** | MW #8R |
| **Lab ID:** | 0006006-03A **Matrix:** AQUEOUS | **Collection Date:** | 6/2/2000 11:30:00 AM |
| **Project:** | Cross Timbers - Abrams J #1 | **COC Record:** | 10592 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DC** |
| Benzene | ND | 0.5 | | µg/L | 1 | 6/11/2000 |
| Toluene | ND | 0.5 | | µg/L | 1 | 6/11/2000 |
| Ethylbenzene | ND | 0.5 | | µg/L | 1 | 6/11/2000 |
| m,p-Xylene | ND | 1 | | µg/L | 1 | 6/11/2000 |
| o-Xylene | ND | 0.5 | | µg/L | 1 | 6/11/2000 |

**Qualifiers:**

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate



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# ANALYTICAL REPORT

**Date:** *20-Jun-00*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Cross Timbers - Abrams J #1 |
| **Work Order:** | 0006006 | **Client Sample ID:** | MW #10 |
| **Lab ID:** | 0006006-04A **Matrix:** AQUEOUS | **Collection Date:** | 6/2/2000 12:00:00 PM |
| **Project:** | Cross Timbers - Abrams J #1 | **COC Record:** | 10592 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DC** |
| Benzene | 13 | 5 | | µg/L | 10 | 6/11/2000 |
| Toluene | 8 | 5 | | µg/L | 10 | 6/11/2000 |
| Ethylbenzene | 10 | 5 | | µg/L | 10 | 6/11/2000 |
| m,p-Xylene | 370 | 10 | | µg/L | 10 | 6/11/2000 |
| o-Xylene | 45 | 5 | | µg/L | 10 | 6/11/2000 |

**Qualifiers:**

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate



**P.O. BOX 2606 • FARMINGTON, NM 87499**

# CHAIN OF CUSTODY RECORD

ON SITE TECHNOLOGIES, LTD.

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LAB: (505) 325-5667 • FAX: (505) 327-1496

Date: _____

Page: _____ of _____

| | | | |
|---|---|---|---|
| Purchase Order No.: | Project No. | | |
| SEND INVOICE TO: Name | | REPORT RESULTS TO: Name | Title |
| Company | Dept. | Company | |
| Address | | Mailing Address | |
| City, State, Zip | | City, State, Zip | |
| | | Telephone No. | Telefax No. |

**PROJECT LOCATION:**

**SAMPLER'S SIGNATURE:**

| SAMPLE IDENTIFICATION | SAMPLE DATE | SAMPLE TIME | SAMPLE MATRIX | SAMPLE PRES. | Number of Containers | ANALYSIS REQUESTED: BTEX (8021) | LAB ID |
|---|---|---|---|---|---|---|---|
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|---|---|---|---|
| Relinquished by: | Date/Time | Received by: | Date/Time |
| Relinquished by: | Date/Time | Received by: | Date/Time |
| Relinquished by: | Date/Time | Received by: | Date/Time |

Method of Shipment:

Rush | 24-48 Hours | 10 Working Days | By Date

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Special Instructions / Remarks:

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

On Site Technologies, LTD.

**Date:** *20-Jun-00*

**CLIENT:** Blagg Engineering
**Work Order:** 0006006
**Project:** Cross Timbers - Abrams J #1

# QC SUMMARY REPORT
## Method Blank

Sample ID: **MB1** Batch ID: **GC-1_000611** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **6/11/2000** Prep Date:

Client ID: **0006006** Run ID: **GC-1_000611A** SeqNo: **28499**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | .0637 | 0.5 | | | | | | | | | J |
| Ethylbenzene | .0623 | 0.5 | | | | | | | | | J |
| m,p-Xylene | .1196 | 1 | | | | | | | | | J |
| Methyl tert-Butyl Ether | ND | 1 | | | | | | | | | |
| o-Xylene | .0999 | 0.5 | | | | | | | | | J |
| Toluene | .1549 | 0.5 | | | | | | | | | J |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *20-Jun-00*

**CLIENT:** Blagg Engineering
**Work Order:** 0006006
**Project:** Cross Timbers - Abrams J #1

# QC SUMMARY REPORT

## Sample Matrix Spike

Sample ID: **0006013-03AMS** Batch ID: **GC-1_000611** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **6/11/2000** Prep Date:

Client ID: **0006006** Run ID: **GC-1_000611A** SeqNo: **28500**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 6433 | 50 | 4000 | 2368 | 101.6% | 73 | 126 | | | | |
| Ethylbenzene | 4675 | 50 | 4000 | 678.8 | 99.9% | 88 | 113 | | | | |
| m,p-Xylene | 10100 | 100 | 8000 | 2226 | 98.5% | 83 | 112 | | | | |
| Methyl tert-Butyl Ether | 4145 | 100 | 4000 | 258.9 | 97.2% | 81 | 125 | | | | |
| o-Xylene | 4492 | 50 | 4000 | 438.8 | 101.3% | 93 | 110 | | | | |
| Toluene | 6509 | 50 | 4000 | 2430 | 102.0% | 76 | 126 | | | | |

Sample ID: **0006013-03AMSD** Batch ID: **GC-1_000611** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **6/11/2000** Prep Date:

Client ID: **0006006** Run ID: **GC-1_000611A** SeqNo: **28501**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 6267 | 50 | 4000 | 2368 | 97.5% | 73 | 126 | 6433 | 2.6% | 6 | |
| Ethylbenzene | 4556 | 50 | 4000 | 678.8 | 96.9% | 88 | 113 | 4675 | 2.6% | 5 | |
| m,p-Xylene | 9862 | 100 | 8000 | 2226 | 95.4% | 83 | 112 | 10100 | 2.4% | 7 | |
| Methyl tert-Butyl Ether | 4095 | 100 | 4000 | 258.9 | 95.9% | 81 | 125 | 4145 | 1.2% | 9 | |
| o-Xylene | 4403 | 50 | 4000 | 438.8 | 99.1% | 93 | 110 | 4492 | 2.0% | 6 | |
| Toluene | 6349 | 50 | 4000 | 2430 | 98.0% | 76 | 126 | 6509 | 2.5% | 6 | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *20-Jun-00*

**CLIENT:** Blagg Engineering
**Work Order:** 0006006
**Project:** Cross Timbers - Abrams J #1

# QC SUMMARY REPORT

## Laboratory Control Spike - generic

Sample ID: **LCS WATER** Batch ID: **GC-1_000611** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **6/11/2000** Prep Date:

Client ID: **0006006** Run ID: **GC-1_000611A** SeqNo: **28498**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 41 | 0.5 | 40 | 0.0637 | 102.3% | 89 | 112 | | | | |
| Ethylbenzene | 40.91 | 0.5 | 40 | 0.0623 | 102.1% | 93 | 112 | | | | |
| m,p-Xylene | 80.6 | 1 | 80 | 0.1196 | 100.6% | 88 | 108 | | | | |
| Methyl tert-Butyl Ether | 41.85 | 1 | 40 | 0 | 104.6% | 87 | 115 | | | | |
| o-Xylene | 41.25 | 0.5 | 40 | 0.0999 | 102.9% | 93 | 112 | | | | |
| Toluene | 41.21 | 0.5 | 40 | 0.1549 | 102.6% | 92 | 111 | | | | |

**Qualifiers:**

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *20-Jun-00*

**CLIENT:** Blagg Engineering
**Work Order:** 0006006
**Project:** Cross Timbers - Abrams J #1

# QC SUMMARY REPORT

## Continuing Calibration Verification Standard

Sample ID: **CCV1 BTEX_0004** Batch ID: **GC-1_000611** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **6/11/2000** Prep Date:

Client ID: **0006006** Run ID: **GC-1_000611A** SeqNo: **28495**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 20 | 0.5 | 20 | 0 | 100.0% | 85 | 115 | | | | |
| Ethylbenzene | 20.1 | 0.5 | 20 | 0 | 100.5% | 85 | 115 | | | | |
| m,p-Xylene | 39.34 | 1 | 40 | 0 | 98.4% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 20.51 | 1 | 20 | 0 | 102.6% | 85 | 115 | | | | |
| o-Xylene | 20.32 | 0.5 | 20 | 0 | 101.6% | 85 | 115 | | | | |
| Toluene | 20.15 | 0.5 | 20 | 0 | 100.7% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 90.27 | 0 | 100 | 0 | 90.3% | 80 | 105 | | | | |
| 4-Bromochlorobenzene | 86.68 | 0 | 100 | 0 | 86.7% | 78 | 108 | | | | |
| Fluorobenzene | 90.45 | 0 | 100 | 0 | 90.4% | 78 | 108 | | | | |

Sample ID: **CCV2 BTEX_0004** Batch ID: **GC-1_000611** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **6/11/2000** Prep Date:

Client ID: **0006006** Run ID: **GC-1_000611A** SeqNo: **28496**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 19.73 | 0.5 | 20 | 0 | 98.6% | 85 | 115 | | | | |
| Ethylbenzene | 19.78 | 0.5 | 20 | 0 | 98.9% | 85 | 115 | | | | |
| m,p-Xylene | 38.53 | 1 | 40 | 0 | 96.3% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 20.32 | 1 | 20 | 0 | 101.6% | 85 | 115 | | | | |
| o-Xylene | 20.12 | 0.5 | 20 | 0 | 100.6% | 85 | 115 | | | | |
| Toluene | 19.9 | 0.5 | 20 | 0 | 99.5% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 89.99 | 0 | 100 | 0 | 90.0% | 80 | 105 | | | | |
| 4-Bromochlorobenzene | 82.9 | 0 | 100 | 0 | 82.9% | 78 | 108 | | | | |
| Fluorobenzene | 89.18 | 0 | 100 | 0 | 89.2% | 78 | 108 | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

**CLIENT:** Blagg Engineering
**Work Order:** 0006006
**Project:** Cross Timbers - Abrams J #1

# QC SUMMARY REPORT
## Continuing Calibration Verification Standard

Sample ID: **CCV3 BTEX_0004** Batch ID: **GC-1_000611** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **6/11/2000** Prep Date:

Client ID: **0006006** Run ID: **GC-1_000611A** SeqNo: **28497**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 42.22 | 0.5 | 40 | 0 | 105.6% | 85 | 115 | | | | |
| Ethylbenzene | 42.32 | 0.5 | 40 | 0 | 105.8% | 85 | 115 | | | | |
| m,p-Xylene | 82.02 | 1 | 80 | 0 | 102.5% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 41.88 | 1 | 40 | 0 | 104.7% | 85 | 115 | | | | |
| o-Xylene | 42.6 | 0.5 | 40 | 0 | 106.5% | 85 | 115 | | | | |
| Toluene | 42.54 | 0.5 | 40 | 0 | 106.3% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 89.76 | 0 | 100 | 0 | 89.8% | 80 | 105 | | | | |
| 4-Bromochlorobenzene | 87.82 | 0 | 100 | 0 | 87.8% | 78 | 108 | | | | |
| Fluorobenzene | 88.91 | 0 | 100 | 0 | 88.9% | 78 | 108 | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** 20-Jun-00

**CLIENT:** Blagg Engineering
***Work Order:*** *0006006*
**Project:** Cross Timbers - Abrams J #1
**Test No:** SW8021B

# QC SUMMARY REPORT
# SURROGATE RECOVERIES

## Aromatic Volatiles by GC/PID

| Sample ID | 14FBZ | 4BCBZ | FLBZ |
|---|---|---|---|
| 0006005-11A | 90.6 | 84.7 | 104 |
| 0006005-12A | 89.3 | 82.6 | 88.4 |
| 0006006-01A | 90.7 | 81.9 | 89.5 |
| 0006006-02A | 90.7 | 85.4 | 90.3 |
| 0006006-03A | 90.6 | 85 | 90.1 |
| 0006006-04A | 90.1 | 81.5 | 89.5 |
| 0006006-05A | 90.4 | 83.8 | 89.7 |
| 0006007-01A | 82.5 | 84.3 | 96.4 |
| 0006007-02A | 89.8 | 84.4 | 89.6 |
| 0006007-03A | 90.2 | 84.2 | 90.2 |
| 0006012-01A | 90.8 | 85.3 | 89.9 |
| 0006012-02A | 90.7 | 88.4 | 90.8 |
| 0006013-01A | 90.6 | 85.2 | 89.9 |
| 0006013-02A | 90.8 | 84.6 | 90.2 |
| 0006013-03A | 89.7 | 82.5 | 89.1 |
| 0006013-03AMS | 89.3 | 83.2 | 89 |
| 0006013-03AMSD | 89.5 | 82.5 | 89 |
| 0006013-04A | 90.6 | 85.1 | 89.2 |
| 0006013-05A | 90.2 | 83.5 | 90 |
| 0006023-01A | 90.8 | 85.2 | 90 |
| CCV1 BTEX_00040 | 90.3 | 86.7 | 90.4 |
| CCV2 BTEX_00040 | 90 | 82.9 | 89.2 |
| CCV3 BTEX_00040 | 89.8 | 87.8 | 88.9 |
| LCS WATER | 89.7 | 86.8 | 89.9 |
| MB1 | 90.9 | 84 | 90.8 |

| Acronym | | Surrogate | QC Limits |
|---|---|---|---|
| 14FBZ | = | 1,4-Difluorobenzene | 80-105 |
| 4BCBZ | = | 4-Bromochlorobenzene | 78-108 |
| FLBZ | = | Fluorobenzene | 78-108 |

*** Surrogate recovery outside acceptance limits**

# BLAGG ENGINEERING, INC.

## MONITOR WELL SAMPLING DATA

**CLIENT :** CROSS TIMBERS OIL CO.

**CHAIN-OF-CUSTODY # :** 10768

**ABRAMS J # 1**
**UNIT I, SEC. 29, T29N, R10W**

**LABORATORY (S) USED :** ON - SITE TECH.

*Date :* August 30, 2000

**SAMPLER :** N J V

*Filename :* 08-30-00.WK4

**PROJECT MANAGER :** N J V

| WELL # | WELL ELEV. (ft) | WATER ELEV. (ft) | DEPTH TO WATER (ft) | TOTAL DEPTH (ft) | SAMPLING TIME | pH | CONDUCT (umhos) | VOLUME PURGED (gal.) | FREE PRODUCT (ft) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | - | DRY | 45.73 | - | - | - | - | - |
| 2 | MONITOR WELL NOT FOUND - PRESUMED DESTROYED | | | | | | | | |
| 3 | 95.83 | | - | 50.00 | - | - | - | - | - |
| 4 | 95.91 | 50.65 | 45.26 | 50.00 | - | - | - | - | - |
| 5 | 97.78 | 50.83 | 46.95 | 50.00 | 1135 | 7.0 | 2,500 | 1.50 | - |
| 6 | 96.61 | 50.75 | 45.86 | 50.00 | 1110 | 7.0 | 900 | 2.00 | - |
| 7 | 95.62 | 50.87 | 44.75 | 50.00 | - | - | - | - | - |
| 8R | 95.78 | | - | 53.10 | - | - | - | - | - |
| 9 | 96.54 | | - | 50.00 | - | - | - | - | - |
| 10 | 97.28 | | - | 50.00 | - | - | - | - | - |
| 11 | 98.61 | 51.13 | 47.48 | 50.00 | - | - | - | - | - |

NOTES : Volume of water purged from well prior to sampling: V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores).

Ideally a minimum of three (3) wellbore volumes:

1.25 " well diameter = 0.19 gallons per foot of water ( or 24 oz. ).

2 bails per foot - small teflon bailer.

3 bails per foot - 3 / 4 " teflon bailer.

2.00 " well diameter = 0.49 gallons per foot of water.

4.00 " well diameter = 1.95 gallons per foot of water.

Comments or note well diameter if not standard 2".

Poor recovery in MW #5 & fair recovery in #6 . Collected BTEX samples from MW #'s 5 & 6 onl

BEI reclamation system operational at time of sampling .

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ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556
FAX: (505) 327-1496

# ANALYTICAL REPORT

**Date:** *07-Sep-00*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0008053 | **Client Sample ID:** | MW #5 |
| **Lab ID:** | 0008053-01A **Matrix:** AQUEOUS | **Collection Date:** | 8/30/2000 11:35:00 AM |
| **Project:** | Cross Timbers; Abrams J #1 | **COC Record:** | 10768 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DM** |
| Benzene | ND | 0.5 | | µg/L | 1 | 8/31/2000 |
| Toluene | ND | 0.5 | | µg/L | 1 | 8/31/2000 |
| Ethylbenzene | ND | 0.5 | | µg/L | 1 | 8/31/2000 |
| m,p-Xylene | ND | 1 | | µg/L | 1 | 8/31/2000 |
| o-Xylene | ND | 0.5 | | µg/L | 1 | 8/31/2000 |

***Qualifiers:***

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate



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FAX: (505) 327-1496

# ANALYTICAL REPORT

**Date:** *07-Sep-00*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0008053 | **Client Sample ID:** | MW #6 |
| **Lab ID:** | 0008053-02A **Matrix:** AQUEOUS | **Collection Date:** | 8/30/2000 11:10:00 AM |
| **Project:** | Cross Timbers; Abrams J #1 | **COC Record:** | 10768 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DM** |
| Benzene | ND | 2.5 | | µg/L | 5 | 9/1/2000 |
| Toluene | 12 | 2.5 | | µg/L | 5 | 9/1/2000 |
| Ethylbenzene | 130 | 25 | | µg/L | 50 | 8/31/2000 |
| m,p-Xylene | 4100 | 50 | | µg/L | 50 | 8/31/2000 |
| o-Xylene | 700 | 25 | | µg/L | 50 | 8/31/2000 |

***Qualifiers:***

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate



**P.O. BOX 2606 • FARMINGTON, NM 87499**

# CHAIN OF CUSTODY RECORD

ON SITE TECHNOLOGIES, LTD.

612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 327-1496

Date: _____

Page: _____ of _____

| | | | |
|---|---|---|---|
| Purchase Order No.: | Project No. | | |
| SEND INVOICE TO: Name | | REPORT RESULTS TO: Name | Title |
| Company | Dept. | Company | |
| Address | | Mailing Address | |
| City, State, Zip | | City, State, Zip | |
| | | Telephone No. | Telefax No. |

**PROJECT LOCATION:**

**SAMPLER'S SIGNATURE:**

| SAMPLE IDENTIFICATION | SAMPLE DATE | SAMPLE TIME | SAMPLE MATRIX | SAMPLE PRES. | Number of Containers | ANALYSIS REQUESTED: BTEX (8021) | LAB ID |
|---|---|---|---|---|---|---|---|
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|---|---|---|---|
| Relinquished by: | Date/Time | Received by: | Date/Time |
| Relinquished by: | Date/Time | Received by: | Date/Time |
| Relinquished by: | Date/Time | Received by: | Date/Time |

Method of Shipment:

Rush | 24-48 Hours | 10 Working Days | By Date

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Special Instructions / Remarks:

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

On Site Technologies, LTD.

**Date:** *07-Sep-00*

**CLIENT:** Blagg Engineering
**Work Order:** 0008053
**Project:** Cross Timbers; Abrams J #1

# QC SUMMARY REPORT

## Method Blank

Sample ID: **MB1** Batch ID: **GC-1_000831** Test Code: **SW8021B** Units: **µg/L** Analysis Date **8/31/2000** Prep Date:

Client ID: **0008053** Run ID: **GC-1_000831A** SeqNo: **30974**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.5 | | | | | | | | | |
| Ethylbenzene | ND | 0.5 | | | | | | | | | |
| m,p-Xylene | .1135 | 1 | | | | | | | | | J |
| o-Xylene | ND | 0.5 | | | | | | | | | |
| Toluene | ND | 0.5 | | | | | | | | | |

Sample ID: **MB1** Batch ID: **GC-1_000901** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/1/2000** Prep Date:

Client ID: **0008053** Run ID: **GC-1_000901A** SeqNo: **30988**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.5 | | | | | | | | | |
| Ethylbenzene | ND | 0.5 | | | | | | | | | |
| m,p-Xylene | ND | 1 | | | | | | | | | |
| o-Xylene | ND | 0.5 | | | | | | | | | |
| Toluene | ND | 0.5 | | | | | | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *07-Sep-00*

**CLIENT:** Blagg Engineering
**Work Order:** 0008053
**Project:** Cross Timbers; Abrams J #1

# QC SUMMARY REPORT
## Sample Matrix Spike

Sample ID: **0008053-02AMS** Batch ID: **GC-1_000831** Test Code: **SW8021B** Units: **µg/L** Analysis Date **8/31/2000** Prep Date:
Client ID: **MW #6** **0008053** Run ID: **GC-1_000831A** SeqNo: **30975**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 1967 | 25 | 2000 | 0 | 98.3% | 88 | 112 | | | | |
| Ethylbenzene | 2211 | 25 | 2000 | 128.1 | 104.1% | 86 | 113 | | | | |
| m,p-Xylene | 8232 | 50 | 4000 | 4139 | 102.3% | 85 | 108 | | | | |
| o-Xylene | 2752 | 25 | 2000 | 699 | 102.6% | 92 | 110 | | | | |
| Toluene | 2078 | 25 | 2000 | 12.03 | 103.3% | 88 | 116 | | | | |

Sample ID: **0008053-02AMSD** Batch ID: **GC-1_000831** Test Code: **SW8021B** Units: **µg/L** Analysis Date **8/31/2000** Prep Date:
Client ID: **MW #6** **0008053** Run ID: **GC-1_000831A** SeqNo: **30976**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 1928 | 25 | 2000 | 0 | 96.4% | 88 | 112 | 1967 | 2.0% | 6 | |
| Ethylbenzene | 2170 | 25 | 2000 | 128.1 | 102.1% | 86 | 113 | 2211 | 1.9% | 6 | |
| m,p-Xylene | 8081 | 50 | 4000 | 4139 | 98.6% | 85 | 108 | 8232 | 1.8% | 6 | |
| o-Xylene | 2708 | 25 | 2000 | 699 | 100.5% | 92 | 110 | 2752 | 1.6% | 6 | |
| Toluene | 2038 | 25 | 2000 | 12.03 | 101.3% | 88 | 116 | 2078 | 1.9% | 6 | |

Sample ID: **0008054-01AMS** Batch ID: **GC-1_000901** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/1/2000** Prep Date:
Client ID: **0008053** Run ID: **GC-1_000901A** SeqNo: **30989**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 192.9 | 2.5 | 200 | 0 | 96.4% | 88 | 112 | | | | |
| Ethylbenzene | 210.7 | 2.5 | 200 | 5.1 | 102.8% | 86 | 113 | | | | |
| m,p-Xylene | 1029 | 5 | 400 | 600 | 107.3% | 85 | 108 | | | | |
| o-Xylene | 237.8 | 2.5 | 200 | 29 | 104.4% | 92 | 110 | | | | |
| Toluene | 210.5 | 2.5 | 200 | 9.8 | 100.4% | 88 | 116 | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

**CLIENT:** Blagg Engineering
**Work Order:** 0008053
**Project:** Cross Timbers; Abrams J #1

# QC SUMMARY REPORT
## Sample Matrix Spike Duplicate

Sample ID: **0008054-01AMSD** Batch ID: **GC-1_000901** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/1/2000** Prep Date:
Client ID: **0008053** Run ID: **GC-1_000901A** SeqNo: **30990**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 192 | 2.5 | 200 | 0 | 96.0% | 88 | 112 | 192.9 | 0.4% | 6 | |
| Ethylbenzene | 209.7 | 2.5 | 200 | 5.1 | 102.3% | 86 | 113 | 210.7 | 0.5% | 6 | |
| m,p-Xylene | 1031 | 5 | 400 | 600 | 107.8% | 85 | 108 | 1029 | 0.2% | 6 | |
| o-Xylene | 244.2 | 2.5 | 200 | 29 | 107.6% | 92 | 110 | 237.8 | 2.7% | 6 | |
| Toluene | 212.2 | 2.5 | 200 | 9.8 | 101.2% | 88 | 116 | 210.5 | 0.8% | 6 | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *07-Sep-00*

**CLIENT:** Blagg Engineering
**Work Order:** 0008053
**Project:** Cross Timbers; Abrams J #1

# QC SUMMARY REPORT

## Laboratory Control Spike - generic

Sample ID: **LCS SOIL** Batch ID: **GC-1_000831** Test Code: **SW8021B** Units: **µg/L** Analysis Date **8/31/2000** Prep Date:

Client ID: **0008053** Run ID: **GC-1_000831A** SeqNo: **30973**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 39.81 | 0.5 | 40 | 0 | 99.5% | 96 | 111 | | | | |
| Ethylbenzene | 42.34 | 0.5 | 40 | 0 | 105.8% | 96 | 111 | | | | |
| m,p-Xylene | 84.01 | 1 | 80 | 0.1135 | 104.9% | 92 | 105 | | | | |
| o-Xylene | 42.05 | 0.5 | 40 | 0 | 105.1% | 97 | 110 | | | | |
| Toluene | 41.37 | 0.5 | 40 | 0 | 103.4% | 97 | 109 | | | | |

