# 3R - 097

# ANNUAL MONITORING REPORT

# 06/13/2005

Souder, Miller & Associates ♦ P.O. Box 2606 ♦ Farmington, NM 87499-2606
612 East Murray Drive ♦ Farmington, NM 87401-6624 ♦ (505) 325-5667 ♦ fax (505) 327-1496



February 21, 2005

ConocoPhillips
Attn: Mr. Neal Goates, RM&R Site Manager
Threadneedle Office
PO Box 2197
Houston, TX 77252-2197



RE: 2004 Ground Water Report
ConocoPhillips Location: Shepard & Kelsey #1
Unit L, Sec. 29, T29N, R11W, NMPM, San Juan Co., NM

Project: 5114224

Dear Mr. Goates,

The following report summarizes the ground water remediation and monitoring activities conducted by Souder Miller and Associates (SMA) on behalf of ConocoPhillips at the Shepard and Kelsey well location near Bloomfield, NM. This report covers the calendar year of 2004, and follows the format outlined in the *Comprehensive Ground Water Remediation and Long-Term Monitoring Plan for Conoco Locations in the San Juan Basin, New Mexico* (here after known as the monitoring plan), submitted to the New Mexico Oil Conservation Division (NMOCD) on October 15, 1998.

**Summary of 2004 Activities:**

Ground water sampling of SB-12 was conducted during the months of January and April of 2004. Per a request from ConocoPhillips, sampling was changed to a once a year schedule after the April 2004 sampling event.

Sparge point SB 12 continues to have benzene, toluene, ethyl benzene, and xylenes (BTEX) contamination above New Mexico Water Quality Control Commission (NMWQCC) standards.

**Sampling**

In accordance with the monitoring plan, water levels were measured in the monitoring wells prior to purging and sampling. Samples were collected, preserved and transported in accordance with Environmental Protection Agency prescribed procedures and proper chain-of-custody protocol was followed. The laboratory analyses ordered followed the approved Conoco Ground Water Plan.

Table 1 summarizes the monitoring well data and water levels measured during previous and current sampling events. Table 2 summarizes the laboratory results for BTEX compounds from all water sampling completed at the referenced site.

Copies of all laboratory reports for the calendar year 2004 along with all laboratory QA/QC documentation and chains-of-custody, are attached with this report.

***Conclusion***

The following conclusion is based on the 2004 ground water monitoring results associated with a former production pit at the Shepard & Kelsey #1 well location:

1. Sparge point SB 12 continues to show BTEX contamination above the NMWQCC standards.

***Recommendations***

1. Depending on the direction from the NMOCD more aggressive remediation efforts may be necessary to meet NMWQCC standards.
2. When sampling requirements have been completed, prepare a Final Pit Closure Form to be submitted to NMOCD for approval.
3. Following NMOCD's approval for closure, plug and abandon all monitoring wells in accordance with