Sample ID: **LCS WATER** Batch ID: **GC-1_000901** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/1/2000** Prep Date:

Client ID: **0008053** Run ID: **GC-1_000901A** SeqNo: **30987**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 39.05 | 0.5 | 40 | 0 | 97.6% | 96 | 111 | | | | |
| Ethylbenzene | 41.7 | 0.5 | 40 | 0 | 104.2% | 96 | 111 | | | | |
| m,p-Xylene | 82.75 | 1 | 80 | 0 | 103.4% | 92 | 105 | | | | |
| o-Xylene | 41.44 | 0.5 | 40 | 0 | 103.6% | 97 | 110 | | | | |
| Toluene | 40.64 | 0.5 | 40 | 0 | 101.6% | 97 | 109 | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *07-Sep-00*

**CLIENT:** Blagg Engineering
**Work Order:** 0008053
**Project:** Cross Timbers; Abrams J #1

# QC SUMMARY REPORT

## Continuing Calibration Verification Standard

Sample ID: **CCV1 BTEX_0007** Batch ID: **GC-1_000831** Test Code: **SW8021B** Units: **µg/L** Analysis Date **8/31/2000** Prep Date:

Client ID: **0008053** Run ID: **GC-1_000831A** SeqNo: **30971**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 19.61 | 0.5 | 20 | 0 | 98.1% | 85 | 115 | | | | |
| Ethylbenzene | 21.04 | 0.5 | 20 | 0 | 105.2% | 85 | 115 | | | | |
| m,p-Xylene | 42.02 | 1 | 40 | 0 | 105.0% | 85 | 115 | | | | |
| o-Xylene | 21.04 | 0.5 | 20 | 0 | 105.2% | 85 | 115 | | | | |
| Toluene | 20.46 | 0.5 | 20 | 0 | 102.3% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 84.76 | 0 | 100 | 0 | 84.8% | 79 | 101 | | | | |
| 4-Bromochlorobenzene | 98.28 | 0 | 100 | 0 | 98.3% | 78 | 99 | | | | |
| Fluorobenzene | 78.67 | 0 | 100 | 0 | 78.7% | 76 | 103 | | | | |

Sample ID: **CCV2 BTEX_0007** Batch ID: **GC-1_000831** Test Code: **SW8021B** Units: **µg/L** Analysis Date **8/31/2000** Prep Date:

Client ID: **0008053** Run ID: **GC-1_000831A** SeqNo: **30972**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 19.7 | 0.5 | 20 | 0 | 98.5% | 85 | 115 | | | | |
| Ethylbenzene | 20.72 | 0.5 | 20 | 0 | 103.6% | 85 | 115 | | | | |
| m,p-Xylene | 41.42 | 1 | 40 | 0 | 103.6% | 85 | 115 | | | | |
| o-Xylene | 20.73 | 0.5 | 20 | 0 | 103.7% | 85 | 115 | | | | |
| Toluene | 20.25 | 0.5 | 20 | 0 | 101.3% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 84.9 | 0 | 100 | 0 | 84.9% | 79 | 101 | | | | |
| 4-Bromochlorobenzene | 96.39 | 0 | 100 | 0 | 96.4% | 78 | 99 | | | | |
| Fluorobenzene | 79.35 | 0 | 100 | 0 | 79.4% | 76 | 103 | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

**CLIENT:** Blagg Engineering
**Work Order:** 0008053
**Project:** Cross Timbers; Abrams J #1

# QC SUMMARY REPORT
## Continuing Calibration Verification Standard

Sample ID: **CCV1 BTEX_0007** Batch ID: **GC-1_000901** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/1/2000** Prep Date:
Client ID: **0008053** Run ID: **GC-1_000901A** SeqNo: **30985**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 20.34 | 0.5 | 20 | 0 | 101.7% | 85 | 115 | | | | |
| Ethylbenzene | 21.8 | 0.5 | 20 | 0 | 109.0% | 85 | 115 | | | | |
| m,p-Xylene | 43.51 | 1 | 40 | 0 | 108.8% | 85 | 115 | | | | |
| o-Xylene | 21.7 | 0.5 | 20 | 0 | 108.5% | 85 | 115 | | | | |
| Toluene | 21.16 | 0.5 | 20 | 0 | 105.8% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 88.03 | 0 | 100 | 0 | 88.0% | 79 | 101 | | | | |
| 4-Bromochlorobenzene | 90.8 | 0 | 100 | 0 | 90.8% | 78 | 99 | | | | |
| Fluorobenzene | 86.95 | 0 | 100 | 0 | 86.9% | 76 | 103 | | | | |

Sample ID: **CCV2 BTEX_0007** Batch ID: **GC-1_000901** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/1/2000** Prep Date:
Client ID: **0008053** Run ID: **GC-1_000901A** SeqNo: **30986**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 19.74 | 0.5 | 20 | 0 | 98.7% | 85 | 115 | | | | |
| Ethylbenzene | 20.95 | 0.5 | 20 | 0 | 104.7% | 85 | 115 | | | | |
| m,p-Xylene | 41.89 | 1 | 40 | 0 | 104.7% | 85 | 115 | | | | |
| o-Xylene | 20.96 | 0.5 | 20 | 0 | 104.8% | 85 | 115 | | | | |
| Toluene | 20.47 | 0.5 | 20 | 0 | 102.4% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 88.44 | 0 | 100 | 0 | 88.4% | 79 | 101 | | | | |
| 4-Bromochlorobenzene | 86.46 | 0 | 100 | 0 | 86.5% | 78 | 99 | | | | |
| Fluorobenzene | 87.57 | 0 | 100 | 0 | 87.6% | 76 | 103 | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** 07-Sep-00

**CLIENT:** Blagg Engineering
**Work Order:** 0008053
**Project:** Cross Timbers; Abrams J #1
**Test No:** SW8021B

# QC SUMMARY REPORT
# SURROGATE RECOVERIES

## Aromatic Volatiles by GC/PID

| Sample ID | 14FBZ | 4BCBZ | FLBZ |
|---|---|---|---|
| 0008051-01A | 79 | 91.2 | 87.2 |
| 0008052-01A | 88 | 88 | 86.4 |
| 0008053-01A | 85.6 | 96.5 | 80 |
| 0008053-02A | 87.4 | 85.1 | 86.7 |
| 0008053-02AMS | 84.2 | 97.2 | 78.8 |
| 0008053-02AMSD | 84.6 | 97.2 | 78.7 |
| 0008054-01A | 88.3 | 82.6 | 87.6 |
| 0008054-01AMS | 87.1 | 91.4 | 87 |
| 0008054-01AMSD | 87.1 | 90.3 | 87 |
| 0008054-02A | 90 | 90.3 | 89.2 |
| 0008054-03A | 83.9 | 94.5 | 80 |
| 0008054-04A | 87.6 | 88.3 | 87.8 |
| 0009001-01A | 88.8 | 89 | 87.8 |
| 0009003-01A | 89 | 89.4 | 87.7 |
| 0009003-03A | 88.8 | 89.1 | 87.9 |
| CCV1 BTEX_00070 | 88 | 90.8 | 86.9 |
| CCV2 BTEX_00070 | 88.4 | 86.5 | 87.6 |
| LCS SOIL | 84.4 | 98.3 | 78.7 |
| LCS WATER | 88 | 90.6 | 86.7 |
| MB1 | 88.8 | 90.7 | 87.2 |

| Acronym | | Surrogate | QC Limits |
|---|---|---|---|
| 14FBZ | = | 1,4-Difluorobenzene | 79-101 |
| 4BCBZ | = | 4-Bromochlorobenzene | 78-99 |
| FLBZ | = | Fluorobenzene | 76-103 |

*** Surrogate recovery outside acceptance limits**

# *BLAGG ENGINEERING, INC.*

**MONITOR WELL SAMPLING DATA**

**CLIENT :** CROSS TIMBERS OIL CO.

**CHAIN-OF-CUSTODY # :** 10776

**ABRAMS J # 1**
**UNIT I, SEC. 29, T29N, R10W**

**LABORATORY (S) USED :** ON - SITE TECH.

*Date :* November 30, 2000

*Filename :* 11-30-00.WK4

**SAMPLER :** N J V

**PROJECT MANAGER :** N J V

| WELL # | WELL ELEV. (ft) | WATER ELEV. (ft) | DEPTH TO WATER (ft) | TOTAL DEPTH (ft) | SAMPLING TIME | pH | CONDUCT (umhos) | VOLUME PURGED (gal.) | FREE PRODUCT (ft) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | - | DRY | 45.73 | - | - | - | - | - |
| 2 | MONITOR WELL NOT FOUND - PRESUMED DESTROYED | | | | | | | | |
| 3 | 95.83 | 51.00 | 44.83 | 50.00 | 1215 | 7.3 | 1,000 | 2.75 | - |
| 4 | 95.91 | 50.92 | 44.99 | 50.00 | - | - | - | - | - |
| 5 | 97.78 | 51.26 | 46.52 | 50.00 | 1250 | 7.3 | 2,500 | 1.75 | - |
| 6 | 96.61 | 50.94 | 45.67 | 50.00 | 1140 | 7.1 | 800 | 2.50 | - |
| 7 | 95.62 | 51.17 | 44.45 | 50.00 | - | - | - | - | - |
| 8R | 95.78 | 50.85 | 44.93 | 53.10 | - | - | - | - | - |
| 9 | 96.54 | | - | 50.00 | - | - | - | - | - |
| 10 | 97.28 | 51.35 | 45.93 | 50.00 | - | - | - | - | - |
| 11 | 98.61 | 51.60 | 47.01 | 50.00 | - | - | - | - | - |

NOTES : Volume of water purged from well prior to sampling; V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores).

Ideally a minimum of three (3) wellbore volumes:

1.25 " well diameter = 0.19 gallons per foot of water ( or 24 oz. ).

2 bails per foot - small teflon bailer.

3 bails per foot - 3 / 4 " teflon bailer.

2.00 " well diameter = 0.49 gallons per foot of water.

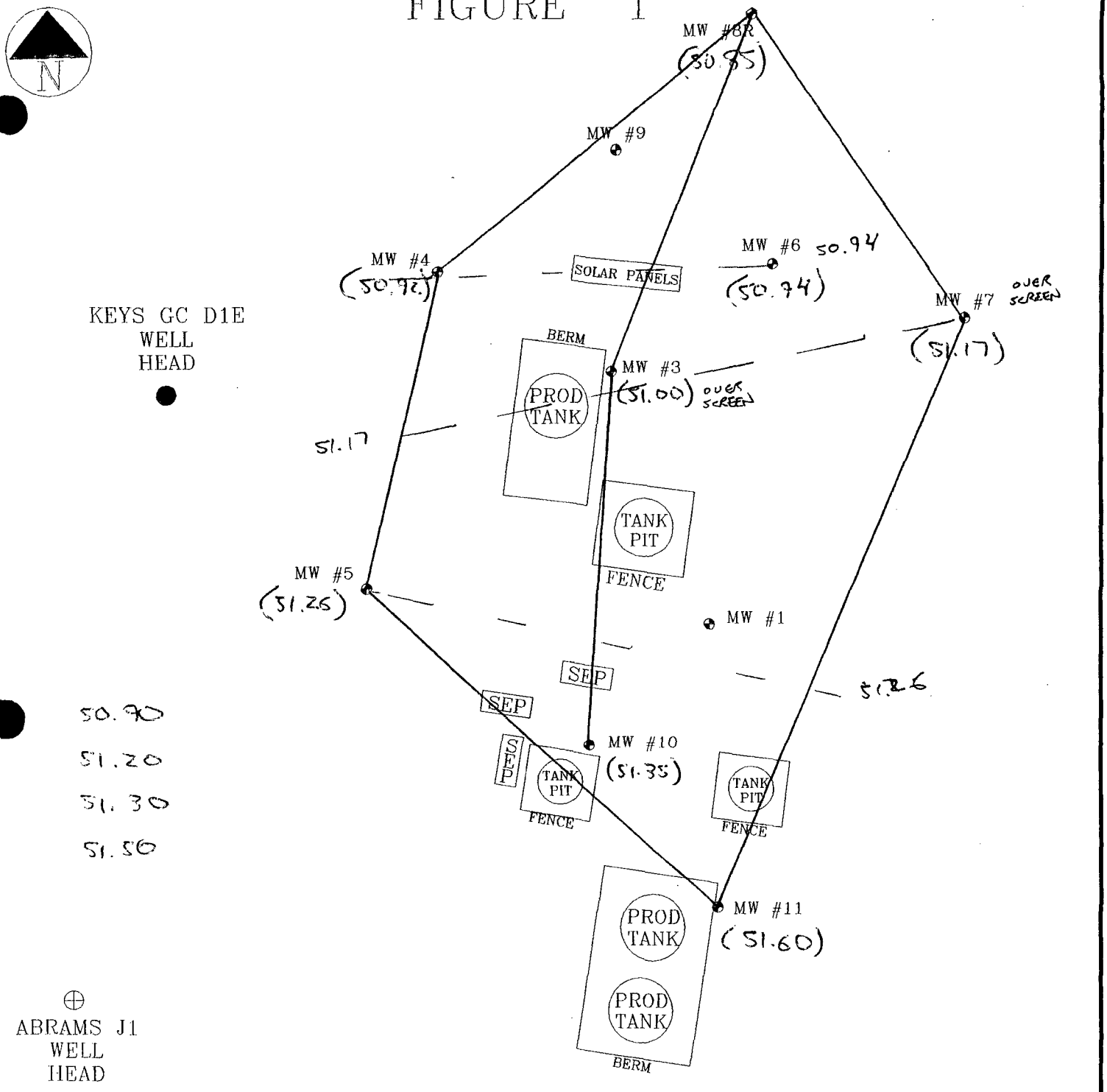
4.00 " well diameter = 1.95 gallons per foot of water.

Comments or note well diameter if not standard 2 ".

Poor recovery in MW # 5 & fair recovery in #'s 3 & 6 . Collected BTEX samples from MW # 's 3, 5, & 6 only . BEI reclamation system operational at time of sampling . Depth to water checked on 12 / 4 / 00 after shutting down compressor on 12 / 1 / 00 .

mw # 6 3.38'

# FIGURE 1




MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND ARE NOT TO SCALE.

0 50 100 FT.

| | | | |
|---|---|---|---|
| AMOCO PRODUCTION COMPANY<br>ABRAMS J1<br>NE/4 SE/4 SEC. 29, T29N, R10W<br>SAN JUAN COUNTY, NEW MEXICO | BLAGG ENGINEERING, INC.<br>CONSULTING PETROLEUM / RECLAMATION SERVICES<br>P.O. BOX 87<br>BLOOMFIELD, NEW MEXICO 87413<br>PHONE: (505) 632-1199 | PROJECT: 1/4 ly SAMP.<br>DRAWN BY: NJV<br>FILENAME: 04-07-97 | GROUNDWATER CONTOUR MAP<br>4/97 |

OFF: (505) 325-5667
FAX: (505) 327-1496

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556
FAX: (505) 327-1496

# ANALYTICAL REPORT

**Date:** *15-Dec-00*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0012002 | **Client Sample ID:** | MW #3 |
| **Lab ID:** | 0012002-01A **Matrix:** AQUEOUS | **Collection Date:** | 11/30/2000 12:15:00 PM |
| **Project:** | Cross Timbers; Abrams J #1 | **COC Record:** | 10776 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DC** |
| m,p-Xylene | 2800 | 50 | | µg/L | 50 | 12/5/2000 |
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DM** |
| Benzene | ND | 2.5 | | µg/L | 5 | 12/13/2000 |
| Toluene | ND | 2.5 | | µg/L | 5 | 12/13/2000 |
| Ethylbenzene | 5.7 | 2.5 | | µg/L | 5 | 12/13/2000 |
| o-Xylene | 500 | 2.5 | | µg/L | 5 | 12/13/2000 |

**Qualifiers:**

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate



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# ANALYTICAL REPORT

**Date:** *15-Dec-00*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0012002 | **Client Sample ID:** | MW #5 |
| **Lab ID:** | 0012002-02A **Matrix:** AQUEOUS | **Collection Date:** | 11/30/2000 12:50:00 PM |
| **Project:** | Cross Timbers; Abrams J #1 | **COC Record:** | 10776 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DC** |
| Benzene | ND | 0.5 | | µg/L | 1 | 12/5/2000 |
| Toluene | ND | 0.5 | | µg/L | 1 | 12/5/2000 |
| Ethylbenzene | ND | 0.5 | | µg/L | 1 | 12/5/2000 |
| m,p-Xylene | ND | 1 | | µg/L | 1 | 12/5/2000 |
| o-Xylene | ND | 0.5 | | µg/L | 1 | 12/5/2000 |

**Qualifiers:**

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate



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# ANALYTICAL REPORT

**Date:** *15-Dec-00*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0012002 | **Client Sample ID:** | MW #6 |
| **Lab ID:** | 0012002-03A **Matrix:** AQUEOUS | **Collection Date:** | 11/30/2000 11:40:00 AM |
| **Project:** | Cross Timbers; Abrams J #1 | **COC Record:** | 10776 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DM** |
| Benzene | 6.7 | 2.5 | | µg/L | 5 | 12/13/2000 |
| Toluene | ND | 2.5 | | µg/L | 5 | 12/13/2000 |
| Ethylbenzene | 39 | 2.5 | | µg/L | 5 | 12/13/2000 |
| m,p-Xylene | 1000 | 5 | | µg/L | 5 | 12/13/2000 |
| o-Xylene | 76 | 2.5 | | µg/L | 5 | 12/13/2000 |

**Qualifiers:**

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate



**P.O. BOX 2606 • FARMINGTON, NM 87499**
**EMAIL: ONSITE@ONSITELTD.COM**

# CHAIN OF CUSTODY RECORD

ON SITE TECHNOLOGIES, LTD.

612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 327-1496

Date: _____

Page: _____ of _____

| | | | |
|---|---|---|---|
| Purchase Order No.: | Project No. | | |
| SEND INVOICE TO — Name | | REPORT RESULTS TO — Name | Title |
| Company | Dept. | Company | |
| Address | | Mailing Address | |
| City, State, Zip | | City, State, Zip | |
| | | Telephone No. | Telefax No. |

**PROJECT LOCATION:**

**SAMPLER'S SIGNATURE:**

| SAMPLE IDENTIFICATION | SAMPLE DATE | SAMPLE TIME | SAMPLE MATRIX | SAMPLE PRES. | Number of Containers | ANALYSIS REQUESTED | LAB ID |
|---|---|---|---|---|---|---|---|
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|---|---|---|---|
| Relinquished by: | Date/Time | Received by: | Date/Time |
| Relinquished by: | Date/Time | Received by: | Date/Time |
| Relinquished by: | Date/Time | Received by: | Date/Time |

Method of Shipment:

Rush | 24-48 Hours | 10 Working Days | By Date

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Special Instructions / Remarks:

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

On Site Technologies, LTD.

**Date:** *15-Dec-00*

**CLIENT:** Blagg Engineering
**Work Order:** 0012002
**Project:** Cross Timbers; Abrams J #1

# QC SUMMARY REPORT
## Method Blank

Sample ID: **MB1** Batch ID: **GC-1_001205** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/5/2000** Prep Date:
Client ID: **0012002** Run ID: **GC-1_001205A** SeqNo: **33206**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.5 | | | | | | | | | |
| Ethylbenzene | .0771 | 0.5 | | | | | | | | | J |
| m,p-Xylene | .2174 | 1 | | | | | | | | | J |
| Methyl tert-Butyl Ether | ND | 1 | | | | | | | | | |
| o-Xylene | .2053 | 0.5 | | | | | | | | | J |
| Toluene | ND | 0.5 | | | | | | | | | |

Sample ID: **MB1** Batch ID: **GC-1_001213** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/13/2000** Prep Date:
Client ID: **0012002** Run ID: **GC-1_001213A** SeqNo: **33377**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.5 | | | | | | | | | |
| Ethylbenzene | .1164 | 0.5 | | | | | | | | | J |
| m,p-Xylene | .2034 | 1 | | | | | | | | | J |
| Methyl tert-Butyl Ether | ND | 1 | | | | | | | | | |
| o-Xylene | .0837 | 0.5 | | | | | | | | | J |
| Toluene | ND | 0.5 | | | | | | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *15-Dec-00*

**CLIENT:** Blagg Engineering
**Work Order:** 0012002
**Project:** Cross Timbers; Abrams J #1

# QC SUMMARY REPORT

## Sample Matrix Spike

Sample ID: **0012002-03AMS** Batch ID: **GC-1_001205** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/5/2000** Prep Date:
Client ID: **MW #6** **0012002** Run ID: **GC-1_001205A** SeqNo: **33207**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 1939 | 25 | 2000 | 0 | 97.0% | 88 | 112 | | | | |
| Ethylbenzene | 1968 | 25 | 2000 | 41.32 | 96.4% | 86 | 113 | | | | |
| m,p-Xylene | 4855 | 50 | 4000 | 1051 | 95.1% | 85 | 108 | | | | |
| Methyl tert-Butyl Ether | 1964 | 50 | 2000 | 0 | 98.2% | 86 | 117 | | | | |
| o-Xylene | 2031 | 25 | 2000 | 75.36 | 97.8% | 92 | 110 | | | | |
| Toluene | 1974 | 25 | 2000 | 0 | 98.7% | 88 | 116 | | | | |

Sample ID: **0012002-03AMSD** Batch ID: **GC-1_001205** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/5/2000** Prep Date:
Client ID: **MW #6** **0012002** Run ID: **GC-1_001205A** SeqNo: **33208**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 1950 | 25 | 2000 | 0 | 97.5% | 88 | 112 | 1939 | 0.5% | 6 | |
| Ethylbenzene | 1980 | 25 | 2000 | 41.32 | 96.9% | 86 | 113 | 1968 | 0.6% | 6 | |
| m,p-Xylene | 4890 | 50 | 4000 | 1051 | 96.0% | 85 | 108 | 4855 | 0.7% | 6 | |
| Methyl tert-Butyl Ether | 1998 | 50 | 2000 | 0 | 99.9% | 86 | 117 | 1964 | 1.7% | 7 | |
| o-Xylene | 2051 | 25 | 2000 | 75.36 | 98.8% | 92 | 110 | 2031 | 1.0% | 6 | |
| Toluene | 1989 | 25 | 2000 | 0 | 99.5% | 88 | 116 | 1974 | 0.8% | 6 | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

**CLIENT:** Blagg Engineering
**Work Order:** 0012002
**Project:** Cross Timbers; Abrams J #1

# QC SUMMARY REPORT
## Sample Matrix Spike

Sample ID: **0012014-03AMS** Batch ID: **GC-1_001213** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/13/2000** Prep Date:
Client ID: **0012002** Run ID: **GC-1_001213A** SeqNo: **33378**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 2530 | 10 | 800 | 1745 | 98.1% | 88 | 112 | | | | |
| Ethylbenzene | 1316 | 10 | 800 | 557 | 94.9% | 86 | 113 | | | | |
| m,p-Xylene | 3542 | 20 | 1600 | 2039 | 93.9% | 85 | 108 | | | | |
| Methyl tert-Butyl Ether | 2082 | 20 | 800 | 1387 | 86.9% | 86 | 117 | | | | |
| o-Xylene | 993.6 | 10 | 800 | 225.1 | 96.1% | 92 | 110 | | | | |
| Toluene | 1665 | 10 | 800 | 889.1 | 97.0% | 88 | 116 | | | | |

Sample ID: **0012014-03AMSD** Batch ID: **GC-1_001213** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/13/2000** Prep Date:
Client ID: **0012002** Run ID: **GC-1_001213A** SeqNo: **33379**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 2459 | 10 | 800 | 1745 | 89.3% | 88 | 112 | 2530 | 2.8% | 6 | |
| Ethylbenzene | 1279 | 10 | 800 | 557 | 90.2% | 86 | 113 | 1316 | 2.9% | 6 | |
| m,p-Xylene | 3441 | 20 | 1600 | 2039 | 87.6% | 85 | 108 | 3542 | 2.9% | 6 | |
| Methyl tert-Butyl Ether | 2106 | 20 | 800 | 1387 | 89.9% | 86 | 117 | 2082 | 1.1% | 7 | |
| o-Xylene | 968.2 | 10 | 800 | 225.1 | 92.9% | 92 | 110 | 993.6 | 2.6% | 6 | |
| Toluene | 1616 | 10 | 800 | 889.1 | 90.8% | 88 | 116 | 1665 | 3.0% | 6 | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
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R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *15-Dec-00*

**CLIENT:** Blagg Engineering
**Work Order:** 0012002
**Project:** Cross Timbers; Abrams J #1

# QC SUMMARY REPORT

## Laboratory Control Spike - generic

Sample ID: **LCS WATER** Batch ID: **GC-1_001205** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/5/2000** Prep Date:
Client ID: **0012002** Run ID: **GC-1_001205A** SeqNo: **33205**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 38.45 | 0.5 | 40 | 0 | 96.1% | 96 | 111 | | | | |
| Ethylbenzene | 38.65 | 0.5 | 40 | 0.0771 | 96.4% | 96 | 111 | | | | |
| m,p-Xylene | 77.64 | 1 | 80 | 0.2174 | 96.8% | 92 | 105 | | | | |
| Methyl tert-Butyl Ether | 38.91 | 1 | 40 | 0 | 97.3% | 93 | 113 | | | | |
| o-Xylene | 39.21 | 0.5 | 40 | 0.2053 | 97.5% | 97 | 110 | | | | |
| Toluene | 39.05 | 0.5 | 40 | 0 | 97.6% | 97 | 109 | | | | |

Sample ID: **LCS WATER** Batch ID: **GC-1_001213** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/13/2000** Prep Date:
Client ID: **0012002** Run ID: **GC-1_001213A** SeqNo: **33376**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 39.67 | 0.5 | 40 | 0 | 99.2% | 96 | 111 | | | | |
| Ethylbenzene | 38.58 | 0.5 | 40 | 0.1164 | 96.2% | 96 | 111 | | | | |
| m,p-Xylene | 76.97 | 1 | 80 | 0.2034 | 96.0% | 92 | 105 | | | | |
| Methyl tert-Butyl Ether | 39.07 | 1 | 40 | 0 | 97.7% | 93 | 113 | | | | |
| o-Xylene | 39 | 0.5 | 40 | 0.0837 | 97.3% | 97 | 110 | | | | |
| Toluene | 39.19 | 0.5 | 40 | 0 | 98.0% | 97 | 109 | | | | |

**Qualifiers:**
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J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *15-Dec-00*

**CLIENT:** Blagg Engineering
**Work Order:** 0012002
**Project:** Cross Timbers; Abrams J #1

# QC SUMMARY REPORT

## Continuing Calibration Verification Standard

Sample ID: **CCV1 BTEX_0010** Batch ID: **GC-1_001205** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/5/2000** Prep Date:

Client ID: **0012002** Run ID: **GC-1_001205A** SeqNo: **33202**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 20.34 | 0.5 | 20 | 0 | 101.7% | 85 | 115 | | | | |
| Ethylbenzene | 21.73 | 0.5 | 20 | 0 | 108.7% | 85 | 115 | | | | |
| m,p-Xylene | 42.14 | 1 | 40 | 0 | 105.3% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 20.24 | 1 | 20 | 0 | 101.2% | 85 | 115 | | | | |
| o-Xylene | 20.94 | 0.5 | 20 | 0 | 104.7% | 85 | 115 | | | | |
| Toluene | 20.71 | 0.5 | 20 | 0 | 103.5% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 73.54 | 0 | 80 | 0 | 91.9% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 80.05 | 0 | 80 | 0 | 100.1% | 70 | 130 | | | | |
| Fluorobenzene | 73.2 | 0 | 80 | 0 | 91.5% | 70 | 130 | | | | |

Sample ID: **CCV2 BTEX_0010** Batch ID: **GC-1_001205** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/5/2000** Prep Date:

Client ID: **0012002** Run ID: **GC-1_001205A** SeqNo: **33203**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 19.51 | 0.5 | 20 | 0 | 97.6% | 85 | 115 | | | | |
| Ethylbenzene | 19.8 | 0.5 | 20 | 0 | 99.0% | 85 | 115 | | | | |
| m,p-Xylene | 39.72 | 1 | 40 | 0 | 99.3% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 19.93 | 1 | 20 | 0 | 99.7% | 85 | 115 | | | | |
| o-Xylene | 20.17 | 0.5 | 20 | 0 | 100.9% | 85 | 115 | | | | |
| Toluene | 19.77 | 0.5 | 20 | 0 | 98.9% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 73.34 | 0 | 80 | 0 | 91.7% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 82.12 | 0 | 80 | 0 | 102.7% | 70 | 130 | | | | |
| Fluorobenzene | 73.54 | 0 | 80 | 0 | 91.9% | 70 | 130 | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

**CLIENT:** Blagg Engineering
**Work Order:** 0012002
**Project:** Cross Timbers; Abrams J #1

# QC SUMMARY REPORT
## Continuing Calibration Verification Standard

Sample ID: **CCV3 BTEX_0010** Batch ID: **GC-1_001205** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/5/2000** Prep Date:
Client ID: **0012002** Run ID: **GC-1_001205A** SeqNo: **33204**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 40.45 | 0.5 | 40 | 0 | 101.1% | 85 | 115 | | | | |
| Ethylbenzene | 40.3 | 0.5 | 40 | 0 | 100.8% | 85 | 115 | | | | |
| m,p-Xylene | 80.27 | 1 | 80 | 0 | 100.3% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 41.06 | 1 | 40 | 0 | 102.7% | 85 | 115 | | | | |
| o-Xylene | 40.79 | 0.5 | 40 | 0 | 102.0% | 85 | 115 | | | | |
| Toluene | 40.68 | 0.5 | 40 | 0 | 101.7% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 72.99 | 0 | 80 | 0 | 91.2% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 82.48 | 0 | 80 | 0 | 103.1% | 70 | 130 | | | | |
| Fluorobenzene | 73.06 | 0 | 80 | 0 | 91.3% | 70 | 130 | | | | |

Sample ID: **CCV1 BTEX_0012** Batch ID: **GC-1_001213** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/13/2000** Prep Date:
Client ID: **0012002** Run ID: **GC-1_001213A** SeqNo: **33373**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 20.19 | 0.5 | 20 | 0 | 100.9% | 85 | 115 | | | | |
| Ethylbenzene | 19.91 | 0.5 | 20 | 0 | 99.5% | 85 | 115 | | | | |
| m,p-Xylene | 39.65 | 1 | 40 | 0 | 99.1% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 19.82 | 1 | 20 | 0 | 99.1% | 85 | 115 | | | | |
| o-Xylene | 19.96 | 0.5 | 20 | 0 | 99.8% | 85 | 115 | | | | |
| Toluene | 19.94 | 0.5 | 20 | 0 | 99.7% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 74.08 | 0 | 80 | 0 | 92.6% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 82.53 | 0 | 80 | 0 | 103.2% | 70 | 130 | | | | |
| Fluorobenzene | 74.74 | 0 | 80 | 0 | 93.4% | 70 | 130 | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

**CLIENT:** Blagg Engineering
**Work Order:** 0012002
**Project:** Cross Timbers; Abrams J #1

# QC SUMMARY REPORT
## Continuing Calibration Verification Standard

Sample ID: **CCV2 BTEX_0012** Batch ID: **GC-1_001213** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/13/2000** Prep Date:
Client ID: **0012002** Run ID: **GC-1_001213A** SeqNo: **33374**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 19.58 | 0.5 | 20 | 0 | 97.9% | 85 | 115 | | | | |
| Ethylbenzene | 19.29 | 0.5 | 20 | 0 | 96.5% | 85 | 115 | | | | |
| m,p-Xylene | 38.59 | 1 | 40 | 0 | 96.5% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 19.41 | 1 | 20 | 0 | 97.0% | 85 | 115 | | | | |
| o-Xylene | 19.51 | 0.5 | 20 | 0 | 97.6% | 85 | 115 | | | | |
| Toluene | 19.42 | 0.5 | 20 | 0 | 97.1% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 74.88 | 0 | 80 | 0 | 93.6% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 80.82 | 0 | 80 | 0 | 101.0% | 70 | 130 | | | | |
| Fluorobenzene | 76.8 | 0 | 80 | 0 | 96.0% | 70 | 130 | | | | |

Sample ID: **CCV3 BTEX_0012** Batch ID: **GC-1_001213** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/13/2000** Prep Date:
Client ID: **0012002** Run ID: **GC-1_001213A** SeqNo: **33375**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 38.44 | 0.5 | 40 | 0 | 96.1% | 85 | 115 | | | | |
| Ethylbenzene | 37.27 | 0.5 | 40 | 0 | 93.2% | 85 | 115 | | | | |
| m,p-Xylene | 74.24 | 1 | 80 | 0 | 92.8% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 38.56 | 1 | 40 | 0 | 96.4% | 85 | 115 | | | | |
| o-Xylene | 37.86 | 0.5 | 40 | 0 | 94.7% | 85 | 115 | | | | |
| Toluene | 37.98 | 0.5 | 40 | 0 | 94.9% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 75.12 | 0 | 80 | 0 | 93.9% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 81.04 | 0 | 80 | 0 | 101.3% | 70 | 130 | | | | |
| Fluorobenzene | 76.31 | 0 | 80 | 0 | 95.4% | 70 | 130 | | | | |

**Qualifiers:** ND - Not Detected at the Reporting Limit; J - Analyte detected below quantitation limits; S - Spike Recovery outside accepted recovery limits; R - RPD outside accepted recovery limits; B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** 15-Dec-00

**CLIENT:** Blagg Engineering
**Work Order:** 0012002
**Project:** Cross Timbers; Abrams J #1
**Test No:** SW8021B

# QC SUMMARY REPORT
# SURROGATE RECOVERIES

## Aromatic Volatiles by GC/PID

| Sample ID | 14FBZ | 4BCBZ | FLBZ |
|---|---|---|---|
| 0011047-01A | 91.1 | 102 | 90.4 |
| 0011048-01A | 90.2 | 98.1 | 89.6 |
| 0011048-02A | 92.4 | 99.9 | 92.4 |
| 0011048-03A | 92.3 | 101 | 94.2 |
| 0011048-04A | 91.3 | 100 | 91.8 |
| 0011049-01A | 93.7 | 103 | 92.6 |
| 0011049-02A | 92 | 100 | 92.3 |
| 0011049-03A | 91.5 | 99.6 | 91.8 |
| 0011049-04A | 91.9 | 100 | 91 |
| 0011050-01A | 88.1 | 96 | 87.6 |
| 0011050-02A | 91.9 | 101 | 91.2 |
| 0011050-03A | 89.2 | 99.6 | 92.3 |
| 0011050-04A | 93.4 | 103 | 92.3 |
| 0012001-01A | 91.2 | 101 | 91.6 |
| 0012002-01A | 92.2 | 97 | 95.9 |
| 0012002-02A | 92.8 | 102 | 93.1 |
| 0012002-03A | 91.9 | 98.1 | 95.1 |
| 0012002-03AMS | 90.9 | 104 | 91.2 |
| 0012002-03AMSD | 91 | 104 | 91 |
| 0012007-01A | 90.3 | 96.7 | 92.5 |
| 0012007-02A | 93.8 | 98.3 | 96.2 |
| 0012007-03A | 88.2 | 94.7 | 90.2 |
| 0012007-04A | 90.5 | 95 | 93.5 |
| 0012007-05A | 95.3 | 99.6 | 96.6 |
| 0012008-01A | 94.9 | 99.5 | 97.3 |
| 0012011-01A | 95.2 | 100 | 97.4 |
| 0012011-02A | 93.6 | 101 | 96.7 |

| Acronym | | Surrogate | QC Limits |
|---|---|---|---|
| 14FBZ | = | 1,4-Difluorobenzene | 70-130 |
| 4BCBZ | = | 4-Bromochlorobenzene | 70-130 |
| FLBZ | = | Fluorobenzene | 70-130 |

*** Surrogate recovery outside acceptance limits**

**CLIENT:** Blagg Engineering
**Work Order:** 0012002
**Project:** Cross Timbers; Abrams J #1
**Test No:** SW8021B

# QC SUMMARY REPORT
# SURROGATE RECOVERIES

## Aromatic Volatiles by GC/PID

| Sample ID | 14FBZ | 4BCBZ | FLBZ |
|---|---|---|---|
| 0012011-03A | 96.1 | 104 | 99 |
| 0012011-04A | 94.2 | 100 | 97.5 |
| 0012011-05A | 94.3 | 100 | 96.3 |
| 0012014-01A | 94 | 98.4 | 97.5 |
| 0012014-02A | 94.9 | 100 | 97.1 |
| 0012014-03A | 92.1 | 101 | 94 |
| 0012014-03AMS | 92 | 101 | 93.8 |
| 0012014-03AMSD | 92.4 | 101 | 93.2 |
| 0012014-04A | 93.6 | 100 | 96.3 |
| 0012019-01A | 94.3 | 100 | 97.3 |
| 0012019-02A | 91 | 97.2 | 93.6 |
| 0012019-03A | 84.4 | 88.3 | 87.1 |
| CCV1 BTEX_00100 | 91.9 | 100 | 91.5 |
| CCV1 BTEX_00121 | 92.6 | 103 | 93.4 |
| CCV2 BTEX_00100 | 91.7 | 103 | 91.9 |
| CCV2 BTEX_00121 | 93.6 | 101 | 96 |
| CCV3 BTEX_00100 | 91.2 | 103 | 91.3 |
| CCV3 BTEX_00121 | 93.9 | 101 | 95.4 |
| LCS WATER | 93.2 | 103 | 95.6 |
| MB1 | 93.5 | 104 | 94.6 |

| Acronym | | Surrogate | QC Limits |
|---|---|---|---|
| 14FBZ | = | 1,4-Difluorobenzene | 70-130 |
| 4BCBZ | = | 4-Bromochlorobenzene | 70-130 |
| FLBZ | = | Fluorobenzene | 70-130 |

*** Surrogate recovery outside acceptance limits**

# BLAGG ENGINEERING, INC.

## MONITOR WELL SAMPLING DATA

CLIENT : CROSS TIMBERS OIL CO.

CHAIN-OF-CUSTODY # : 11043

ABRAMS J # 1
UNIT I, SEC. 29, T29N, R10W

LABORATORY (S) USED : ON - SITE TECH.

*Date* : March 20, 2001

SAMPLER : N J V

*Filename* : 03-20-01.WK4

PROJECT MANAGER : N J V

| WELL # | WELL ELEV. (ft) | WATER ELEV. (ft) | DEPTH TO WATER (ft) | TOTAL DEPTH (ft) | SAMPLING TIME | pH | CONDUCT (umhos) | VOLUME PURGED (gal.) | FREE PRODUCT (ft) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | - | DRY | 45.73 | - | - | - | - | - |
| 2 | MONITOR WELL NOT FOUND - PRESUMED DESTROYED | | | | | | | | |
| 3 | 95.83 | 49.94 | 45.89 | 50.00 | 1415 | 7.22 | 1,500 | 2.25 | - |
| 4 | 95.91 | 49.68 | 46.23 | 50.00 | - | - | - | - | - |
| 5 | 97.78 | 50.39 | 47.39 | 50.00 | - | - | - | - | - |
| 6 | 96.61 | 49.23 | 47.38 | 50.00 | 1350 | 7.12 | 800 | 1.75 | - |
| 7 | 95.62 | 49.98 | 45.64 | 50.00 | 1320 | 7.39 | 700 | 2.50 | - |
| 8R | 95.78 | 49.17 | 46.61 | 53.10 | - | - | - | - | - |
| 9 | 96.54 | | - | 50.00 | - | - | - | - | - |
| 10 | 97.28 | 50.50 | 46.78 | 50.00 | - | - | - | - | - |
| 11 | 98.61 | 50.64 | 47.97 | 50.00 | - | - | - | - | - |

NOTES : Volume of water purged from well prior to sampling: V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores).

Ideally a minimum of three (3) wellbore volumes:

1.25 " well diameter = 0.19 gallons per foot of water ( or 24 oz. ).

2 bails per foot - small teflon bailer.

3 bails per foot - 3 / 4 " teflon bailer.

2.00 " well diameter = 0.49 gallons per foot of water.

4.00 " well diameter = 1.95 gallons per foot of water.

Comments or note well diameter if not standard 2 ".

Fair recovery in all MW 's sampled . Collected BTEX samples from MW # 's 3, 6, & 7 only . BEI reclamation system operational at time of sampling . Depth to water checked on 3 / 21 / 01 after shutting down compressor on 3 / 20 / 01 . MW # 3 air portal OVM reading = 304 ppm ( steady ), mw # 6 3.38' MW # 10 air portal OVM reading = 334 ppm ( peak ), approx. 150 ppm ( steady ).

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LAB: (505) 325-1556
FAX: (505) 327-1496

# ANALYTICAL REPORT

**Date:** *23-Mar-01*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0103020 | **Client Sample ID:** | MW #3 |
| **Lab ID:** | 0103020-01A **Matrix:** AQUEOUS | **Collection Date:** | 3/20/2001 2:15:00 PM |
| **Project:** | Cross Timbers - Abrams J #1 | **COC Record:** | 11043 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DM** |
| Benzene | ND | 2.5 | | µg/L | 5 | 3/21/2001 |
| Toluene | ND | 2.5 | | µg/L | 5 | 3/21/2001 |
| Ethylbenzene | 6.6 | 2.5 | | µg/L | 5 | 3/21/2001 |
| m,p-Xylene | 1000 | 5 | | µg/L | 5 | 3/21/2001 |
| o-Xylene | 200 | 2.5 | | µg/L | 5 | 3/21/2001 |

**Qualifiers:**

- PQL - Practical Quantitation Limit
- ND - Not Detected at Practical Quantitation Limit
- J - Analyte detected below Practical Quantitation Limit
- B - Analyte detected in the associated Method Blank
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- Surr: - Surrogate



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# ANALYTICAL REPORT

**Date:** *23-Mar-01*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0103020 | **Client Sample ID:** | MW #6 |
| **Lab ID:** | 0103020-02A **Matrix:** AQUEOUS | **Collection Date:** | 3/20/2001 1:50:00 PM |
| **Project:** | Cross Timbers - Abrams J #1 | **COC Record:** | 11043 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DM** |
| Benzene | 130 | 2.5 | | µg/L | 5 | 3/21/2001 |
| Toluene | ND | 2.5 | | µg/L | 5 | 3/21/2001 |
| Ethylbenzene | 180 | 2.5 | | µg/L | 5 | 3/21/2001 |
| m,p-Xylene | 1500 | 5 | | µg/L | 5 | 3/21/2001 |
| o-Xylene | 180 | 2.5 | | µg/L | 5 | 3/21/2001 |

**Qualifiers:**

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate



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# ANALYTICAL REPORT

**Date:** *23-Mar-01*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0103020 | **Client Sample ID:** | MW #7 |
| **Lab ID:** | 0103020-03A **Matrix:** AQUEOUS | **Collection Date:** | 3/20/2001 1:20:00 PM |
| **Project:** | Cross Timbers - Abrams J #1 | **COC Record:** | 11043 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DM** |
| Benzene | ND | 0.5 | | µg/L | 1 | 3/21/2001 |
| Toluene | ND | 0.5 | | µg/L | 1 | 3/21/2001 |
| Ethylbenzene | ND | 0.5 | | µg/L | 1 | 3/21/2001 |
| m,p-Xylene | 22 | 1 | | µg/L | 1 | 3/21/2001 |
| o-Xylene | 1.7 | 0.5 | | µg/L | 1 | 3/21/2001 |

**Qualifiers:**

- PQL - Practical Quantitation Limit
- ND - Not Detected at Practical Quantitation Limit
- J - Analyte detected below Practical Quantitation Limit
- B - Analyte detected in the associated Method Blank
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- Surr: - Surrogate



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# CHAIN OF CUSTODY RECORD

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Date: _____

Page: _____ of _____

| | | | |
|---|---|---|---|
| Purchase Order No.: | Project No. | | |
| **SEND INVOICE TO** Name | | **REPORT RESULTS TO** Name | Title |
| Company | Dept. | Company | |
| Address | | Mailing Address | |
| City, State, Zip | | City, State, Zip | |
| | | Telephone No. | Telefax No. |

**PROJECT LOCATION:**

**SAMPLER'S SIGNATURE:**

| SAMPLE IDENTIFICATION | SAMPLE DATE | SAMPLE TIME | SAMPLE MATRIX | SAMPLE PRES. | Number of Containers | ANALYSIS REQUESTED | LAB ID |
|---|---|---|---|---|---|---|---|
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|---|---|---|---|
| Relinquished by: | Date/Time | Received by: | Date/Time |
| Relinquished by: | Date/Time | Received by: | Date/Time |
| Relinquished by: | Date/Time | Received by: | Date/Time |

Method of Shipment:

Rush | 24-48 Hours | 10 Working Days | By Date

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Special Instructions / Remarks:

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

On Site Technologies, LTD.

**Date:** *23-Mar-01*

**CLIENT:** Blagg Engineering
**Work Order:** 0103020
**Project:** Cross Timbers - Abrams J #1

# QC SUMMARY REPORT
## Method Blank

Sample ID: **MB1** Batch ID: **GC-1_010321** Test Code: **SW8021B** Units: **µg/L** Analysis Date **3/21/2001** Prep Date:

Client ID: **0103020** Run ID: **GC-1_010321A** SeqNo: **35873**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.5 | | | | | | | | | |
| Ethylbenzene | .0794 | 0.5 | | | | | | | | | J |
| m,p-Xylene | .5522 | 1 | | | | | | | | | J |
| Methyl tert-Butyl Ether | ND | 1 | | | | | | | | | |
| o-Xylene | .1977 | 0.5 | | | | | | | | | J |
| Toluene | .154 | 0.5 | | | | | | | | | J |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *23-Mar-01*

**CLIENT:** Blagg Engineering
**Work Order:** 0103020
**Project:** Cross Timbers - Abrams J #1

# QC SUMMARY REPORT

## Sample Matrix Spike

Sample ID: **0103008-01AMS** Batch ID: **GC-1_010321** Test Code: **SW8021B** Units: **µg/L** Analysis Date **3/21/2001** Prep Date:

Client ID: **0103020** Run ID: **GC-1_010321A** SeqNo: **35874**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 1070 | 5 | 400 | 710 | 90.1% | 84 | 111 | | | | |
| Ethylbenzene | 733.1 | 5 | 400 | 320 | 103.3% | 84 | 111 | | | | |
| m,p-Xylene | 1386 | 10 | 800 | 560 | 103.2% | 84 | 108 | | | | |
| Methyl tert-Butyl Ether | 444.8 | 10 | 400 | 110 | 83.7% | 80 | 117 | | | | |
| o-Xylene | 517.8 | 5 | 400 | 110 | 102.0% | 89 | 107 | | | | |
| Toluene | 468.4 | 5 | 400 | 54 | 103.6% | 90 | 107 | | | | |

Sample ID: **0103008-01AMSD** Batch ID: **GC-1_010321** Test Code: **SW8021B** Units: **µg/L** Analysis Date **3/21/2001** Prep Date:

Client ID: **0103020** Run ID: **GC-1_010321A** SeqNo: **35875**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 1064 | 5 | 400 | 710 | 88.6% | 84 | 111 | 1070 | 0.6% | 8 | |
| Ethylbenzene | 709.4 | 5 | 400 | 320 | 97.3% | 84 | 111 | 733.1 | 3.3% | 7 | |
| m,p-Xylene | 1343 | 10 | 800 | 560 | 97.9% | 84 | 108 | 1386 | 3.1% | 7 | |
| Methyl tert-Butyl Ether | 449.2 | 10 | 400 | 110 | 84.8% | 80 | 117 | 444.8 | 1.0% | 6 | |
| o-Xylene | 502.9 | 5 | 400 | 110 | 98.2% | 89 | 107 | 517.8 | 2.9% | 6 | |
| Toluene | 449.4 | 5 | 400 | 54 | 98.8% | 90 | 107 | 468.4 | 4.2% | 6 | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *23-Mar-01*

**CLIENT:** Blagg Engineering
**Work Order:** 0103020
**Project:** Cross Timbers - Abrams J #1

# QC SUMMARY REPORT

## Laboratory Control Spike - generic

Sample ID: **LCS WATER** Batch ID: **GC-1_010321** Test Code: **SW8021B** Units: **µg/L** Analysis Date **3/21/2001** Prep Date:

Client ID: **0103020** Run ID: **GC-1_010321A** SeqNo: **35872**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 39.67 | 0.5 | 40 | 0 | 99.2% | 92 | 109 | | | | |
| Ethylbenzene | 41.4 | 0.5 | 40 | 0.0794 | 103.3% | 92 | 112 | | | | |
| m,p-Xylene | 82.98 | 1 | 80 | 0.5522 | 103.0% | 91 | 108 | | | | |
| Methyl tert-Butyl Ether | 40.98 | 1 | 40 | 0 | 102.4% | 89 | 116 | | | | |
| o-Xylene | 41.51 | 0.5 | 40 | 0.1977 | 103.3% | 93 | 109 | | | | |
| Toluene | 40.7 | 0.5 | 40 | 0.154 | 101.4% | 93 | 108 | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** 23-Mar-01

**CLIENT:** Blagg Engineering
**Work Order:** 0103020
**Project:** Cross Timbers - Abrams J #1
**Test No:** SW8021B

# QC SUMMARY REPORT
# SURROGATE RECOVERIES

## Aromatic Volatiles by GC/PID

| Sample ID | 14FBZ | 4BCBZ | FLBZ |
|---|---|---|---|
| 0103008-01A | 95.3 | 96.8 | 95.2 |
| 0103008-01AMS | 95.3 | 99.7 | 95 |
| 0103008-01AMSD | 95.4 | 97.3 | 94.6 |
| 0103011-01A | 97.9 | 99.2 | 96.6 |
| 0103015-01A | 88.2 | 87.7 * | 95.6 |
| 0103015-02A | 98.5 | 97.7 | 98.5 |
| 0103017-01A | 93.4 | 92.3 * | 94 |
| 0103018-01A | 96.7 | 95.6 | 95.8 |
| 0103019-01A | 99.2 | 97.3 | 98.2 |
| 0103020-01A | 96.4 | 91.7 * | 96.4 |
| 0103020-02A | 94.7 | 93.7 | 93.8 |
| 0103020-03A | 98.9 | 96.6 | 97.8 |
| 0103021-01A | 99 | 98.4 | 97.9 |
| 0103022-01A | 99.3 | 97.7 | 98 |
| 0103022-02A | 98.4 | 95.8 | 97.8 |
| 0103022-03A | 96.1 | 93.4 | 99.2 |
| 0103023-06A | 107 * | 96.2 | 101 |
| 0103028-01A | 98.3 | 95.6 | 98.8 |
| CCV1 BTEX_01030 | 98 | 96.6 | 97.8 |
| CCV2 BTEX_01030 | 97.9 | 95.4 | 97.7 |
| CCV3 BTEX_01030 | 98.3 | 94.2 | 96.8 |
| LCS WATER | 97.3 | 97.4 | 97 |
| MB1 | 98.7 | 96.7 | 98.3 |

| Acronym | | Surrogate | QC Limits |
|---|---|---|---|
| 14FBZ | = | 1,4-Difluorobenzene | 85-103 |
| 4BCBZ | = | 4-Bromochlorobenzene | 93-108 |
| FLBZ | = | Fluorobenzene | 88-103 |

*** Surrogate recovery outside acceptance limits**

# BLAGG ENGINEERING, INC.

## MONITOR WELL SAMPLING DATA

CLIENT : CROSS TIMBERS OPER. CO.

CHAIN-OF-CUSTODY # : 11048

ABRAMS J # 1
UNIT I, SEC. 29, T29N, R10W

LABORATORY (S) USED : ON - SITE TECH.

*Date* : May 16, 2001

SAMPLER : N J V

*Filename* : 05-16-01.WK4

PROJECT MANAGER : N J V

| WELL # | WELL ELEV. (ft) | WATER ELEV. (ft) | DEPTH TO WATER (ft) | TOTAL DEPTH (ft) | SAMPLING TIME | pH | CONDUCT (umhos) | VOLUME PURGED (gal.) | FREE PRODUCT (ft) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | - | DRY | 45.73 | - | - | - | - | - |
| 2 | MONITOR WELL NOT FOUND - PRESUMED DESTROYED | | | | | | | | |
| 3 | 95.83 | 49.68 | 46.15 | 50.00 | 1150 | 6.92 | 1,900 | 2.00 | - |
| 4 | 95.91 | 49.64 | 46.27 | 50.00 | - | - | - | - | - |
| 5 | 97.78 | 49.98 | 47.80 | 50.00 | - | - | - | - | - |
| 6 | 96.61 | 49.65 | 46.96 | 50.00 | 1110 | 7.48 | 900 | 1.50 | - |
| 7 | 95.62 | 49.83 | 45.79 | 50.00 | - | - | - | - | - |
| 8R | 95.78 | 49.69 | 46.09 | 53.10 | - | - | - | - | - |
| 9 | 96.54 | | - | 50.00 | - | - | - | - | - |
| 10 | 97.28 | 50.02 | 47.26 | 50.00 | 1030 | 7.21 | 2,000 | 1.50 | - |
| 11 | 98.61 | 50.24 | 48.37 | 50.00 | - | - | - | - | - |

NOTES : Volume of water purged from well prior to sampling: V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores).

Ideally a minimum of three (3) wellbore volumes:

1.25 " well diameter = 0.19 gallons per foot of water ( or 24 oz. ).

2 bails per foot - small teflon bailer.

3 bails per foot - 3 / 4 " teflon bailer.

2.00 " well diameter = 0.49 gallons per foot of water.

4.00 " well diameter = 1.95 gallons per foot of water.

Comments or note well diameter if not standard 2 ".

Fair recovery in MW 's 3 & 6 , poor recovery in MW # 10. Collected BTEX samples from MW # 's 3, 6, & 10 only . BEI reclamation system operational at time of sampling . Depth to water checked on 5 / 17 / 01 after shutting down compressor on 5 / 16 / 01 .

MW # 10 air portal OVM reading = 4.9 ppm ( steady ) . mw # 6 3.38'

MW # 3 air portal OVM reading = 187.7 ppm ( steady ) , 252.3 ppm ( peak ) .

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# ANALYTICAL REPORT

**Date:** *31-May-01*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0105024 | **Client Sample ID:** | MW #3 |
| **Lab ID:** | 0105024-01A **Matrix:** AQUEOUS | **Collection Date:** | 5/16/2001 11:50:00 AM |
| **Project:** | Cross Timbers; Abrams J #1 | **COC Record:** | 11048 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **HR** |
| Benzene | ND | 2.5 | | µg/L | 5 | 5/25/2001 |
| Toluene | ND | 2.5 | | µg/L | 5 | 5/25/2001 |
| Ethylbenzene | ND | 2.5 | | µg/L | 5 | 5/25/2001 |
| m,p-Xylene | 250 | 5 | | µg/L | 5 | 5/25/2001 |
| o-Xylene | 33 | 2.5 | | µg/L | 5 | 5/25/2001 |

**Qualifiers:**

- PQL - Practical Quantitation Limit
- ND - Not Detected at Practical Quantitation Limit
- J - Analyte detected below Practical Quantitation Limit
- B - Analyte detected in the associated Method Blank
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- Surr: - Surrogate



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# ANALYTICAL REPORT

**Date:** *31-May-01*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0105024 | **Client Sample ID:** | MW #6 |
| **Lab ID:** | 0105024-02A **Matrix:** AQUEOUS | **Collection Date:** | 5/16/2001 11:10:00 AM |
| **Project:** | Cross Timbers; Abrams J #1 | **COC Record:** | 11048 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **HR** |
| Benzene | 1 | 0.5 | | µg/L | 1 | 5/26/2001 |
| Toluene | ND | 0.5 | | µg/L | 1 | 5/26/2001 |
| Ethylbenzene | 4.7 | 0.5 | | µg/L | 1 | 5/26/2001 |
| m,p-Xylene | 11 | 1 | | µg/L | 1 | 5/26/2001 |
| o-Xylene | 2.2 | 0.5 | | µg/L | 1 | 5/26/2001 |

**Qualifiers:**

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- ND - Not Detected at Practical Quantitation Limit
- J - Analyte detected below Practical Quantitation Limit
- B - Analyte detected in the associated Method Blank
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- Surr: - Surrogate



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# ANALYTICAL REPORT

**Date:** *31-May-01*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0105024 | **Client Sample ID:** | MW #10 |
| **Lab ID:** | 0105024-03A **Matrix:** AQUEOUS | **Collection Date:** | 5/16/2001 10:30:00 AM |
| **Project:** | Cross Timbers; Abrams J #1 | **COC Record:** | 11048 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **HR** |
| Benzene | ND | 0.5 | | µg/L | 1 | 5/26/2001 |
| Toluene | ND | 0.5 | | µg/L | 1 | 5/26/2001 |
| Ethylbenzene | 0.7 | 0.5 | | µg/L | 1 | 5/26/2001 |
| m,p-Xylene | ND | 1 | | µg/L | 1 | 5/26/2001 |
| o-Xylene | ND | 0.5 | | µg/L | 1 | 5/26/2001 |

**Qualifiers:**

- PQL - Practical Quantitation Limit
- ND - Not Detected at Practical Quantitation Limit
- J - Analyte detected below Practical Quantitation Limit
- B - Analyte detected in the associated Method Blank
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- Surr: - Surrogate



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# CHAIN OF CUSTODY RECORD

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LAB: (505) 325-5667 • FAX: (505) 327-1496

Date: _____

Page: _____ of _____

| | | | |
|---|---|---|---|
| Purchase Order No.: | Project No. | | |
| SEND INVOICE TO: Name | | REPORT RESULTS TO: Name | Title |
| Company | Dept. | Company | |
| Address | | Mailing Address | |
| City, State, Zip | | City, State, Zip | |
| | | Telephone No. | Telefax No. |

**PROJECT LOCATION:**

**SAMPLER'S SIGNATURE:**

| SAMPLE IDENTIFICATION | SAMPLE DATE | TIME | MATRIX | PRES. | Number of Containers | ANALYSIS REQUESTED | LAB ID |
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| Relinquished by: | Date/Time | Received by: | Date/Time |
| Relinquished by: | Date/Time | Received by: | Date/Time |
| Relinquished by: | Date/Time | Received by: | Date/Time |

Method of Shipment:

Rush | 24-48 Hours | 10 Working Days | By Date

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Special Instructions / Remarks:

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

On Site Technologies, LTD.

**Date:** *31-May-01*

**CLIENT:** Blagg Engineering
**Work Order:** 0105024
**Project:** Cross Timbers; Abrams J #1

# QC SUMMARY REPORT
## Method Blank

Sample ID: **MB1** Batch ID: **GC-1_010525** Test Code: **SW8021B** Units: **µg/L** Analysis Date **5/25/2001** Prep Date:
Client ID: **0105024** Run ID: **GC-1_010525A** SeqNo: **38387**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.5 | | | | | | | | | |
| Ethylbenzene | ND | 0.5 | | | | | | | | | |
| m,p-Xylene | ND | 1 | | | | | | | | | |
| Methyl tert-Butyl Ether | ND | 1 | | | | | | | | | |
| o-Xylene | ND | 0.5 | | | | | | | | | |
| Toluene | .1226 | 0.5 | | | | | | | | | J |

Sample ID: **MB1** Batch ID: **GC-1_010526** Test Code: **SW8021B** Units: **µg/L** Analysis Date **5/26/2001** Prep Date:
Client ID: **0105024** Run ID: **GC-1_010526A** SeqNo: **38414**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.5 | | | | | | | | | |
| Ethylbenzene | ND | 0.5 | | | | | | | | | |
| m,p-Xylene | ND | 1 | | | | | | | | | |
| Methyl tert-Butyl Ether | ND | 1 | | | | | | | | | |
| o-Xylene | ND | 0.5 | | | | | | | | | |
| Toluene | ND | 0.5 | | | | | | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *31-May-01*

**CLIENT:** Blagg Engineering
**Work Order:** 0105024
**Project:** Cross Timbers; Abrams J #1

# QC SUMMARY REPORT

## Sample Matrix Spike

Sample ID: **0105046-22AMS** Batch ID: **GC-1_010525** Test Code: **SW8021B** Units: **µg/L** Analysis Date **5/25/2001** Prep Date:

Client ID: **0105024** Run ID: **GC-1_010525A** SeqNo: **38388**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 3307 | 25 | 2000 | 1485 | 91.1% | 70 | 130 | | | | |
| Ethylbenzene | 2010 | 25 | 2000 | 379.4 | 81.5% | 70 | 130 | | | | |
| m,p-Xylene | 3691 | 50 | 4000 | 493 | 80.0% | 70 | 130 | | | | |
| Methyl tert-Butyl Ether | 4418 | 50 | 2000 | 2497 | 96.0% | 70 | 130 | | | | |
| o-Xylene | 1869 | 25 | 2000 | 55.85 | 90.7% | 70 | 130 | | | | |
| Toluene | 1904 | 25 | 2000 | 50.74 | 92.6% | 70 | 130 | | | | |

Sample ID: **0105046-22AMSD** Batch ID: **GC-1_010525** Test Code: **SW8021B** Units: **µg/L** Analysis Date **5/25/2001** Prep Date:

Client ID: **0105024** Run ID: **GC-1_010525A** SeqNo: **38389**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 3315 | 25 | 2000 | 1485 | 91.5% | 70 | 130 | 3307 | 0.3% | 8 | |
| Ethylbenzene | 1970 | 25 | 2000 | 379.4 | 79.5% | 70 | 130 | 2010 | 2.0% | 7 | |
| m,p-Xylene | 3583 | 50 | 4000 | 493 | 77.2% | 70 | 130 | 3691 | 3.0% | 7 | |
| Methyl tert-Butyl Ether | 4510 | 50 | 2000 | 2497 | 100.7% | 70 | 130 | 4418 | 2.1% | 6 | |
| o-Xylene | 1846 | 25 | 2000 | 55.85 | 89.5% | 70 | 130 | 1869 | 1.3% | 6 | |
| Toluene | 1871 | 25 | 2000 | 50.74 | 91.0% | 70 | 130 | 1904 | 1.7% | 6 | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

**CLIENT:** Blagg Engineering
**Work Order:** 0105024
**Project:** Cross Timbers; Abrams J #1

# QC SUMMARY REPORT
## Sample Matrix Spike

Sample ID: **0105021-01AMS** Batch ID: **GC-1_010526** Test Code: **SW8021B** Units: **µg/L** Analysis Date **5/26/2001** Prep Date:
Client ID: **0105024** Run ID: **GC-1_010526A** SeqNo: **38415**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 195.3 | 2.5 | 200 | 12.88 | 91.2% | 70 | 130 | | | | |
| Ethylbenzene | 249.3 | 2.5 | 200 | 74.66 | 87.3% | 70 | 130 | | | | |
| m,p-Xylene | 717.6 | 5 | 400 | 386.8 | 82.7% | 70 | 130 | | | | |
| Methyl tert-Butyl Ether | 194.6 | 5 | 200 | 1.964 | 96.3% | 70 | 130 | | | | |
| o-Xylene | 279.9 | 2.5 | 200 | 105.2 | 87.3% | 70 | 130 | | | | |
| Toluene | 186.2 | 2.5 | 200 | 1.688 | 92.3% | 70 | 130 | | | | |

Sample ID: **0105021-01AMSD** Batch ID: **GC-1_010526** Test Code: **SW8021B** Units: **µg/L** Analysis Date **5/26/2001** Prep Date:
Client ID: **0105024** Run ID: **GC-1_010526A** SeqNo: **38416**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 193.2 | 2.5 | 200 | 12.88 | 90.2% | 70 | 130 | 195.3 | 1.1% | 8 | |
| Ethylbenzene | 246.4 | 2.5 | 200 | 74.66 | 85.8% | 70 | 130 | 249.3 | 1.2% | 7 | |
| m,p-Xylene | 709 | 5 | 400 | 386.8 | 80.6% | 70 | 130 | 717.6 | 1.2% | 7 | |
| Methyl tert-Butyl Ether | 194.1 | 5 | 200 | 1.964 | 96.1% | 70 | 130 | 194.6 | 0.3% | 6 | |
| o-Xylene | 277.8 | 2.5 | 200 | 105.2 | 86.3% | 70 | 130 | 279.9 | 0.8% | 6 | |
| Toluene | 184.4 | 2.5 | 200 | 1.688 | 91.4% | 70 | 130 | 186.2 | 1.0% | 6 | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *31-May-01*

**CLIENT:** Blagg Engineering
**Work Order:** 0105024
**Project:** Cross Timbers; Abrams J #1

# QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: **LCS WATER** Batch ID: **GC-1_010525** Test Code: **SW8021B** Units: **µg/L** Analysis Date **5/25/2001** Prep Date:

Client ID: **0105024** Run ID: **GC-1_010525A** SeqNo: **38386**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 39.07 | 0.5 | 40 | 0 | 97.7% | 80 | 120 | | | | |
| Ethylbenzene | 39.1 | 0.5 | 40 | 0 | 97.8% | 80 | 120 | | | | |
| m,p-Xylene | 75 | 1 | 80 | 0 | 93.8% | 80 | 120 | | | | |
| Methyl tert-Butyl Ether | 40.74 | 1 | 40 | 0 | 101.9% | 80 | 120 | | | | |
| o-Xylene | 38.59 | 0.5 | 40 | 0 | 96.5% | 80 | 120 | | | | |
| Toluene | 38.58 | 0.5 | 40 | 0.1226 | 96.2% | 80 | 120 | | | | |

Sample ID: **LCS WATER** Batch ID: **GC-1_010526** Test Code: **SW8021B** Units: **µg/L** Analysis Date **5/26/2001** Prep Date:

Client ID: **0105024** Run ID: **GC-1_010526A** SeqNo: **38413**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 38.57 | 0.5 | 40 | 0 | 96.4% | 80 | 120 | | | | |
| Ethylbenzene | 38.79 | 0.5 | 40 | 0 | 97.0% | 80 | 120 | | | | |
| m,p-Xylene | 74.35 | 1 | 80 | 0 | 92.9% | 80 | 120 | | | | |
| Methyl tert-Butyl Ether | 40.36 | 1 | 40 | 0 | 100.9% | 80 | 120 | | | | |
| o-Xylene | 38.24 | 0.5 | 40 | 0 | 95.6% | 80 | 120 | | | | |
| Toluene | 38.14 | 0.5 | 40 | 0 | 95.4% | 80 | 120 | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *31-May-01*

**CLIENT:** Blagg Engineering
**Work Order:** 0105024
**Project:** Cross Timbers; Abrams J #1

# QC SUMMARY REPORT

## Continuing Calibration Verification Standard

Sample ID: **CCV1 BTEX_0105** Batch ID: **GC-1_010525** Test Code: **SW8021B** Units: **µg/L** Analysis Date **5/25/2001** Prep Date:

Client ID: **0105024** Run ID: **GC-1_010525A** SeqNo: **38383**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 20.01 | 0.5 | 20 | 0 | 100.0% | 85 | 115 | | | | |
| Ethylbenzene | 20.02 | 0.5 | 20 | 0 | 100.1% | 85 | 115 | | | | |
| m,p-Xylene | 38.51 | 1 | 40 | 0 | 96.3% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 20.81 | 1 | 20 | 0 | 104.0% | 85 | 115 | | | | |
| o-Xylene | 19.68 | 0.5 | 20 | 0 | 98.4% | 85 | 115 | | | | |
| Toluene | 19.74 | 0.5 | 20 | 0 | 98.7% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 75.57 | 0 | 80 | 0 | 94.5% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 81.98 | 0 | 80 | 0 | 102.5% | 70 | 130 | | | | |
| Fluorobenzene | 76.25 | 0 | 80 | 0 | 95.3% | 70 | 130 | | | | |

Sample ID: **CCV2 BTEX_0105** Batch ID: **GC-1_010525** Test Code: **SW8021B** Units: **µg/L** Analysis Date **5/25/2001** Prep Date:

Client ID: **0105024** Run ID: **GC-1_010525A** SeqNo: **38384**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 39.46 | 0.5 | 40 | 0 | 98.6% | 85 | 115 | | | | |
| Ethylbenzene | 39.46 | 0.5 | 40 | 0 | 98.7% | 85 | 115 | | | | |
| m,p-Xylene | 75.89 | 1 | 80 | 0 | 94.9% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 42.02 | 1 | 40 | 0 | 105.0% | 85 | 115 | | | | |
| o-Xylene | 39.02 | 0.5 | 40 | 0 | 97.5% | 85 | 115 | | | | |
| Toluene | 39.1 | 0.5 | 40 | 0 | 97.8% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 74.46 | 0 | 80 | 0 | 93.1% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 79.65 | 0 | 80 | 0 | 99.6% | 70 | 130 | | | | |
| Fluorobenzene | 76.07 | 0 | 80 | 0 | 95.1% | 70 | 130 | | | | |

**Qualifiers:** ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

**CLIENT:** Blagg Engineering
**Work Order:** 0105024
**Project:** Cross Timbers; Abrams J #1

# QC SUMMARY REPORT
## Continuing Calibration Verification Standard

Sample ID: **CCV3 BTEX_0105** Batch ID: **GC-1_010525** Test Code: **SW8021B** Units: **µg/L** Analysis Date **5/25/2001** Prep Date:
Client ID: **0105024** Run ID: **GC-1_010525A** SeqNo: **38385**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 19.78 | 0.5 | 20 | 0 | 98.9% | 85 | 115 | | | | |
| Ethylbenzene | 19.68 | 0.5 | 20 | 0 | 98.4% | 85 | 115 | | | | |
| m,p-Xylene | 37.77 | 1 | 40 | 0 | 94.4% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 20.7 | 1 | 20 | 0 | 103.5% | 85 | 115 | | | | |
| o-Xylene | 19.38 | 0.5 | 20 | 0 | 96.9% | 85 | 115 | | | | |
| Toluene | 19.43 | 0.5 | 20 | 0 | 97.1% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 75.02 | 0 | 80 | 0 | 93.8% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 83 | 0 | 80 | 0 | 103.8% | 70 | 130 | | | | |
| Fluorobenzene | 76.55 | 0 | 80 | 0 | 95.7% | 70 | 130 | | | | |

Sample ID: **CCV1 BTEX_0105** Batch ID: **GC-1_010526** Test Code: **SW8021B** Units: **µg/L** Analysis Date **5/26/2001** Prep Date:
Client ID: **0105024** Run ID: **GC-1_010526A** SeqNo: **38410**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 19.68 | 0.5 | 20 | 0 | 98.4% | 85 | 115 | | | | |
| Ethylbenzene | 19.79 | 0.5 | 20 | 0 | 98.9% | 85 | 115 | | | | |
| m,p-Xylene | 38.06 | 1 | 40 | 0 | 95.1% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 20.65 | 1 | 20 | 0 | 103.2% | 85 | 115 | | | | |
| o-Xylene | 19.46 | 0.5 | 20 | 0 | 97.3% | 85 | 115 | | | | |
| Toluene | 19.49 | 0.5 | 20 | 0 | 97.5% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 75.29 | 0 | 80 | 0 | 94.1% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 81.03 | 0 | 80 | 0 | 101.3% | 70 | 130 | | | | |
| Fluorobenzene | 76.12 | 0 | 80 | 0 | 95.2% | 70 | 130 | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

**CLIENT:** Blagg Engineering
**Work Order:** 0105024
**Project:** Cross Timbers; Abrams J #1

# QC SUMMARY REPORT
## Continuing Calibration Verification Standard

Sample ID: **CCV2 BTEX_0105** Batch ID: **GC-1_010526** Test Code: **SW8021B** Units: **µg/L** Analysis Date **5/26/2001** Prep Date:
Client ID: **0105024** Run ID: **GC-1_010526A** SeqNo: **38411**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 39.2 | 0.5 | 40 | 0 | 98.0% | 85 | 115 | | | | |
| Ethylbenzene | 39.58 | 0.5 | 40 | 0 | 98.9% | 85 | 115 | | | | |
| m,p-Xylene | 75.99 | 1 | 80 | 0 | 95.0% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 40.05 | 1 | 40 | 0 | 100.1% | 85 | 115 | | | | |
| o-Xylene | 38.91 | 0.5 | 40 | 0 | 97.3% | 85 | 115 | | | | |
| Toluene | 39.11 | 0.5 | 40 | 0 | 97.8% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 74.87 | 0 | 80 | 0 | 93.6% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 72.96 | 0 | 80 | 0 | 91.2% | 70 | 130 | | | | |
| Fluorobenzene | 75.46 | 0 | 80 | 0 | 94.3% | 70 | 130 | | | | |

Sample ID: **CCV3 BTEX_0105** Batch ID: **GC-1_010526** Test Code: **SW8021B** Units: **µg/L** Analysis Date **5/26/2001** Prep Date:
Client ID: **0105024** Run ID: **GC-1_010526A** SeqNo: **38412**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 19.98 | 0.5 | 20 | 0 | 99.9% | 85 | 115 | | | | |
| Ethylbenzene | 19.93 | 0.5 | 20 | 0 | 99.6% | 85 | 115 | | | | |
| m,p-Xylene | 38.24 | 1 | 40 | 0 | 95.6% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 21.4 | 1 | 20 | 0 | 107.0% | 85 | 115 | | | | |
| o-Xylene | 19.52 | 0.5 | 20 | 0 | 97.6% | 85 | 115 | | | | |
| Toluene | 19.67 | 0.5 | 20 | 0 | 98.4% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 74.69 | 0 | 80 | 0 | 93.4% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 81.39 | 0 | 80 | 0 | 101.7% | 70 | 130 | | | | |
| Fluorobenzene | 76.12 | 0 | 80 | 0 | 95.2% | 70 | 130 | | | | |

**Qualifiers:** ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** 31-May-01

**CLIENT:** Blagg Engineering
**Work Order:** 0105024
**Project:** Cross Timbers; Abrams J #1
**Test No:** SW8021B

# QC SUMMARY REPORT
# SURROGATE RECOVERIES

## Aromatic Volatiles by GC/PID

| Sample ID | 14FBZ | 4BCBZ | FLBZ |
|---|---|---|---|
| 0105019-19A | 93.8 | 101 | 94.7 |
| 0105019-20A | 94.8 | 98.7 | 96.1 |
| 0105019-21A | 94.5 | 98.9 | 95.8 |
| 0105019-22A | 95 | 101 | 96 |
| 0105021-01A | 91.4 | 94.7 | 93.2 |
| 0105021-01AMS | 91 | 93 | 92.3 |
| 0105021-01AMSD | 90.8 | 92.6 | 91.7 |
| 0105021-02A | 89.4 | 98.9 | 92.3 |
| 0105022-01A | 91.3 | 98.2 | 93.1 |
| 0105022-02A | 93.2 | 100 | 94.3 |
| 0105023-01A | 95.2 | 99.2 | 96.4 |
| 0105023-02A | 93.9 | 93.4 | 95.4 |
| 0105024-01A | 92.4 | 101 | 94.3 |
| 0105024-02A | 87 | 94.2 | 88.9 |
| 0105024-03A | 94.3 | 100 | 96.1 |
| 0105046-01A | 94.3 | 93.5 | 96.1 |
| 0105046-02A | 95.3 | 97.3 | 100 |
| 0105046-03A | 101 | 101 | 95.8 |
| 0105046-04A | 94.8 | 93.6 | 98.4 |
| 0105046-05A | 91.9 | 90.6 | 94 |
| 0105046-06A | 91.9 | 93.4 | 93.2 |
| 0105046-07A | 94.8 | 102 | 96.8 |
| 0105046-08A | 94.3 | 102 | 96.2 |
| 0105046-09A | 95.4 | 101 | 96.3 |
| 0105046-10A | 95.2 | 104 | 96.6 |
| 0105046-11A | 95.4 | 101 | 95.9 |
| 0105046-12A | 95 | 101 | 111 |

| Acronym | | Surrogate | QC Limits |
|---|---|---|---|
| 14FBZ | = | 1,4-Difluorobenzene | 70-130 |
| 4BCBZ | = | 4-Bromochlorobenzene | 70-130 |
| FLBZ | = | Fluorobenzene | 70-130 |

*** Surrogate recovery outside acceptance limits**

**CLIENT:** Blagg Engineering
**Work Order:** 0105024
**Project:** Cross Timbers; Abrams J #1
**Test No:** SW8021B

# QC SUMMARY REPORT
# SURROGATE RECOVERIES

## Aromatic Volatiles by GC/PID

| Sample ID | 14FBZ | 4BCBZ | FLBZ |
|---|---|---|---|
| 0105046-13A | 94.7 | 99.9 | 101 |
| 0105046-18A | 93.2 | 101 | 94.9 |
| 0105046-20A | 91.5 | 95.2 | 92.6 |
| 0105046-21A | 93.8 | 96.5 | 95.2 |
| 0105046-22A | 95.1 | 102 | 98.1 |
| 0105046-22AMS | 93.4 | 115 | 94.9 |
| 0105046-22AMSD | 93 | 106 | 95.1 |
| 0105046-31A | 95.3 | 102 | 96.1 |
| 0105046-32A | 94.3 | 100 | 95.6 |
| CCV1 BTEX_01052 | 94.1 | 101 | 95.2 |
| CCV2 BTEX_01052 | 93.6 | 91.2 | 94.3 |
| CCV3 BTEX_01052 | 93.4 | 102 | 95.2 |
| LCS WATER | 93.6 | 103 | 94.7 |
| MB1 | 94.1 | 103 | 95.1 |

| Acronym | | Surrogate | QC Limits |
|---|---|---|---|
| 14FBZ | = | 1,4-Difluorobenzene | 70-130 |
| 4BCBZ | = | 4-Bromochlorobenzene | 70-130 |
| FLBZ | = | Fluorobenzene | 70-130 |

*** Surrogate recovery outside acceptance limits**

# BLAGG ENGINEERING, INC.

## MONITOR WELL SAMPLING DATA

**CLIENT :** XTO ENERGY , INC.

**CHAIN-OF-CUSTODY # :** 11152

**ABRAMS J # 1**
**UNIT I, SEC. 29, T29N, R10W**

**LABORATORY (S) USED :** ON - SITE TECH.

*Date :* Aug. 30, 2001

*Filename :* 08-30-01.WK4

**SAMPLER :** N J V

**PROJECT MANAGER :** N J V

| WELL # | WELL ELEV. (ft) | WATER ELEV. (ft) | DEPTH TO WATER (ft) | TOTAL DEPTH (ft) | SAMPLING TIME | pH | CONDUCT (umhos) | VOLUME PURGED (gal.) | FREE PRODUCT (ft) |
|---|---|---|---|---|---|---|---|---|---|
| 1R | | | 44.97 | 52.00 | 1100 | 7.24 | 900 | 3.50 | - |
| 3 | 95.83 | 51.40 | 44.43 | 50.00 | 1015 | 7.19 | 1,000 | 2.75 | - |
| 6 | 96.61 | 51.35 | 45.26 | 50.00 | 0930 | 7.22 | 700 | 2.25 | - |
| 10 | 97.28 | 51.55 | 45.73 | 50.00 | 1130 | 7.35 | 1,800 | 2.00 | - |

NOTES : Volume of water purged from well prior to sampling; V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores).

Ideally a minimum of three (3) wellbore volumes:

1.25 " well diameter = 0.19 gallons per foot of water ( or 24 oz. ).

2 bails per foot - small teflon bailer.

3 bails per foot - 3 / 4 " teflon bailer.

2.00 " well diameter = 0.49 gallons per foot of water.

4.00 " well diameter = 1.95 gallons per foot of water.

Comments or note well diameter if not standard 2 ".

Installed MW # 1R on 8 / 23 / 01 ( 10 ft. screen between 42 - 52 ft. interval ) .

Developed MW # 1R on 8 / 24 / 01 . Excellent recovery in MW # 1R ,

fair in MW 's 3 & 6 , poor in MW # 10. Collected BTEX in all MW 's

listed above . BEI reclamation system operational at time of sampling .

mw # 6 3.38'

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FAX: (505) 327-1496

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556
FAX: (505) 327-1496

# ANALYTICAL REPORT

**Date:** *12-Sep-01*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0108034 | **Client Sample ID:** | MW #1R |
| **Lab ID:** | 0108034-01A **Matrix:** AQUEOUS | **Collection Date:** | 8/30/2001 11:00:00 AM |
| **Project:** | XTO Energy; Abrams J #1 | **COC Record:** | 11152 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DM** |
| Benzene | ND | 0.5 | | µg/L | 1 | 9/4/2001 |
| Toluene | 14 | 0.5 | | µg/L | 1 | 9/4/2001 |
| Ethylbenzene | 16 | 0.5 | | µg/L | 1 | 9/4/2001 |
| m,p-Xylene | 250 | 1 | | µg/L | 1 | 9/4/2001 |
| o-Xylene | 59 | 0.5 | | µg/L | 1 | 9/4/2001 |

**Qualifiers:**

- PQL - Practical Quantitation Limit
- ND - Not Detected at Practical Quantitation Limit
- J - Analyte detected below Practical Quantitation Limit
- B - Analyte detected in the associated Method Blank
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- Surr: - Surrogate



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LAB: (505) 325-1556
FAX: (505) 327-1496

# ANALYTICAL REPORT

**Date:** *12-Sep-01*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0108034 | **Client Sample ID:** | MW #3 |
| **Lab ID:** | 0108034-02A **Matrix:** AQUEOUS | **Collection Date:** | 8/30/2001 10:15:00 AM |
| **Project:** | XTO Energy; Abrams J #1 | **COC Record:** | 11152 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DM** |
| Benzene | ND | 0.5 | | µg/L | 1 | 9/4/2001 |
| Toluene | ND | 0.5 | | µg/L | 1 | 9/4/2001 |
| Ethylbenzene | 6.2 | 0.5 | | µg/L | 1 | 9/4/2001 |
| m,p-Xylene | 160 | 1 | | µg/L | 1 | 9/4/2001 |
| o-Xylene | 35 | 0.5 | | µg/L | 1 | 9/4/2001 |

**Qualifiers:**

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- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- Surr: - Surrogate



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# ANALYTICAL REPORT

**Date:** *12-Sep-01*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0108034 | **Client Sample ID:** | MW #6 |
| **Lab ID:** | 0108034-03A **Matrix:** AQUEOUS | **Collection Date:** | 8/30/2001 9:30:00 AM |
| **Project:** | XTO Energy; Abrams J #1 | **COC Record:** | 11152 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DM** |
| Benzene | 0.5 | 0.5 | | µg/L | 1 | 9/4/2001 |
| Toluene | ND | 0.5 | | µg/L | 1 | 9/4/2001 |
| Ethylbenzene | 1.6 | 0.5 | | µg/L | 1 | 9/4/2001 |
| m,p-Xylene | 3.1 | 1 | | µg/L | 1 | 9/4/2001 |
| o-Xylene | ND | 0.5 | | µg/L | 1 | 9/4/2001 |

**Qualifiers:**

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
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B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate



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# ANALYTICAL REPORT

**Date:** *12-Sep-01*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0108034 | **Client Sample ID:** | MW #10 |
| **Lab ID:** | 0108034-04A **Matrix:** AQUEOUS | **Collection Date:** | 8/30/2001 11:30:00 AM |
| **Project:** | XTO Energy; Abrams J #1 | **COC Record:** | 11152 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DM** |
| Benzene | ND | 0.5 | | µg/L | 1 | 9/4/2001 |
| Toluene | ND | 0.5 | | µg/L | 1 | 9/4/2001 |
| Ethylbenzene | ND | 0.5 | | µg/L | 1 | 9/4/2001 |
| m,p-Xylene | ND | 1 | | µg/L | 1 | 9/4/2001 |
| o-Xylene | ND | 0.5 | | µg/L | 1 | 9/4/2001 |

**Qualifiers:**

- PQL - Practical Quantitation Limit
- ND - Not Detected at Practical Quantitation Limit
- J - Analyte detected below Practical Quantitation Limit
- B - Analyte detected in the associated Method Blank
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- Surr: - Surrogate



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11152

# CHAIN OF CUSTODY RECORD

ON SITE TECHNOLOGIES, LTD.

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LAB: (505) 325-5667 • FAX: (505) 327-1496

Date: 3/10/97

Page: 1 of 1

| | | | |
|---|---|---|---|
| Purchase Order No.: | Project No. | | |
| SEND INVOICE TO: Name | TOM PLACE | REPORT RESULTS TO: Name | Title |
| Company | BLAGG ENGINEERING INC. Dept. | Company | |
| Address | | Mailing Address | |
| City, State, Zip | | City, State, Zip | |
| | | Telephone No. 632-1199 | Telefax No. 632-3903 |

**PROJECT LOCATION:** NTD ENERGY - FARMINGTON, NM

**SAMPLER'S SIGNATURE:**

| SAMPLE IDENTIFICATION | SAMPLE DATE | TIME | MATRIX | PRES. | Number of Containers | ANALYSIS REQUESTED | LAB ID |
|---|---|---|---|---|---|---|---|
| MW #1R | 3/6/97 | 1100 | WATER | HCl & ICE | 3 | ✓ | 010-6734-01A |
| MW #5 | 3/6/97 | 1015 | WATER | HCl & ICE | 3 | ✓ | -02A |
| MW #6 | 3/6/97 | 0930 | WATER | HCl & ICE | 3 | ✓ | -03A |
| MW #7 | 3/6/97 | 1120 | WATER | HCl & ICE | 3 | ✓ | -04A |

| | | | |
|---|---|---|---|
| Relinquished by: | Date/Time 3/10/97 1325 | Received by: | Date/Time 3/10/97 1325 |
| Relinquished by: | Date/Time | Received by: | Date/Time |
| Relinquished by: | Date/Time | Received by: | Date/Time |

Method of Shipment:

Rush | 24-48 Hours | 10 Working Days | By Date

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Special Instructions / Remarks:

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

On Site Technologies, LTD.

**Date:** *12-Sep-01*

**CLIENT:** Blagg Engineering
**Work Order:** 0108034
**Project:** XTO Energy; Abrams J #1

# QC SUMMARY REPORT
## Method Blank

Sample ID: **MB1** Batch ID: **GC-1_010904** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/4/2001** Prep Date: **9/4/01**

Client ID: **0108034** Run ID: **GC-1_010904A** SeqNo: **41888**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.5 | | | | | | | | | |
| Ethylbenzene | ND | 0.5 | | | | | | | | | |
| *m,p*-Xylene | ND | 1 | | | | | | | | | |
| Methyl tert-Butyl Ether | ND | 1 | | | | | | | | | |
| o-Xylene | ND | 0.5 | | | | | | | | | |
| Toluene | .0733 | 0.5 | | | | | | | | | J |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *12-Sep-01*

**CLIENT:** Blagg Engineering
**Work Order:** 0108034
**Project:** XTO Energy; Abrams J #1

# QC SUMMARY REPORT

## Sample Matrix Spike

Sample ID: **0108037-01AMS** Batch ID: **GC-1_010904** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/4/2001** Prep Date: **9/4/01**
Client ID: **0108034** Run ID: **GC-1_010904A** SeqNo: **41889**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 2295 | 10 | 800 | 1560 | 91.8% | 70 | 130 | | | | |
| Ethylbenzene | 1319 | 10 | 800 | 518.6 | 100.1% | 70 | 130 | | | | |
| m,p-Xylene | 2610 | 20 | 1600 | 1063 | 96.7% | 70 | 130 | | | | |
| Methyl tert-Butyl Ether | 969.8 | 20 | 800 | 170.8 | 99.9% | 70 | 130 | | | | |
| o-Xylene | 971.5 | 10 | 800 | 134.1 | 104.7% | 70 | 130 | | | | |
| Toluene | 1038 | 10 | 800 | 204.9 | 104.2% | 70 | 130 | | | | |

Sample ID: **0108037-01AMSD** Batch ID: **GC-1_010904** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/4/2001** Prep Date: **9/4/01**
Client ID: **0108034** Run ID: **GC-1_010904A** SeqNo: **41890**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 2263 | 10 | 800 | 1560 | 87.8% | 70 | 130 | 2295 | 1.4% | 8 | |
| Ethylbenzene | 1301 | 10 | 800 | 518.6 | 97.9% | 70 | 130 | 1319 | 1.3% | 7 | |
| m,p-Xylene | 2577 | 20 | 1600 | 1063 | 94.6% | 70 | 130 | 2610 | 1.3% | 7 | |
| Methyl tert-Butyl Ether | 940.3 | 20 | 800 | 170.8 | 96.2% | 70 | 130 | 969.8 | 3.1% | 6 | |
| o-Xylene | 963.3 | 10 | 800 | 134.1 | 103.7% | 70 | 130 | 971.5 | 0.8% | 6 | |
| Toluene | 1023 | 10 | 800 | 204.9 | 102.2% | 70 | 130 | 1038 | 1.5% | 6 | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *12-Sep-01*

**CLIENT:** Blagg Engineering
**Work Order:** 0108034
**Project:** XTO Energy; Abrams J #1

# QC SUMMARY REPORT

## Laboratory Control Spike - generic

Sample ID: **LCS WATER** Batch ID: **GC-1_010904** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/4/2001** Prep Date: **9/4/01**

Client ID: **0108034** Run ID: **GC-1_010904A** SeqNo: **41887**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 42.27 | 0.5 | 40 | 0 | 105.7% | 80 | 120 | | | | |
| Ethylbenzene | 43.26 | 0.5 | 40 | 0 | 108.2% | 80 | 120 | | | | |
| m,p-Xylene | 84.66 | 1 | 80 | 0 | 105.8% | 80 | 120 | | | | |
| Methyl tert-Butyl Ether | 41.31 | 1 | 40 | 0 | 103.3% | 80 | 120 | | | | |
| o-Xylene | 43.31 | 0.5 | 40 | 0 | 108.3% | 80 | 120 | | | | |
| Toluene | 42.43 | 0.5 | 40 | 0.0733 | 105.9% | 80 | 120 | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *12-Sep-01*

**CLIENT:** Blagg Engineering
**Work Order:** 0108034
**Project:** XTO Energy; Abrams J #1

# QC SUMMARY REPORT

## Continuing Calibration Verification Standard

Sample ID: **CCV1 BTEX_0107** Batch ID: **GC-1_010904** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/4/2001** Prep Date: **9/4/01**

Client ID: **0108034** Run ID: **GC-1_010904A** SeqNo: **41884**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 21.29 | 0.5 | 20 | 0 | 106.5% | 85 | 115 | | | | |
| Ethylbenzene | 21.76 | 0.5 | 20 | 0 | 108.8% | 85 | 115 | | | | |
| m,p-Xylene | 42.98 | 1 | 40 | 0 | 107.5% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 20.87 | 1 | 20 | 0 | 104.4% | 85 | 115 | | | | |
| o-Xylene | 21.78 | 0.5 | 20 | 0 | 108.9% | 85 | 115 | | | | |
| Toluene | 21.3 | 0.5 | 20 | 0 | 106.5% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 113.8 | 0 | 120 | 0 | 94.9% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 128 | 0 | 120 | 0 | 106.7% | 70 | 130 | | | | |
| Fluorobenzene | 113 | 0 | 120 | 0 | 94.1% | 70 | 130 | | | | |

Sample ID: **CCV2 BTEX_0107** Batch ID: **GC-1_010904** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/4/2001** Prep Date: **9/4/01**

Client ID: **0108034** Run ID: **GC-1_010904A** SeqNo: **41885**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 21.15 | 0.5 | 20 | 0 | 105.8% | 85 | 115 | | | | |
| Ethylbenzene | 22.95 | 0.5 | 20 | 0 | 114.8% | 85 | 115 | | | | |
| m,p-Xylene | 44.53 | 1 | 40 | 0 | 111.3% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 21.51 | 1 | 20 | 0 | 107.6% | 85 | 115 | | | | |
| o-Xylene | 21.58 | 0.5 | 20 | 0 | 107.9% | 85 | 115 | | | | |
| Toluene | 21.22 | 0.5 | 20 | 0 | 106.1% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 114 | 0 | 120 | 0 | 95.0% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 128.6 | 0 | 120 | 0 | 107.2% | 70 | 130 | | | | |
| Fluorobenzene | 113.6 | 0 | 120 | 0 | 94.6% | 70 | 130 | | | | |

**Qualifiers:** ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

**CLIENT:** Blagg Engineering
**Work Order:** 0108034
**Project:** XTO Energy; Abrams J #1

# QC SUMMARY REPORT
## Continuing Calibration Verification Standard

Sample ID: **CCV3 BTEX_0107** Batch ID: **GC-1_010904** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/4/2001** Prep Date: **9/4/01**

Client ID: **0108034** Run ID: **GC-1_010904A** SeqNo: **41886**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 40.84 | 0.5 | 40 | 0 | 102.1% | 85 | 115 | | | | |
| Ethylbenzene | 41.44 | 0.5 | 40 | 0 | 103.6% | 85 | 115 | | | | |
| m,p-Xylene | 81.28 | 1 | 80 | 0 | 101.6% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 41.6 | 1 | 40 | 0 | 104.0% | 85 | 115 | | | | |
| o-Xylene | 41.72 | 0.5 | 40 | 0 | 104.3% | 85 | 115 | | | | |
| Toluene | 41.05 | 0.5 | 40 | 0 | 102.6% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 113 | 0 | 120 | 0 | 94.2% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 126.1 | 0 | 120 | 0 | 105.1% | 70 | 130 | | | | |
| Fluorobenzene | 112.9 | 0 | 120 | 0 | 94.1% | 70 | 130 | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** 12-Sep-01

**CLIENT:** Blagg Engineering
**Work Order:** 0108034
**Project:** XTO Energy; Abrams J #1
**Test No:** SW8021B

# QC SUMMARY REPORT
# SURROGATE RECOVERIES

## Aromatic Volatiles by GC/PID

| Sample ID | 14FBZ | 4BCBZ | FLBZ |
|---|---|---|---|
| 0108032-01A | 94.5 | 104 | 94.4 |
| 0108032-02A | 95.2 | 107 | 94.8 |
| 0108032-03A | 92.4 | 105 | 92.7 |
| 0108032-04A | 91.6 | 104 | 91.5 |
| 0108032-05A | 94.2 | 106 | 94.2 |
| 0108034-01A | 91.4 | 102 | 93.7 |
| 0108034-02A | 91.5 | 107 | 93.2 |
| 0108034-03A | 93.6 | 101 | 93.8 |
| 0108034-04A | 95.3 | 105 | 95.4 |
| 0108037-01A | 92.7 | 106 | 93.1 |
| 0108037-01AMS | 92.7 | 105 | 92.6 |
| 0108037-01AMSD | 93 | 106 | 92.5 |
| 0108037-02A | 95.4 | 105 | 95.6 |
| 0108037-03A | 93.5 | 104 | 93.6 |
| CCV1 BTEX_01070 | 94.8 | 107 | 94.1 |
| CCV2 BTEX_01070 | 95 | 107 | 94.6 |
| CCV3 BTEX_01070 | 94.2 | 105 | 94.1 |
| LCS WATER | 94.1 | 106 | 93.8 |
| MB1 | 95.4 | 106 | 94.9 |

| Acronym | | Surrogate | QC Limits |
|---|---|---|---|
| 14FBZ | = | 1,4-Difluorobenzene | 70-130 |
| 4BCBZ | = | 4-Bromochlorobenzene | 70-130 |
| FLBZ | = | Fluorobenzene | 70-130 |

*** Surrogate recovery outside acceptance limits**

# BLAGG ENGINEERING, INC.

## MONITOR WELL SAMPLING DATA

**CLIENT :** XTO ENERGY , INC.

**CHAIN-OF-CUSTODY # :** 11162

**ABRAMS J # 1**
**UNIT I, SEC. 29, T29N, R10W**

**LABORATORY (S) USED :** ON - SITE TECH.

*Date :* December 19, 2001

**SAMPLER :** N J V

*Filename :* 12-19-01.WK4

**PROJECT MANAGER :** N J V

| WELL # | WELL ELEV. (ft) | WATER ELEV. (ft) | DEPTH TO WATER (ft) | TOTAL DEPTH (ft) | SAMPLING TIME | pH | CONDUCT (umhos) | VOLUME PURGED (gal.) | FREE PRODUCT (ft) |
|---|---|---|---|---|---|---|---|---|---|
| 1R | | | 44.18 | 52.00 | 1220 | 7.12 | 1,000 | 3.75 | - |
| 3 | 95.83 | 52.13 | 43.70 | 50.00 | 1305 | 7.10 | 1,100 | 1.25 | - |
| 6 | 96.61 | 51.96 | 44.65 | 50.00 | 1350 | 7.04 | 1,100 | 2.75 | - |
| 10 | 97.28 | 52.42 | 44.86 | 50.00 | 1135 | 6.80 | 1,900 | 1.25 | - |

NOTES : Volume of water purged from well prior to sampling: V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores).

Ideally a minimum of three (3) wellbore volumes:

1.25 " well diameter = 0.19 gallons per foot of water ( or 24 oz. ).

2 bails per foot - small teflon bailer.

3 bails per foot - 3 / 4 " teflon bailer.

2.00 " well diameter = 0.49 gallons per foot of water.

4.00 " well diameter = 1.95 gallons per foot of water.

Comments or note well diameter if not standard 2 ".

Excellent recovery in MW # 1R , fair in # 6 , poor in # 3 & # 10 . Collected BTEX in all MW 's listed above . BEI reclamation system operational at time of sampling .

mw # 6 3.38'

OFF: (505) 325-5667
FAX: (505) 327-1496

# ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556
FAX: (505) 327-1496

## ANALYTICAL REPORT

**Date:** *20-Dec-01*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0112023 | **Client Sample ID:** | MW #1R |
| **Lab ID:** | 0112023-01A **Matrix:** AQUEOUS | **Collection Date:** | 12/19/2001 12:20:00 PM |
| **Project:** | XTO Energy; Abrams J #1 | **COC Record:** | 11162 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DDM** |
| Benzene | 0.8 | 0.5 | | µg/L | 1 | 12/19/2001 |
| Toluene | ND | 0.5 | | µg/L | 1 | 12/19/2001 |
| Ethylbenzene | 31 | 0.5 | | µg/L | 1 | 12/19/2001 |
| m,p-Xylene | 150 | 1 | | µg/L | 1 | 12/19/2001 |
| o-Xylene | 3.4 | 0.5 | | µg/L | 1 | 12/19/2001 |

**Qualifiers:**

- PQL - Practical Quantitation Limit
- ND - Not Detected at Practical Quantitation Limit
- J - Analyte detected below Practical Quantitation Limit
- B - Analyte detected in the associated Method Blank
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- Surr: - Surrogate



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# ANALYTICAL REPORT

**Date:** *20-Dec-01*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0112023 | **Client Sample ID:** | MW #3 |
| **Lab ID:** | 0112023-02A **Matrix:** AQUEOUS | **Collection Date:** | 12/19/2001 1:05:00 PM |
| **Project:** | XTO Energy; Abrams J #1 | **COC Record:** | 11162 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DDM** |
| Benzene | ND | 0.5 | | µg/L | 1 | 12/19/2001 |
| Toluene | ND | 0.5 | | µg/L | 1 | 12/19/2001 |
| Ethylbenzene | 1.2 | 0.5 | | µg/L | 1 | 12/19/2001 |
| m,p-Xylene | 110 | 1 | | µg/L | 1 | 12/19/2001 |
| o-Xylene | 24 | 0.5 | | µg/L | 1 | 12/19/2001 |

**Qualifiers:**

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate



**P.O. BOX 2606 • FARMINGTON, NM 87499**
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LAB: (505) 325-1556
FAX: (505) 327-1496

# ANALYTICAL REPORT

**Date:** *20-Dec-01*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0112023 | **Client Sample ID:** | MW #6 |
| **Lab ID:** | 0112023-03A **Matrix:** AQUEOUS | **Collection Date:** | 12/19/2001 1:50:00 PM |
| **Project:** | XTO Energy; Abrams J #1 | **COC Record:** | 11162 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DDM** |
| Benzene | 1.2 | 0.5 | | µg/L | 1 | 12/19/2001 |
| Toluene | ND | 0.5 | | µg/L | 1 | 12/19/2001 |
| Ethylbenzene | 5.6 | 0.5 | | µg/L | 1 | 12/19/2001 |
| m,p-Xylene | 5.6 | 1 | | µg/L | 1 | 12/19/2001 |
| o-Xylene | 0.5 | 0.5 | | µg/L | 1 | 12/19/2001 |

**Qualifiers:**

- PQL - Practical Quantitation Limit
- ND - Not Detected at Practical Quantitation Limit
- J - Analyte detected below Practical Quantitation Limit
- B - Analyte detected in the associated Method Blank
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- Surr: - Surrogate



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# ANALYTICAL REPORT

**Date:** *20-Dec-01*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0112023 | **Client Sample ID:** | MW #10 |
| **Lab ID:** | 0112023-04A **Matrix:** AQUEOUS | **Collection Date:** | 12/19/2001 11:35:00 AM |
| **Project:** | XTO Energy; Abrams J #1 | **COC Record:** | 11162 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DDM** |
| Benzene | ND | 0.5 | | µg/L | 1 | 12/19/2001 |
| Toluene | ND | 0.5 | | µg/L | 1 | 12/19/2001 |
| Ethylbenzene | 20 | 0.5 | | µg/L | 1 | 12/19/2001 |
| m,p-Xylene | 3.8 | 1 | | µg/L | 1 | 12/19/2001 |
| o-Xylene | 0.7 | 0.5 | | µg/L | 1 | 12/19/2001 |

**Qualifiers:**

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
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R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate



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11162

# CHAIN OF CUSTODY RECORD

ON SITE TECHNOLOGIES, LTD.

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LAB: (505) 325-5667 • FAX: (505) 327-1496

Date: 12/19/01

Page: 1 of 1

| | | | |
|---|---|---|---|
| Purchase Order No.: | Project No. | | |
| SEND INVOICE TO — Name: JEFF BLAGG | | REPORT RESULTS TO — Name: NELSON VELEZ | Title |
| Company: BLAGG ENGINEERING INC. | Dept. | Company: EMT | |
| Address | | Mailing Address | |
| City, State, Zip | | City, State, Zip | |
| | | Telephone No. 632-1199 | Telefax No. 632-3903 |

**PROJECT LOCATION:** XTO ENERGY - ARMIJO # 1

**SAMPLER'S SIGNATURE:**

| SAMPLE IDENTIFICATION | SAMPLE DATE | SAMPLE TIME | SAMPLE MATRIX | SAMPLE PRES. | Number of Containers | BTEX 8021B | LAB ID |
|---|---|---|---|---|---|---|---|
| MW # 2 IR | 12/19/01 | 1220 | WATER | HCl & ICE | 2 | ✓ | 0112177-01A |
| MW # 3 | 12/19/01 | 1305 | WATER | HCl & ICE | 2 | ✓ | -02A |
| MW # 6 | 12/19/01 | 1250 | WATER | HCl & ICE | 2 | ✓ | -03A |
| MW # 10 | 12/19/01 | 1125 | WATER | HCl & ICE | 2 | ✓ | -04A |

| | | | |
|---|---|---|---|
| Relinquished by: | Date/Time 12/19/01 1512 | Received by: | Date/Time 12/19/01 1512 |
| Relinquished by: | Date/Time | Received by: | Date/Time |
| Relinquished by: | Date/Time | Received by: | Date/Time |

Method of Shipment:

Rush | 24-48 Hours | 10 Working Days | By Date

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Special Instructions / Remarks:

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

On Site Technologies, LTD.

**Date:** *20-Dec-01*

**CLIENT:** Blagg Engineering
**Work Order:** 0112023
**Project:** XTO Energy; Abrams J #1

# QC SUMMARY REPORT
## Method Blank

Sample ID: **MB_011219** Batch ID: **GC-1_011219** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/19/2001** Prep Date:

Client ID: **0112023** Run ID: **GC-1_011219A** SeqNo: **45950**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.5 | | | | | | | | | |
| Ethylbenzene | ND | 0.5 | | | | | | | | | |
| m,p-Xylene | ND | 1 | | | | | | | | | |
| o-Xylene | ND | 0.5 | | | | | | | | | |
| Toluene | .2371 | 0.5 | | | | | | | | | J |
| 1,4-Difluorobenzene | 104 | 0 | | | | | | | | | |
| 4-Bromochlorobenzene | 112.6 | 0 | | | | | | | | | |
| Fluorobenzene | 102.8 | 0 | | | | | | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *20-Dec-01*

**CLIENT:** Blagg Engineering
**Work Order:** 0112023
**Project:** XTO Energy; Abrams J #1

# QC SUMMARY REPORT

## Sample Matrix Spike

Sample ID: **0112021-02AMS** Batch ID: **GC-1_011219** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/19/2001** Prep Date:

Client ID: **0112023** Run ID: **GC-1_011219A** SeqNo: **45951**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 779.8 | 5 | 400 | 400 | 94.9% | 70 | 130 | | | | |
| Ethylbenzene | 534.6 | 5 | 400 | 160 | 93.6% | 70 | 130 | | | | |
| m,p-Xylene | 1629 | 10 | 800 | 790 | 104.9% | 70 | 130 | | | | |
| o-Xylene | 485.2 | 5 | 400 | 95 | 97.6% | 70 | 130 | | | | |
| Toluene | 410.1 | 5 | 400 | 30 | 95.0% | 70 | 130 | | | | |
| 1,4-Difluorobenzene | 980.7 | 0 | 1100 | 0 | 89.2% | 77 | 112 | | | | |
| 4-Bromochlorobenzene | 1165 | 0 | 1100 | 0 | 105.9% | 88 | 116 | | | | |
| Fluorobenzene | 996.2 | 0 | 1100 | 0 | 90.6% | 87 | 102 | | | | |

Sample ID: **0112021-02AMSD** Batch ID: **GC-1_011219** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/19/2001** Prep Date:

Client ID: **0112023** Run ID: **GC-1_011219A** SeqNo: **45952**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 793 | 5 | 400 | 400 | 98.3% | 70 | 130 | 779.8 | 1.7% | 6 | |
| Ethylbenzene | 532.5 | 5 | 400 | 160 | 93.1% | 70 | 130 | 534.6 | 0.4% | 7 | |
| m,p-Xylene | 1616 | 10 | 800 | 790 | 103.3% | 70 | 130 | 1629 | 0.8% | 6 | |
| o-Xylene | 488.5 | 5 | 400 | 95 | 98.4% | 70 | 130 | 485.2 | 0.7% | 5 | |
| Toluene | 401.6 | 5 | 400 | 30 | 92.9% | 70 | 130 | 410.1 | 2.1% | 6 | |
| 1,4-Difluorobenzene | 1005 | 0 | 1100 | 0 | 91.3% | 77 | 112 | 0 | 0.0% | 0 | |
| 4-Bromochlorobenzene | 1150 | 0 | 1100 | 0 | 104.5% | 88 | 116 | 0 | 0.0% | 0 | |
| Fluorobenzene | 1010 | 0 | 1100 | 0 | 91.8% | 87 | 102 | 0 | 0.0% | 0 | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *20-Dec-01*

**CLIENT:** Blagg Engineering
**Work Order:** 0112023
**Project:** XTO Energy; Abrams J #1

# QC SUMMARY REPORT

## Laboratory Control Spike - generic

Sample ID: **LCS_011219** Batch ID: **GC-1_011219** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/19/2001** Prep Date:

Client ID: **0112023** Run ID: **GC-1_011219A** SeqNo: **45949**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 37.24 | 0.5 | 40 | 0 | 93.1% | 80 | 120 | | | | |
| Ethylbenzene | 37.52 | 0.5 | 40 | 0 | 93.8% | 80 | 120 | | | | |
| m,p-Xylene | 77.72 | 1 | 80 | 0 | 97.2% | 80 | 120 | | | | |
| o-Xylene | 39.09 | 0.5 | 40 | 0 | 97.7% | 80 | 120 | | | | |
| Toluene | 37.35 | 0.5 | 40 | 0.2 | 92.9% | 80 | 120 | | | | |
| 1,4-Difluorobenzene | 100 | 0 | 110 | 0 | 90.9% | 77 | 112 | | | | |
| 4-Bromochlorobenzene | 114.1 | 0 | 110 | 0 | 103.8% | 88 | 116 | | | | |
| Fluorobenzene | 101 | 0 | 110 | 0 | 91.8% | 87 | 102 | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *20-Dec-01*

**CLIENT:** Blagg Engineering
**Work Order:** 0112023
**Project:** XTO Energy; Abrams J #1

# QC SUMMARY REPORT

## Continuing Calibration Verification Standard

Sample ID: **CCV1_011219** Batch ID: **GC-1_011219** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/19/2001** Prep Date:

Client ID: **0112023** Run ID: **GC-1_011219A** SeqNo: **45946**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 19.08 | 0.5 | 20 | 0 | 95.4% | 85 | 115 | | | | |
| Ethylbenzene | 19.61 | 0.5 | 20 | 0 | 98.1% | 85 | 115 | | | | |
| m,p-Xylene | 40.03 | 1 | 40 | 0 | 100.1% | 85 | 115 | | | | |
| o-Xylene | 20.34 | 0.5 | 20 | 0 | 101.7% | 85 | 115 | | | | |
| Toluene | 19.64 | 0.5 | 20 | 0 | 98.2% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 101.8 | 0 | 110 | 0 | 92.6% | 77 | 112 | | | | |
| 4-Bromochlorobenzene | 114.2 | 0 | 110 | 0 | 103.8% | 88 | 116 | | | | |
| Fluorobenzene | 101.4 | 0 | 110 | 0 | 92.2% | 87 | 102 | | | | |

Sample ID: **CCV2_011219** Batch ID: **GC-1_011219** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/19/2001** Prep Date:

Client ID: **0112023** Run ID: **GC-1_011219A** SeqNo: **45947**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 18.35 | 0.5 | 20 | 0 | 91.7% | 85 | 115 | | | | |
| Ethylbenzene | 17.96 | 0.5 | 20 | 0 | 89.8% | 85 | 115 | | | | |
| m,p-Xylene | 37.12 | 1 | 40 | 0 | 92.8% | 85 | 115 | | | | |
| o-Xylene | 19.3 | 0.5 | 20 | 0 | 96.5% | 85 | 115 | | | | |
| Toluene | 18.69 | 0.5 | 20 | 0 | 93.5% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 101.8 | 0 | 110 | 0 | 92.5% | 77 | 112 | | | | |
| 4-Bromochlorobenzene | 113 | 0 | 110 | 0 | 102.7% | 88 | 116 | | | | |
| Fluorobenzene | 101.9 | 0 | 110 | 0 | 92.7% | 87 | 102 | | | | |

**Qualifiers:** ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

**CLIENT:** Blagg Engineering
**Work Order:** 0112023
**Project:** XTO Energy; Abrams J #1

# QC SUMMARY REPORT

## Continuing Calibration Verification Standard

Sample ID: **CCV3_011219** Batch ID: **GC-1_011219** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/19/2001** Prep Date:

Client ID: **0112023** Run ID: **GC-1_011219A** SeqNo: **45948**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 19.27 | 0.5 | 20 | 0 | 96.4% | 85 | 115 | | | | |
| Ethylbenzene | 19.51 | 0.5 | 20 | 0 | 97.6% | 85 | 115 | | | | |
| m,p-Xylene | 40.07 | 1 | 40 | 0 | 100.2% | 85 | 115 | | | | |
| o-Xylene | 20.6 | 0.5 | 20 | 0 | 103.0% | 85 | 115 | | | | |
| Toluene | 19.94 | 0.5 | 20 | 0 | 99.7% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 102.1 | 0 | 110 | 0 | 92.8% | 77 | 112 | | | | |
| 4-Bromochlorobenzene | 114.2 | 0 | 110 | 0 | 103.8% | 88 | 116 | | | | |
| Fluorobenzene | 101.2 | 0 | 110 | 0 | 92.0% | 87 | 102 | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** 20-Dec-01

**CLIENT:** Blagg Engineering
**Work Order:** 0112023
**Project:** XTO Energy; Abrams J #1
**Test No:** SW8021B

# QC SUMMARY REPORT
# SURROGATE RECOVERIES

## Aromatic Volatiles by GC/PID

| Sample ID | 14FBZ | 4BCBZ | FLBZ |
|---|---|---|---|
| 0112021-01A | 91.4 | 104 | 91.3 |
| 0112021-02A | 92.3 | 107 | 92.6 |
| 0112021-02AMS | 89.2 | 106 | 90.6 |
| 0112021-02AMSD | 91.3 | 104 | 91.8 |
| 0112021-03A | 93.5 | 104 | 92.8 |
| 0112021-04A | 92.4 | 105 | 93.1 |
| 0112021-05A | 93.2 | 104 | 93 |
| 0112021-06A | 94.4 | 105 | 93.2 |
| 0112021-07A | 90.7 | 103 | 91.1 |
| 0112021-08A | 93.8 | 105 | 93.8 |
| 0112021-09A | 94.3 | 106 | 93.8 |
| 0112022-01A | 93.6 | 104 | 93.6 |
| 0112023-01A | 92.9 | 101 | 92.6 |
| 0112023-02A | 87 | 105 | 90.4 |
| 0112023-03A | 96.2 | 112 | 96.9 |
| 0112023-04A | 93 | 106 | 92.7 |
| CCV1_011219 | 92.6 | 104 | 92.2 |
| CCV2_011219 | 92.5 | 103 | 92.7 |
| CCV3_011219 | 92.8 | 104 | 92 |
| LCS_011219 | 90.9 | 104 | 91.8 |
| MB_011219 | 94.5 | 102 | 93.5 |

| Acronym | | Surrogate | QC Limits |
|---|---|---|---|
| 14FBZ | = | 1,4-Difluorobenzene | 77-112 |
| 4BCBZ | = | 4-Bromochlorobenzene | 88-116 |
| FLBZ | = | Fluorobenzene | 87-102 |

* Surrogate recovery outside acceptance limits

# BLAGG ENGINEERING, INC.

**MONITOR WELL SAMPLING DATA**

**CLIENT :** XTO ENERGY , INC.

**CHAIN-OF-CUSTODY # :** 11161

**ABRAMS J # 1**
**UNIT I, SEC. 29, T29N, R10W**

**LABORATORY (S) USED :** ON - SITE TECH.

*Date :* February 20, 2002

**SAMPLER :** N J V

*Filename :* 02-20-02.WK4

**PROJECT MANAGER :** N J V

| WELL # | WELL ELEV. (ft) | WATER ELEV. (ft) | DEPTH TO WATER (ft) | TOTAL DEPTH (ft) | SAMPLING TIME | pH | CONDUCT (umhos) | VOLUME PURGED (gal.) | FREE PRODUCT (ft) |
|---|---|---|---|---|---|---|---|---|---|
| 1R | | | 44.80 | 52.00 | 1115 | 7.16 | 1,000 | 3.50 | - |
| 3 | 95.83 | 51.50 | 44.33 | 50.00 | 1150 | 7.09 | 1,300 | 1.37 | - |
| 6 | 96.61 | 51.33 | 45.28 | 50.00 | 1200 | 6.89 | 900 | 2.25 | - |
| 7 | 95.62 | 51.53 | 44.09 | 50.00 | 1305 | 7.48 | 700 | 3.00 | - |
| 8R | 95.78 | 51.14 | 44.64 | 53.10 | 1340 | 7.32 | 2,400 | 4.25 | - |
| 10 | 97.28 | 51.81 | 45.47 | 50.00 | 1350 | 6.76 | 1,800 | 1.25 | - |

NOTES : Volume of water purged from well prior to sampling; V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores).

Ideally a minimum of three (3) wellbore volumes:

1.25 " well diameter = 0.19 gallons per foot of water ( or 24 oz. ).

2 bails per foot - small teflon bailer.

3 bails per foot - 3 / 4 " teflon bailer.

2.00 " well diameter = 0.49 gallons per foot of water.

4.00 " well diameter = 1.95 gallons per foot of water.

Comments or note well diameter if not standard 2",

Installed MW # 1R on 8 / 23 / 01 ( 10 ft. screen between 42 - 52 ft. interval ). Excellent recovery in MW # 1R , # 7 , & # 8R , fair in MW 's # 3 & # 6 , poor in # 10 . Collected BTEX in all MW 's listed above . BEI reclamation system not operational at time of sampling .

mw # 6 3.38'

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FAX: (505) 327-1496

# ANALYTICAL REPORT

**Date:** *07-Mar-02*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0202017 | **Client Sample ID:** | MW #1R |
| **Lab ID:** | 0202017-01A **Matrix:** AQUEOUS | **Collection Date:** | 02/20/2002 11:15:00 AM |
| **Project:** | XTO Energy-Abrams J #1 | **COC Record:** | 11167 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DDM** |
| Benzene | 1.4 | 0.5 | | µg/L | 1 | 02/27/2002 |
| Toluene | 1.2 | 0.5 | | µg/L | 1 | 02/27/2002 |
| Ethylbenzene | 57 | 0.5 | | µg/L | 1 | 02/27/2002 |
| m,p-Xylene | 420 | 5 | | µg/L | 5 | 02/28/2002 |
| o-Xylene | 32 | 0.5 | | µg/L | 1 | 02/27/2002 |

**Qualifiers:**

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate



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# ANALYTICAL REPORT

**Date:** *07-Mar-02*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0202017 | **Client Sample ID:** | MW #3 |
| **Lab ID:** | 0202017-02A **Matrix:** AQUEOUS | **Collection Date:** | 02/20/2002 11:50:00 AM |
| **Project:** | XTO Energy-Abrams J #1 | **COC Record:** | 11167 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DDM** |
| Benzene | 0.5 | 0.5 | | µg/L | 1 | 02/27/2002 |
| Toluene | ND | 0.5 | | µg/L | 1 | 02/27/2002 |
| Ethylbenzene | 3.8 | 0.5 | | µg/L | 1 | 02/27/2002 |
| m,p-Xylene | 72 | 1 | | µg/L | 1 | 02/27/2002 |
| o-Xylene | 18 | 0.5 | | µg/L | 1 | 02/27/2002 |

**Qualifiers:**

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
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Surr: - Surrogate



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# ANALYTICAL REPORT

**Date:** *07-Mar-02*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0202017 | **Client Sample ID:** | MW #6 |
| **Lab ID:** | 0202017-03A **Matrix:** AQUEOUS | **Collection Date:** | 02/20/2002 12:00:00 PM |
| **Project:** | XTO Energy-Abrams J #1 | **COC Record:** | 11167 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DDM** |
| Benzene | 1.1 | 0.5 | | µg/L | 1 | 02/27/2002 |
| Toluene | ND | 0.5 | | µg/L | 1 | 02/27/2002 |
| Ethylbenzene | 15 | 0.5 | | µg/L | 1 | 02/27/2002 |
| m,p-Xylene | 6.2 | 1 | | µg/L | 1 | 02/27/2002 |
| o-Xylene | 0.9 | 0.5 | | µg/L | 1 | 02/27/2002 |

**Qualifiers:**

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
SURR: - Surrogate



**P.O. BOX 2606 • FARMINGTON, NM 87499**
**EMAIL: ONSITE@ONSITELTD.COM**

OFF: (505) 325-5667
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ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556
FAX: (505) 327-1496

# ANALYTICAL REPORT

**Date:** *07-Mar-02*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0202017 | **Client Sample ID:** | MW #7 |
| **Lab ID:** | 0202017-04A **Matrix:** AQUEOUS | **Collection Date:** | 02/20/2002 1:05:00 PM |
| **Project:** | XTO Energy-Abrams J #1 | **COC Record:** | 11167 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DDM** |
| Benzene | ND | 0.5 | | µg/L | 1 | 02/28/2002 |
| Toluene | ND | 0.5 | | µg/L | 1 | 02/28/2002 |
| Ethylbenzene | ND | 0.5 | | µg/L | 1 | 02/28/2002 |
| m,p-Xylene | ND | 1 | | µg/L | 1 | 02/28/2002 |
| o-Xylene | ND | 0.5 | | µg/L | 1 | 02/28/2002 |

**Qualifiers:**

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
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LAB: (505) 325-1556
FAX: (505) 327-1496

# ANALYTICAL REPORT

**Date:** *07-Mar-02*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0202017 | **Client Sample ID:** | MW #8R |
| **Lab ID:** | 0202017-05A **Matrix:** AQUEOUS | **Collection Date:** | 02/20/2002 1:40:00 PM |
| **Project:** | XTO Energy-Abrams J #1 | **COC Record:** | 11167 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DDM** |
| Benzene | ND | 0.5 | | µg/L | 1 | 02/27/2002 |
| Toluene | ND | 0.5 | | µg/L | 1 | 02/27/2002 |
| Ethylbenzene | ND | 0.5 | | µg/L | 1 | 02/27/2002 |
| m,p-Xylene | ND | 1 | | µg/L | 1 | 02/27/2002 |
| o-Xylene | ND | 0.5 | | µg/L | 1 | 02/27/2002 |

**Qualifiers:**

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate



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LAB: (505) 325-1556
FAX: (505) 327-1496

# ANALYTICAL REPORT

**Date:** *07-Mar-02*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | Abrams J #1 |
| **Work Order:** | 0202017 | **Client Sample ID:** | MW #10 |
| **Lab ID:** | 0202017-06A **Matrix:** AQUEOUS | **Collection Date:** | 02/20/2002 1:50:00 PM |
| **Project:** | XTO Energy-Abrams J #1 | **COC Record:** | 11167 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DDM** |
| Benzene | ND | 0.5 | | µg/L | 1 | 02/27/2002 |
| Toluene | ND | 0.5 | | µg/L | 1 | 02/27/2002 |
| Ethylbenzene | 18 | 0.5 | | µg/L | 1 | 02/27/2002 |
| m,p-Xylene | 18 | 1 | | µg/L | 1 | 02/27/2002 |
| o-Xylene | 0.6 | 0.5 | | µg/L | 1 | 02/27/2002 |

**Qualifiers:**

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate



**P.O. BOX 2606 • FARMINGTON, NM 87499**
**EMAIL: ONSITE@ONSITELTD.COM**

# CHAIN OF CUSTODY RECORD

ON SITE TECHNOLOGIES, LTD.

612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 327-1496

Date: 3/28/

Page: 1 of 1

| | | | |
|---|---|---|---|
| Purchase Order No.: | Project No. | | |
| SEND INVOICE TO — Name | | REPORT RESULTS TO — Name | Title |
| Company | Dept. | Company | |
| Address | | Mailing Address | |
| City, State, Zip | | City, State, Zip | |
| | | Telephone No. | Telefax No. |

**PROJECT LOCATION:**

**SAMPLER'S SIGNATURE:**

| SAMPLE IDENTIFICATION | SAMPLE DATE | SAMPLE TIME | SAMPLE MATRIX | SAMPLE PRES. | Number of Containers | ANALYSIS REQUESTED | LAB ID |
|---|---|---|---|---|---|---|---|
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|---|---|---|---|
| Relinquished by: | Date/Time | Received by: | Date/Time |
| Relinquished by: | Date/Time | Received by: | Date/Time |
| Relinquished by: | Date/Time | Received by: | Date/Time |

Method of Shipment:

Rush | | 24-48 Hours | | 10 Working Days | | By Date |

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Special Instructions / Remarks:

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

On Site Technologies, LTD.

**Date:** *07-Mar-02*

**CLIENT:** Blagg Engineering
**Work Order:** 0202017
**Project:** XTO Energy-Abrams J #1

# QC SUMMARY REPORT

## Method Blank

Sample ID: **MB_020227** Batch ID: **GC-1_020227** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **02/27/2002** Prep Date:

Client ID: **0202017** Run ID: **GC-1_020227A** SeqNo: **48119**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | .1097 | 0.5 | | | | | | | | | J |
| Ethylbenzene | .1164 | 0.5 | | | | | | | | | J |
| m,p-Xylene | .1601 | 1 | | | | | | | | | J |
| Methyl tert-Butyl Ether | ND | 1 | | | | | | | | | |
| o-Xylene | ND | 0.5 | | | | | | | | | |
| Toluene | .2605 | 0.5 | | | | | | | | | J |
| 1,4-Difluorobenzene | 106.7 | 0 | | | | | | | | | |
| 4-Bromochlorobenzene | 120.8 | 0 | | | | | | | | | |
| Fluorobenzene | 108.2 | 0 | | | | | | | | | |

Sample ID: **MB_020228** Batch ID: **GC-1_020228** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **02/28/2002** Prep Date:

Client ID: **0202017** Run ID: **GC-1_020228A** SeqNo: **48190**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.5 | | | | | | | | | |
| Ethylbenzene | ND | 0.5 | | | | | | | | | |
| m,p-Xylene | ND | 1 | | | | | | | | | |
| Methyl tert-Butyl Ether | ND | 1 | | | | | | | | | |
| o-Xylene | ND | 0.5 | | | | | | | | | |
| Toluene | .1285 | 0.5 | | | | | | | | | J |
| 1,4-Difluorobenzene | 106.8 | 0 | | | | | | | | | |
| 4-Bromochlorobenzene | 118.9 | 0 | | | | | | | | | |
| Fluorobenzene | 108 | 0 | | | | | | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *07-Mar-02*

**CLIENT:** Blagg Engineering
**Work Order:** 0202017
**Project:** XTO Energy-Abrams J #1

# QC SUMMARY REPORT

## Sample Matrix Spike

Sample ID: **0202029-05AMS** Batch ID: **GC-1_020227** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **02/27/2002** Prep Date:
Client ID: **0202017** Run ID: **GC-1_020227A** SeqNo: **48120**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 376.1 | 5 | 400 | 1.114 | 93.7% | 70 | 130 | | | | |
| Ethylbenzene | 388.1 | 5 | 400 | 7.019 | 95.3% | 70 | 130 | | | | |
| m,p-Xylene | 798.9 | 10 | 800 | 35.75 | 95.4% | 70 | 130 | | | | |
| Methyl tert-Butyl Ether | 404.4 | 10 | 400 | 0 | 101.1% | 70 | 130 | | | | |
| o-Xylene | 394.2 | 5 | 400 | 17.62 | 94.2% | 70 | 130 | | | | |
| Toluene | 388.8 | 5 | 400 | 20.22 | 92.2% | 70 | 130 | | | | |
| 1,4-Difluorobenzene | 1050 | 0 | 1100 | 0 | 95.4% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 1178 | 0 | 1100 | 0 | 107.1% | 70 | 130 | | | | |
| Fluorobenzene | 1067 | 0 | 1100 | 0 | 97.0% | 70 | 130 | | | | |

Sample ID: **0202029-05AMSD** Batch ID: **GC-1_020227** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **02/27/2002** Prep Date:
Client ID: **0202017** Run ID: **GC-1_020227A** SeqNo: **48121**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 367.1 | 5 | 400 | 1.114 | 91.5% | 70 | 130 | 376.1 | 2.4% | 15 | |
| Ethylbenzene | 379.2 | 5 | 400 | 7.019 | 93.0% | 70 | 130 | 388.1 | 2.3% | 15 | |
| m,p-Xylene | 781.4 | 10 | 800 | 35.75 | 93.2% | 70 | 130 | 798.9 | 2.2% | 15 | |
| Methyl tert-Butyl Ether | 401.4 | 10 | 400 | 0 | 100.3% | 70 | 130 | 404.4 | 0.8% | 15 | |
| o-Xylene | 386.5 | 5 | 400 | 17.62 | 92.2% | 70 | 130 | 394.2 | 2.0% | 15 | |
| Toluene | 379.7 | 5 | 400 | 20.22 | 89.9% | 70 | 130 | 388.8 | 2.4% | 15 | |
| 1,4-Difluorobenzene | 1052 | 0 | 1100 | 0 | 95.6% | 70 | 130 | 0 | 0.0% | 0 | |
| 4-Bromochlorobenzene | 1178 | 0 | 1100 | 0 | 107.1% | 70 | 130 | 0 | 0.0% | 0 | |
| Fluorobenzene | 1066 | 0 | 1100 | 0 | 97.0% | 70 | 130 | 0 | 0.0% | 0 | |

**Qualifiers:** ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

**CLIENT:** Blagg Engineering
**Work Order:** 0202017
**Project:** XTO Energy-Abrams J #1

# QC SUMMARY REPORT
## Sample Matrix Spike

Sample ID: **0202029-15AMS** Batch ID: **GC-1_020228** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **02/28/2002** Prep Date:
Client ID: **0202017** Run ID: **GC-1_020228A** SeqNo: **48191**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 370.2 | 5 | 400 | 7.24 | 90.7% | 70 | 130 | | | | |
| Ethylbenzene | 380.2 | 5 | 400 | 6.438 | 93.4% | 70 | 130 | | | | |
| m,p-Xylene | 755.1 | 10 | 800 | 4.802 | 93.8% | 70 | 130 | | | | |
| Methyl tert-Butyl Ether | 418.8 | 10 | 400 | 0 | 104.7% | 70 | 130 | | | | |
| o-Xylene | 374.5 | 5 | 400 | 33.19 | 85.3% | 70 | 130 | | | | |
| Toluene | 367.3 | 5 | 400 | 2.798 | 91.1% | 70 | 130 | | | | |
| 1,4-Difluorobenzene | 1037 | 0 | 1100 | 0 | 94.3% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 1158 | 0 | 1100 | 0 | 105.3% | 70 | 130 | | | | |
| Fluorobenzene | 1053 | 0 | 1100 | 0 | 95.7% | 70 | 130 | | | | |

Sample ID: **0202029-15AMSD** Batch ID: **GC-1_020228** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **02/28/2002** Prep Date:
Client ID: **0202017** Run ID: **GC-1_020228A** SeqNo: **48192**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 362.1 | 5 | 400 | 7.24 | 88.7% | 70 | 130 | 370.2 | 2.2% | 15 | |
| Ethylbenzene | 371.8 | 5 | 400 | 6.438 | 91.3% | 70 | 130 | 380.2 | 2.2% | 15 | |
| m,p-Xylene | 739 | 10 | 800 | 4.802 | 91.8% | 70 | 130 | 755.1 | 2.1% | 15 | |
| Methyl tert-Butyl Ether | 414.6 | 10 | 400 | 0 | 103.7% | 70 | 130 | 418.8 | 1.0% | 15 | |
| o-Xylene | 367.1 | 5 | 400 | 33.19 | 83.5% | 70 | 130 | 374.5 | 2.0% | 15 | |
| Toluene | 357.9 | 5 | 400 | 2.798 | 88.8% | 70 | 130 | 367.3 | 2.6% | 15 | |
| 1,4-Difluorobenzene | 1034 | 0 | 1100 | 0 | 94.0% | 70 | 130 | 0 | 0.0% | 0 | |
| 4-Bromochlorobenzene | 1161 | 0 | 1100 | 0 | 105.5% | 70 | 130 | 0 | 0.0% | 0 | |
| Fluorobenzene | 1053 | 0 | 1100 | 0 | 95.8% | 70 | 130 | 0 | 0.0% | 0 | |

**Qualifiers:** ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *07-Mar-02*

**CLIENT:** Blagg Engineering
**Work Order:** 0202017
**Project:** XTO Energy-Abrams J #1

# QC SUMMARY REPORT

## Laboratory Control Spike - generic

Sample ID: **LCS_020227** Batch ID: **GC-1_020227** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **02/27/2002** Prep Date:

Client ID: **0202017** Run ID: **GC-1_020227A** SeqNo: **48118**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 38.3 | 0.5 | 40 | 0.1097 | 95.5% | 80 | 120 | | | | |
| Ethylbenzene | 39.34 | 0.5 | 40 | 0.1164 | 98.1% | 80 | 120 | | | | |
| m,p-Xylene | 78.72 | 1 | 80 | 0.1601 | 98.2% | 80 | 120 | | | | |
| Methyl tert-Butyl Ether | 40.62 | 1 | 40 | 0 | 101.6% | 80 | 120 | | | | |
| o-Xylene | 38.65 | 0.5 | 40 | 0 | 96.6% | 80 | 120 | | | | |
| Toluene | 37.77 | 0.5 | 40 | 0.2605 | 93.8% | 80 | 120 | | | | |
| 1,4-Difluorobenzene | 105.3 | 0 | 110 | 0 | 95.7% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 120.6 | 0 | 110 | 0 | 109.6% | 70 | 130 | | | | |
| Fluorobenzene | 107.2 | 0 | 110 | 0 | 97.5% | 70 | 130 | | | | |

Sample ID: **LCS_020228** Batch ID: **GC-1_020228** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **02/28/2002** Prep Date:

Client ID: **0202017** Run ID: **GC-1_020228A** SeqNo: **48189**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 37.26 | 0.5 | 40 | 0 | 93.1% | 80 | 120 | | | | |
| Ethylbenzene | 38.24 | 0.5 | 40 | 0 | 95.6% | 80 | 120 | | | | |
| m,p-Xylene | 76.52 | 1 | 80 | 0 | 95.6% | 80 | 120 | | | | |
| Methyl tert-Butyl Ether | 40.69 | 1 | 40 | 0 | 101.7% | 80 | 120 | | | | |
| o-Xylene | 37.7 | 0.5 | 40 | 0 | 94.2% | 80 | 120 | | | | |
| Toluene | 36.83 | 0.5 | 40 | 0.1285 | 91.8% | 80 | 120 | | | | |
| 1,4-Difluorobenzene | 105.6 | 0 | 110 | 0 | 96.0% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 120 | 0 | 110 | 0 | 109.1% | 70 | 130 | | | | |
| Fluorobenzene | 106.8 | 0 | 110 | 0 | 97.1% | 70 | 130 | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *07-Mar-02*

**CLIENT:** Blagg Engineering
**Work Order:** 0202017
**Project:** XTO Energy-Abrams J #1

# QC SUMMARY REPORT

## Continuing Calibration Verification Standard

Sample ID: **CCV1_020227** Batch ID: **GC-1_020227** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **02/27/2002** Prep Date:

Client ID: **0202017** Run ID: **GC-1_020227A** SeqNo: **48114**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 19.72 | 0.5 | 20 | 0 | 98.6% | 85 | 115 | | | | |
| Ethylbenzene | 20.11 | 0.5 | 20 | 0 | 100.6% | 85 | 115 | | | | |
| m,p-Xylene | 40.48 | 1 | 40 | 0 | 101.2% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 20.14 | 1 | 20 | 0 | 100.7% | 85 | 115 | | | | |
| o-Xylene | 19.62 | 0.5 | 20 | 0 | 98.1% | 85 | 115 | | | | |
| Toluene | 19.44 | 0.5 | 20 | 0 | 97.2% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 106.5 | 0 | 110 | 0 | 96.8% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 120.7 | 0 | 110 | 0 | 109.7% | 70 | 130 | | | | |
| Fluorobenzene | 107.8 | 0 | 110 | 0 | 98.0% | 70 | 130 | | | | |

Sample ID: **CCV2_020227** Batch ID: **GC-1_020227** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **02/27/2002** Prep Date:

Client ID: **0202017** Run ID: **GC-1_020227A** SeqNo: **48115**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 19.57 | 0.5 | 20 | 0 | 97.9% | 85 | 115 | | | | |
| Ethylbenzene | 19.72 | 0.5 | 20 | 0 | 98.6% | 85 | 115 | | | | |
| m,p-Xylene | 39.64 | 1 | 40 | 0 | 99.1% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 20.6 | 1 | 20 | 0 | 103.0% | 85 | 115 | | | | |
| o-Xylene | 19.34 | 0.5 | 20 | 0 | 96.7% | 85 | 115 | | | | |
| Toluene | 19.18 | 0.5 | 20 | 0 | 95.9% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 105.9 | 0 | 110 | 0 | 96.3% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 119.3 | 0 | 110 | 0 | 108.5% | 70 | 130 | | | | |
| Fluorobenzene | 107.4 | 0 | 110 | 0 | 97.6% | 70 | 130 | | | | |

**Qualifiers:** ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

**CLIENT:** Blagg Engineering
**Work Order:** 0202017
**Project:** XTO Energy-Abrams J #1

# QC SUMMARY REPORT
## Continuing Calibration Verification Standard

Sample ID: **CCV3_020227** Batch ID: **GC-1_020227** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **02/27/2002** Prep Date:
Client ID: **0202017** Run ID: **GC-1_020227A** SeqNo: **48116**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 37.68 | 0.5 | 40 | 0 | 94.2% | 85 | 115 | | | | |
| Ethylbenzene | 38.16 | 0.5 | 40 | 0 | 95.4% | 85 | 115 | | | | |
| m,p-Xylene | 76.15 | 1 | 80 | 0 | 95.2% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 40.35 | 1 | 40 | 0 | 100.9% | 85 | 115 | | | | |
| o-Xylene | 37.6 | 0.5 | 40 | 0 | 94.0% | 85 | 115 | | | | |
| Toluene | 37.02 | 0.5 | 40 | 0 | 92.6% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 105 | 0 | 110 | 0 | 95.4% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 117.2 | 0 | 110 | 0 | 106.6% | 70 | 130 | | | | |
| Fluorobenzene | 106.8 | 0 | 110 | 0 | 97.1% | 70 | 130 | | | | |

Sample ID: **CCV1_020228** Batch ID: **GC-1_020228** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **02/28/2002** Prep Date:
Client ID: **0202017** Run ID: **GC-1_020228A** SeqNo: **48186**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 19.54 | 0.5 | 20 | 0 | 97.7% | 85 | 115 | | | | |
| Ethylbenzene | 19.93 | 0.5 | 20 | 0 | 99.6% | 85 | 115 | | | | |
| m,p-Xylene | 40.09 | 1 | 40 | 0 | 100.2% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 20.61 | 1 | 20 | 0 | 103.0% | 85 | 115 | | | | |
| o-Xylene | 19.41 | 0.5 | 20 | 0 | 97.1% | 85 | 115 | | | | |
| Toluene | 19.23 | 0.5 | 20 | 0 | 96.2% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 105.9 | 0 | 110 | 0 | 96.3% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 119.1 | 0 | 110 | 0 | 108.2% | 70 | 130 | | | | |
| Fluorobenzene | 107.2 | 0 | 110 | 0 | 97.4% | 70 | 130 | | | | |

**Qualifiers:** ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

**CLIENT:** Blagg Engineering
**Work Order:** 0202017
**Project:** XTO Energy-Abrams J #1

# QC SUMMARY REPORT
## Continuing Calibration Verification Standard

Sample ID: **CCV2_020228** Batch ID: **GC-1_020228** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **02/28/2002** Prep Date:
Client ID: **0202017** Run ID: **GC-1_020228A** SeqNo: **48187**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 19.06 | 0.5 | 20 | 0 | 95.3% | 85 | 115 | | | | |
| Ethylbenzene | 20.36 | 0.5 | 20 | 0 | 101.8% | 85 | 115 | | | | |
| m,p-Xylene | 39.11 | 1 | 40 | 0 | 97.8% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 20.81 | 1 | 20 | 0 | 104.1% | 85 | 115 | | | | |
| o-Xylene | 19.26 | 0.5 | 20 | 0 | 96.3% | 85 | 115 | | | | |
| Toluene | 18.95 | 0.5 | 20 | 0 | 94.8% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 106.1 | 0 | 110 | 0 | 96.4% | 70 | 130 | | | | |
| 4-Bromochiorobenzene | 120 | 0 | 110 | 0 | 109.1% | 70 | 130 | | | | |
| Fluorobenzene | 106.9 | 0 | 110 | 0 | 97.1% | 70 | 130 | | | | |

Sample ID: **CCV3_020228** Batch ID: **GC-1_020228** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **02/28/2002** Prep Date:
Client ID: **0202017** Run ID: **GC-1_020228A** SeqNo: **48188**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 37.71 | 0.5 | 40 | 0 | 94.3% | 85 | 115 | | | | |
| Ethylbenzene | 39.72 | 0.5 | 40 | 0 | 99.3% | 85 | 115 | | | | |
| m,p-Xylene | 77.46 | 1 | 80 | 0 | 96.8% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 41.48 | 1 | 40 | 0 | 103.7% | 85 | 115 | | | | |
| o-Xylene | 38.45 | 0.5 | 40 | 0 | 96.1% | 85 | 115 | | | | |
| Toluene | 37.51 | 0.5 | 40 | 0 | 93.8% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 105.8 | 0 | 110 | 0 | 96.1% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 123 | 0 | 110 | 0 | 111.8% | 70 | 130 | | | | |
| Fluorobenzene | 106.3 | 0 | 110 | 0 | 96.6% | 70 | 130 | | | | |

**Qualifiers:** ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** 07-Mar-02

**CLIENT:** Blagg Engineering
**Work Order:** 0202017
**Project:** XTO Energy-Abrams J #1
**Test No:** SW8021B

# QC SUMMARY REPORT
# SURROGATE RECOVERIES

## Aromatic Volatiles by GC/PID

| Sample ID | 14FBZ | 4BCBZ | FLBZ |
|---|---|---|---|
| 0202016-01A | 95.6 | 107 | 97.8 |
| 0202017-01A | 96.4 | 108 | 97.7 |
| 0202017-02A | 93.8 | 107 | 96.1 |
| 0202017-03A | 94.1 | 106 | 95.7 |
| 0202017-04A | 96.6 | 109 | 98.8 |
| 0202017-05A | 96.4 | 113 | 98.3 |
| 0202017-06A | 95.3 | 110 | 97 |
| 0202018-01A | 97.1 | 110 | 98.9 |
| 0202029-01A | 96.4 | 110 | 98.9 |
| 0202029-02A | 97.1 | 109 | 98.8 |
| 0202029-03A | 96.5 | 105 | 98.6 |
| 0202029-04A | 96.5 | 108 | 99 |
| 0202029-05A | 96.9 | 108 | 98.6 |
| 0202029-05AMS | 95.4 | 107 | 97 |
| 0202029-05AMSD | 95.6 | 107 | 97 |
| 0202029-06A | 96.8 | 108 | 99.5 |
| 0202029-07A | 97.5 | 108 | 98.7 |
| 0202029-08A | 96.5 | 109 | 98.7 |
| 0202029-09A | 96.8 | 109 | 98.9 |
| 0202029-10A | 96.6 | 108 | 98.3 |
| 0202029-11A | 95.4 | 107 | 97.6 |
| 0202029-12A | 96.2 | 107 | 98.5 |
| 0202029-13A | 95.9 | 109 | 98.2 |
| 0202029-14A | 98.2 | 108 | 97.7 |
| 0202029-15AMS | 94.3 | 105 | 95.7 |
| 0202029-15AMSD | 94 | 106 | 95.8 |
| 0202029-17A | 94.2 | 112 | 97.8 |

| Acronym | | Surrogate | QC Limits |
|---|---|---|---|
| 14FBZ | = | 1,4-Difluorobenzene | 70-130 |
| 4BCBZ | = | 4-Bromochlorobenzene | 70-130 |
| FLBZ | = | Fluorobenzene | 70-130 |

*** Surrogate recovery outside acceptance limits**

| | |
|---|---|
| **CLIENT:** | Blagg Engineering |
| **Work Order:** | 0202017 |
| **Project:** | XTO Energy-Abrams J #1 |
| **Test No:** | SW8021B |

# QC SUMMARY REPORT
# SURROGATE RECOVERIES

## Aromatic Volatiles by GC/PID

| Sample ID | 14FBZ | 4BCBZ | FLBZ |
|---|---|---|---|
| 0202029-18A | 97 | 108 | 103 |
| 0202029-19A | 100 | 110 | 110 |
| 0202029-20A | 97.4 | 112 | 96.7 |
| 0202029-21A | 97.9 | 103 | 97.5 |
| 0202029-22A | 96.4 | 121 | 101 |
| 0202029-23A | 102 | 111 | 88.4 |
| 0202029-24A | 109 | 104 | 114 |
| 0202029-25A | 102 | 110 | 105 |
| 0202029-27A | 95.3 | 104 | 97.9 |
| 0202029-28A | 95 | 111 | 96.5 |
| 0202029-29A | 92.7 | 108 | 97.7 |
| CCV1_020227 | 96.8 | 110 | 98 |
| CCV1_020228 | 96.3 | 108 | 97.4 |
| CCV2_020227 | 96.2 | 108 | 97.6 |
| CCV2_020228 | 96.4 | 109 | 97.1 |
| CCV3_020227 | 95.4 | 106 | 97.1 |
| CCV3_020228 | 96.1 | 112 | 96.6 |
| LCS_020227 | 95.7 | 110 | 97.5 |
| LCS_020228 | 96 | 109 | 97 |
| MB_020227 | 97 | 110 | 98.4 |
| MB_020228 | 97 | 108 | 98.2 |

| Acronym | | Surrogate | QC Limits |
|---|---|---|---|
| 14FBZ | = | 1,4-Difluorobenzene | 70-130 |
| 4BCBZ | = | 4-Bromochlorobenzene | 70-130 |
| FLBZ | = | Fluorobenzene | 70-130 |

*** Surrogate recovery outside acceptance limits**

# BLAGG ENGINEERING, INC.

## MONITOR WELL SAMPLING DATA

**CLIENT :** XTO ENERGY , INC.

**CHAIN-OF-CUSTODY # :** 11785

**ABRAMS J # 1**
**UNIT I, SEC. 29, T29N, R10W**

**LABORATORY (S) USED :** ON - SITE TECH.

*Date :* June 26, 2002

**SAMPLER :** N J V

*Filename :* 06-26-02.WK4

**PROJECT MANAGER :** N J V

| WELL # | WELL ELEV. (ft) | WATER ELEV. (ft) | DEPTH TO WATER (ft) | TOTAL DEPTH (ft) | SAMPLING TIME | pH | CONDUCT (umhos) | VOLUME PURGED (gal.) | FREE PRODUCT (ft) |
|---|---|---|---|---|---|---|---|---|---|
| 1R | | | 46.42 | 52.00 | 0930 | 7.39 | 1,000 | 2.75 | - |
| 3 | 95.83 | 49.88 | 45.95 | 50.00 | - | - | - | - | - |
| 7 | 95.62 | 49.84 | 45.78 | 50.00 | - | - | - | - | - |
| 8R | 95.78 | 49.50 | 46.28 | 53.10 | - | - | - | - | - |

NOTES : Volume of water purged from well prior to sampling: V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores).

Ideally a minimum of three (3) wellbore volumes:

1.25 " well diameter = 0.19 gallons per foot of water ( or 24 oz. ).

2 bails per foot - small teflon bailer.

3 bails per foot - 3 / 4 " teflon bailer.

2.00 " well diameter = 0.49 gallons per foot of water.

4.00 " well diameter = 1.95 gallons per foot of water.

Comments or note well diameter if not standard 2 ".

Installed MW # 1R on 8 / 23 / 01 ( 10 ft. screen between 42 - 52 ft. interval ). Excellent recovery in MW # 1R . Collected BTEX sample from MW # 1R only . BEI reclamation system operational at time of sampling .

OFF: (505) 325-5667
FAX: (505) 327-1496

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556
FAX: (505) 327-1496

# ANALYTICAL REPORT

**Date:** *10-Jul-02*

| | | | |
|---|---|---|---|
| **Client:** | Blagg Engineering | **Client Sample Info:** | XTO - Abrams J #1 |
| **Work Order:** | 0206051 | **Client Sample ID:** | MW #1R |
| **Lab ID:** | 0206051-01A **Matrix:** AQUEOUS | **Collection Date:** | 06/26/2002 9:30:00 AM |
| **Project:** | XTO - Abrams J #1 | **COC Record:** | 11785 |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **DWC** |
| Benzene | ND | 0.5 | | µg/L | 1 | 06/28/2002 |
| Toluene | ND | 0.5 | | µg/L | 1 | 06/28/2002 |
| Ethylbenzene | ND | 0.5 | | µg/L | 1 | 06/28/2002 |
| m,p-Xylene | ND | 1 | | µg/L | 1 | 06/28/2002 |
| o-Xylene | ND | 0.5 | | µg/L | 1 | 06/28/2002 |

**Qualifiers:**

- PQL - Practical Quantitation Limit
- ND - Not Detected at Practical Quantitation Limit
- J - Analyte detected below Practical Quantitation Limit
- B - Analyte detected in the associated Method Blank
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted precision limits
- E - Value above quantitation range
- Surr: - Surrogate



**P.O. BOX 2606 • FARMINGTON, NM 87499**
**EMAIL: ONSITE@ONSITELTD.COM**

1785

# CHAIN OF CUSTODY RECORD

ON SITE TECHNOLOGIES, LTD.

612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 327-1496

Date: 6/24/92

Page: 1 of 1

| | | | |
|---|---|---|---|
| Purchase Order No.: | Project No. | | |
| SEND INVOICE TO — Name | JEFF RUSSELL | REPORT RESULTS TO — Name | NELSON VELEZ — Title |
| Company | RUSSELL ENGINEERING, INC. — Dept. | Company | TAMS |
| Address | | Mailing Address | |
| City, State, Zip | | City, State, Zip | |
| | | Telephone No. | 632-1199 — Telefax No. 632-2503 |

**PROJECT LOCATION:** XTO - NAVAJO TRAIL

**SAMPLER'S SIGNATURE:** [signature]

| SAMPLE IDENTIFICATION | SAMPLE DATE | SAMPLE TIME | SAMPLE MATRIX | SAMPLE PRES. | Number of Containers | ANALYSIS REQUESTED | LAB ID |
|---|---|---|---|---|---|---|---|
| MW #2 | 6/23 | 0900 | WATER | ICE | 2 | ✓ | 206-51-01A |
| | | | | | | | |
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| | | | |
|---|---|---|---|
| Relinquished by: [signature] | Date/Time 6/24 1015 | Received by: | Date/Time |
| Relinquished by: | Date/Time | Received by: | Date/Time |
| Relinquished by: | Date/Time | Received by: | Date/Time |

Method of Shipment:

Rush ☐ 24-48 Hours ☐ 10 Working Days ☐ By Date ☐

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Special Instructions / Remarks:

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

On Site Technologies, LTD.

**Date:** *10-Jul-02*

**CLIENT:** Blagg Engineering
**Work Order:** 0206051
**Project:** XTO - Abrams J #1

# QC SUMMARY REPORT
## Method Blank

Sample ID: **MB_020627** Batch ID: **GC-1_020627** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **06/27/2002** Prep Date: **06/27/2002**
Client ID: **0206051** Run ID: **GC-1_020627A** SeqNo: **52887**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.5 | | | | | | | | | |
| Ethylbenzene | ND | 0.5 | | | | | | | | | |
| m,p-Xylene | ND | 1 | | | | | | | | | |
| Methyl tert-Butyl Ether | ND | 1 | | | | | | | | | |
| o-Xylene | ND | 0.5 | | | | | | | | | |
| Toluene | .1054 | 0.5 | | | | | | | | | J |
| 1,4-Difluorobenzene | 107.6 | 0 | | | | | | | | | |
| 4-Bromochlorobenzene | 118.6 | 0 | | | | | | | | | |
| Fluorobenzene | 109.7 | 0 | | | | | | | | | |

Sample ID: **MB_020628** Batch ID: **GC-1_020628** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **06/28/2002** Prep Date: **06/28/2002**
Client ID: **0206051** Run ID: **GC-1_020628A** SeqNo: **52913**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.5 | | | | | | | | | |
| Ethylbenzene | ND | 0.5 | | | | | | | | | |
| m,p-Xylene | ND | 1 | | | | | | | | | |
| Methyl tert-Butyl Ether | ND | 1 | | | | | | | | | |
| o-Xylene | ND | 0.5 | | | | | | | | | |
| Toluene | .1684 | 0.5 | | | | | | | | | J |
| 1,4-Difluorobenzene | 109 | 0 | | | | | | | | | |
| 4-Bromochlorobenzene | 121.8 | 0 | | | | | | | | | |
| Fluorobenzene | 112.8 | 0 | | | | | | | | | |

**Qualifiers:** ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *10-Jul-02*

**CLIENT:** Blagg Engineering
**Work Order:** 0206051
**Project:** XTO - Abrams J #1

# QC SUMMARY REPORT
## Sample Matrix Spike

Sample ID: **0206041-01AMS** Batch ID: **GC-1_020627** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **06/27/2002** Prep Date: **06/27/2002**
Client ID: **0206051** Run ID: **GC-1_020627A** SeqNo: **52888**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 1171 | 5 | 400 | 769.1 | 100.6% | 70 | 130 | | | | |
| Ethylbenzene | 763.9 | 5 | 400 | 352.2 | 102.9% | 70 | 130 | | | | |
| m,p-Xylene | 1554 | 10 | 800 | 774.5 | 97.4% | 70 | 130 | | | | |
| Methyl tert-Butyl Ether | 601.3 | 10 | 400 | 205 | 99.1% | 70 | 130 | | | | |
| o-Xylene | 474.6 | 5 | 400 | 88.25 | 96.6% | 70 | 130 | | | | |
| Toluene | 597.6 | 5 | 400 | 204.9 | 98.2% | 70 | 130 | | | | |
| 1,4-Difluorobenzene | 1065 | 0 | 1100 | 0 | 96.8% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 1210 | 0 | 1100 | 0 | 110.0% | 70 | 130 | | | | |
| Fluorobenzene | 1087 | 0 | 1100 | 0 | 98.8% | 70 | 130 | | | | |

Sample ID: **0206041-01AMSD** Batch ID: **GC-1_020627** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **06/27/2002** Prep Date: **06/27/2002**
Client ID: **0206051** Run ID: **GC-1_020627A** SeqNo: **52889**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 1127 | 5 | 400 | 769.1 | 89.6% | 70 | 130 | 1171 | 3.8% | 15 | |
| Ethylbenzene | 735.7 | 5 | 400 | 352.2 | 95.9% | 70 | 130 | 763.9 | 3.8% | 15 | |
| m,p-Xylene | 1498 | 10 | 800 | 774.5 | 90.5% | 70 | 130 | 1554 | 3.6% | 15 | |
| Methyl tert-Butyl Ether | 591.9 | 10 | 400 | 205 | 96.7% | 70 | 130 | 601.3 | 1.6% | 15 | |
| o-Xylene | 460.1 | 5 | 400 | 88.25 | 93.0% | 70 | 130 | 474.6 | 3.1% | 15 | |
| Toluene | 574.8 | 5 | 400 | 204.9 | 92.5% | 70 | 130 | 597.6 | 3.9% | 15 | |
| 1,4-Difluorobenzene | 1054 | 0 | 1100 | 0 | 95.9% | 70 | 130 | 0 | 0.0% | 0 | |
| 4-Bromochlorobenzene | 1208 | 0 | 1100 | 0 | 109.8% | 70 | 130 | 0 | 0.0% | 0 | |
| Fluorobenzene | 1084 | 0 | 1100 | 0 | 98.5% | 70 | 130 | 0 | 0.0% | 0 | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

**CLIENT:** Blagg Engineering
**Work Order:** 0206051
**Project:** XTO - Abrams J #1

# QC SUMMARY REPORT
## Sample Matrix Spike

Sample ID: **0206039-02AMS** Batch ID: **GC-1_020628** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **06/28/2002** Prep Date: **06/28/2002**
Client ID: **0206051** Run ID: **GC-1_020628A** SeqNo: **52914**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 512.8 | 2.5 | 200 | 312.6 | 100.1% | 70 | 130 | | | | |
| Ethylbenzene | 483.4 | 2.5 | 200 | 295.9 | 93.8% | 70 | 130 | | | | |
| m,p-Xylene | 897.1 | 5 | 400 | 517.3 | 94.9% | 70 | 130 | | | | |
| Methyl tert-Butyl Ether | 202.2 | 5 | 200 | 0 | 101.1% | 70 | 130 | | | | |
| o-Xylene | 221.4 | 2.5 | 200 | 30.64 | 95.4% | 70 | 130 | | | | |
| Toluene | 212.8 | 2.5 | 200 | 0.7775 | 106.0% | 70 | 130 | | | | |
| 1,4-Difluorobenzene | 538.8 | 0 | 550 | 0 | 98.0% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 614 | 0 | 550 | 0 | 111.6% | 70 | 130 | | | | |
| Fluorobenzene | 553.7 | 0 | 550 | 0 | 100.7% | 70 | 130 | | | | |

Sample ID: **0206039-02AMSD** Batch ID: **GC-1_020628** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **06/28/2002** Prep Date: **06/28/2002**
Client ID: **0206051** Run ID: **GC-1_020628A** SeqNo: **52915**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 495.9 | 2.5 | 200 | 312.6 | 91.6% | 70 | 130 | 512.8 | 3.3% | 15 | |
| Ethylbenzene | 466.3 | 2.5 | 200 | 295.9 | 85.2% | 70 | 130 | 483.4 | 3.6% | 15 | |
| m,p-Xylene | 866.1 | 5 | 400 | 517.3 | 87.2% | 70 | 130 | 897.1 | 3.5% | 15 | |
| Methyl tert-Butyl Ether | 197.8 | 5 | 200 | 0 | 98.9% | 70 | 130 | 202.2 | 2.2% | 15 | |
| o-Xylene | 216.8 | 2.5 | 200 | 30.64 | 93.1% | 70 | 130 | 221.4 | 2.1% | 15 | |
| Toluene | 206.5 | 2.5 | 200 | 0.7775 | 102.9% | 70 | 130 | 212.8 | 3.0% | 15 | |
| 1,4-Difluorobenzene | 529.2 | 0 | 550 | 0 | 96.2% | 70 | 130 | 0 | 0.0% | 0 | |
| 4-Bromochlorobenzene | 603 | 0 | 550 | 0 | 109.6% | 70 | 130 | 0 | 0.0% | 0 | |
| Fluorobenzene | 545.4 | 0 | 550 | 0 | 99.2% | 70 | 130 | 0 | 0.0% | 0 | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *10-Jul-02*

**CLIENT:** Blagg Engineering
**Work Order:** 0206051
**Project:** XTO - Abrams J #1

# QC SUMMARY REPORT

## Laboratory Control Spike - generic

Sample ID: **LCS_020627** Batch ID: **GC-1_020627** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **06/27/2002** Prep Date: **06/27/2002**

Client ID: **0206051** Run ID: **GC-1_020627A** SeqNo: **52886**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 38.85 | 0.5 | 40 | 0 | 97.1% | 80 | 120 | | | | |
| Ethylbenzene | 39.46 | 0.5 | 40 | 0 | 98.7% | 80 | 120 | | | | |
| m,p-Xylene | 78.4 | 1 | 80 | 0 | 98.0% | 80 | 120 | | | | |
| Methyl tert-Butyl Ether | 39.58 | 1 | 40 | 0 | 99.0% | 80 | 120 | | | | |
| o-Xylene | 38.05 | 0.5 | 40 | 0 | 95.1% | 80 | 120 | | | | |
| Toluene | 37.88 | 0.5 | 40 | 0.1054 | 94.4% | 80 | 120 | | | | |
| 1,4-Difluorobenzene | 106.6 | 0 | 110 | 0 | 97.0% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 120.1 | 0 | 110 | 0 | 109.2% | 70 | 130 | | | | |
| Fluorobenzene | 108.9 | 0 | 110 | 0 | 99.0% | 70 | 130 | | | | |

Sample ID: **LCS_020628** Batch ID: **GC-1_020628** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **06/28/2002** Prep Date: **06/28/2002**

Client ID: **0206051** Run ID: **GC-1_020628A** SeqNo: **52912**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 39.44 | 0.5 | 40 | 0 | 98.6% | 80 | 120 | | | | |
| Ethylbenzene | 39.99 | 0.5 | 40 | 0 | 100.0% | 80 | 120 | | | | |
| m,p-Xylene | 79.19 | 1 | 80 | 0 | 99.0% | 80 | 120 | | | | |
| Methyl tert-Butyl Ether | 38.46 | 1 | 40 | 0 | 96.1% | 80 | 120 | | | | |
| o-Xylene | 38.22 | 0.5 | 40 | 0 | 95.6% | 80 | 120 | | | | |
| Toluene | 38.31 | 0.5 | 40 | 0.1684 | 95.4% | 80 | 120 | | | | |
| 1,4-Difluorobenzene | 108.3 | 0 | 110 | 0 | 98.4% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 122 | 0 | 110 | 0 | 110.9% | 70 | 130 | | | | |
| Fluorobenzene | 111.3 | 0 | 110 | 0 | 101.2% | 70 | 130 | | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** *10-Jul-02*

**CLIENT:** Blagg Engineering
**Work Order:** 0206051
**Project:** XTO - Abrams J #1

# QC SUMMARY REPORT

## Continuing Calibration Verification Standard

Sample ID: **CCV1_020627** Batch ID: **GC-1_020627** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **06/27/2002** Prep Date: **06/27/2002**
Client ID: **0206051** Run ID: **GC-1_020627A** SeqNo: **52883**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 20.08 | 0.5 | 20 | 0 | 100.4% | 85 | 115 | | | | |
| Ethylbenzene | 20.33 | 0.5 | 20 | 0 | 101.6% | 85 | 115 | | | | |
| m,p-Xylene | 40.7 | 1 | 40 | 0 | 101.7% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 19.9 | 1 | 20 | 0 | 99.5% | 85 | 115 | | | | |
| o-Xylene | 19.56 | 0.5 | 20 | 0 | 97.8% | 85 | 115 | | | | |
| Toluene | 19.51 | 0.5 | 20 | 0 | 97.5% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 106.7 | 0 | 110 | 0 | 97.0% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 117.7 | 0 | 110 | 0 | 107.0% | 70 | 130 | | | | |
| Fluorobenzene | 109.6 | 0 | 110 | 0 | 99.6% | 70 | 130 | | | | |

Sample ID: **CCV2_020627** Batch ID: **GC-1_020627** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **06/27/2002** Prep Date: **06/27/2002**
Client ID: **0206051** Run ID: **GC-1_020627A** SeqNo: **52884**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 19.17 | 0.5 | 20 | 0 | 95.9% | 85 | 115 | | | | |
| Ethylbenzene | 19.37 | 0.5 | 20 | 0 | 96.9% | 85 | 115 | | | | |
| m,p-Xylene | 38.18 | 1 | 40 | 0 | 95.4% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 18.95 | 1 | 20 | 0 | 94.7% | 85 | 115 | | | | |
| o-Xylene | 18.69 | 0.5 | 20 | 0 | 93.5% | 85 | 115 | | | | |
| Toluene | 18.54 | 0.5 | 20 | 0 | 92.7% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 109.1 | 0 | 110 | 0 | 99.2% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 123.6 | 0 | 110 | 0 | 112.4% | 70 | 130 | | | | |
| Fluorobenzene | 111.7 | 0 | 110 | 0 | 101.6% | 70 | 130 | | | | |

**Qualifiers:** ND - Not Detected at the Reporting Limit; J - Analyte detected below quantitation limits; S - Spike Recovery outside accepted recovery limits; R - RPD outside accepted recovery limits; B - Analyte detected in the associated Method Blank

**CLIENT:** Blagg Engineering
**Work Order:** 0206051
**Project:** XTO - Abrams J #1

# QC SUMMARY REPORT
## Continuing Calibration Verification Standard

Sample ID: **CCV3_020627** Batch ID: **GC-1_020627** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **06/27/2002** Prep Date: **06/27/2002**
Client ID: **0206051** Run ID: **GC-1_020627A** SeqNo: **52885**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 38.74 | 0.5 | 40 | 0 | 96.8% | 85 | 115 | | | | |
| Ethylbenzene | 38.89 | 0.5 | 40 | 0 | 97.2% | 85 | 115 | | | | |
| m,p-Xylene | 76.38 | 1 | 80 | 0 | 95.5% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 38.49 | 1 | 40 | 0 | 96.2% | 85 | 115 | | | | |
| o-Xylene | 37.42 | 0.5 | 40 | 0 | 93.5% | 85 | 115 | | | | |
| Toluene | 37.56 | 0.5 | 40 | 0 | 93.9% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 107.9 | 0 | 110 | 0 | 98.1% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 119.1 | 0 | 110 | 0 | 108.3% | 70 | 130 | | | | |
| Fluorobenzene | 111.5 | 0 | 110 | 0 | 101.4% | 70 | 130 | | | | |

Sample ID: **CCV1_020628** Batch ID: **GC-1_020628** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **06/28/2002** Prep Date: **06/28/2002**
Client ID: **0206051** Run ID: **GC-1_020628A** SeqNo: **52911**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 20.37 | 0.5 | 20 | 0 | 101.9% | 85 | 115 | | | | |
| Ethylbenzene | 20.56 | 0.5 | 20 | 0 | 102.8% | 85 | 115 | | | | |
| m,p-Xylene | 40.47 | 1 | 40 | 0 | 101.2% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 19.98 | 1 | 20 | 0 | 99.9% | 85 | 115 | | | | |
| o-Xylene | 19.67 | 0.5 | 20 | 0 | 98.4% | 85 | 115 | | | | |
| Toluene | 19.69 | 0.5 | 20 | 0 | 98.5% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 108.4 | 0 | 110 | 0 | 98.5% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 121.5 | 0 | 110 | 0 | 110.4% | 70 | 130 | | | | |
| Fluorobenzene | 111.6 | 0 | 110 | 0 | 101.5% | 70 | 130 | | | | |

**Qualifiers:** ND - Not Detected at the Reporting Limit; J - Analyte detected below quantitation limits; S - Spike Recovery outside accepted recovery limits; R - RPD outside accepted recovery limits; B - Analyte detected in the associated Method Blank

**CLIENT:** Blagg Engineering
**Work Order:** 0206051
***Project:*** *XTO - Abrams J #1*

# QC SUMMARY REPORT

## Continuing Calibration Verification Standard

Sample ID: **CCV2_020628** Batch ID: **GC-1_020628** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **06/28/2002** Prep Date: **06/28/2002**
Client ID: **0206051** Run ID: **GC-1_020628A** SeqNo: **52909**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 20.06 | 0.5 | 20 | 0 | 100.3% | 85 | 115 | | | | |
| Ethylbenzene | 20.13 | 0.5 | 20 | 0 | 100.6% | 85 | 115 | | | | |
| m,p-Xylene | 39.24 | 1 | 40 | 0 | 98.1% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 20.31 | 1 | 20 | 0 | 101.5% | 85 | 115 | | | | |
| o-Xylene | 19.37 | 0.5 | 20 | 0 | 96.8% | 85 | 115 | | | | |
| Toluene | 19.38 | 0.5 | 20 | 0 | 96.9% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 108.7 | 0 | 110 | 0 | 98.8% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 118.9 | 0 | 110 | 0 | 108.1% | 70 | 130 | | | | |
| Fluorobenzene | 111.8 | 0 | 110 | 0 | 101.7% | 70 | 130 | | | | |

Sample ID: **CCV3_020628** Batch ID: **GC-1_020628** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **06/28/2002** Prep Date: **06/28/2002**
Client ID: **0206051** Run ID: **GC-1_020628A** SeqNo: **52910**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 38.19 | 0.5 | 40 | 0 | 95.5% | 85 | 115 | | | | |
| Ethylbenzene | 38.83 | 0.5 | 40 | 0 | 97.1% | 85 | 115 | | | | |
| m,p-Xylene | 75.68 | 1 | 80 | 0 | 94.6% | 85 | 115 | | | | |
| Methyl tert-Butyl Ether | 38.62 | 1 | 40 | 0 | 96.5% | 85 | 115 | | | | |
| o-Xylene | 37.34 | 0.5 | 40 | 0 | 93.4% | 85 | 115 | | | | |
| Toluene | 37.3 | 0.5 | 40 | 0 | 93.2% | 85 | 115 | | | | |
| 1,4-Difluorobenzene | 108.5 | 0 | 110 | 0 | 98.6% | 70 | 130 | | | | |
| 4-Bromochlorobenzene | 116.4 | 0 | 110 | 0 | 105.8% | 70 | 130 | | | | |
| Fluorobenzene | 112.3 | 0 | 110 | 0 | 102.1% | 70 | 130 | | | | |

**Qualifiers:** ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

**Date:** 10-Jul-02

**CLIENT:** Blagg Engineering
**Work Order:** 0206051
**Project:** XTO - Abrams J #1
**Test No:** SW8021B

# QC SUMMARY REPORT
# SURROGATE RECOVERIES

## Aromatic Volatiles by GC/PID

| Sample ID | 14FBZ | 4BCBZ | FLBZ |
|---|---|---|---|
| 0206028-01A | 88 | 100 | 105 |
| 0206029-01A | 99.2 | 109 | 102 |
| 0206030-01A | 90.1 | 103 | 102 |
| 0206030-02A | 99.4 | 111 | 102 |
| 0206030-03A | 96.5 | 111 | 100 |
| 0206031-01A | 99.4 | 110 | 102 |
| 0206031-02A | 98.4 | 110 | 102 |
| 0206031-03A | 98.2 | 111 | 101 |
| 0206031-04A | 92.1 | 107 | 95.5 |
| 0206039-01A | 91.8 | 112 | 95.2 |
| 0206039-02A | 96.5 | 108 | 99.6 |
| 0206039-02AMS | 98 | 112 | 101 |
| 0206039-02AMSD | 96.2 | 110 | 99.2 |
| 0206041-01A | 96.6 | 110 | 99 |
| 0206041-01AMS | 96.8 | 110 | 98.8 |
| 0206041-01AMSD | 95.8 | 110 | 98.5 |
| 0206041-02A | 98.1 | 112 | 101 |
| 0206048-01A | 97.7 | 109 | 101 |
| 0206049-01A | 97.6 | 106 | 100 |
| 0206049-02A | 95.9 | 107 | 99.7 |
| 0206050-01A | 95.5 | 109 | 98.7 |
| 0206050-02A | 99.5 | 113 | 102 |
| 0206051-01A | 99.2 | 111 | 102 |
| 0206052-01A | 96.3 | 106 | 100 |
| 0206054-02A | 101 | 100 | 96.8 |
| 0206054-03A | 95.5 | 109 | 98.3 |
| 0206054-04A | 95.4 | 109 | 98.2 |

| Acronym | | Surrogate | QC Limits |
|---|---|---|---|
| 14FBZ | = | 1,4-Difluorobenzene | 70-130 |
| 4BCBZ | = | 4-Bromochlorobenzene | 70-130 |
| FLBZ | = | Fluorobenzene | 70-130 |

*** Surrogate recovery outside acceptance limits**

| | |
|---|---|
| **CLIENT:** | Blagg Engineering |
| **Work Order:** | 0206051 |
| **Project:** | XTO - Abrams J #1 |
| **Test No:** | SW8021B |

# QC SUMMARY REPORT
# SURROGATE RECOVERIES

## Aromatic Volatiles by GC/PID

| Sample ID | 14FBZ | 4BCBZ | FLBZ |
|---|---|---|---|
| 0206057-01A | 99.5 | 107 | 102 |
| 0206057-02A | 99.2 | 106 | 103 |
| 0206057-03A | 99.6 | 106 | 103 |
| 0206057-04A | 99.7 | 106 | 103 |
| 0206057-05A | 99.4 | 105 | 103 |
| 0206057-06A | 99.1 | 106 | 103 |
| 0206057-07A | 99.3 | 108 | 102 |
| 0206057-08A | 99.3 | 108 | 103 |
| 0206061-01A | 95.4 | 100 | 102 |
| CCV1_020627 | 97 | 107 | 99.6 |
| CCV1_020628 | 98.5 | 110 | 102 |
| CCV2_020627 | 99.2 | 112 | 102 |
| CCV2_020628 | 98.8 | 108 | 102 |
| CCV3_020627 | 98.1 | 108 | 101 |
| CCV3_020628 | 98.6 | 106 | 102 |
| LCS_020627 | 97 | 109 | 99 |
| LCS_020628 | 98.4 | 111 | 101 |
| MB_020627 | 97.8 | 108 | 99.8 |
| MB_020628 | 99.1 | 111 | 102 |

| Acronym | | Surrogate | QC Limits |
|---|---|---|---|
| 14FBZ | = | 1,4-Difluorobenzene | 70-130 |
| 4BCBZ | = | 4-Bromochlorobenzene | 70-130 |
| FLBZ | = | Fluorobenzene | 70-130 |

*** Surrogate recovery outside acceptance limits**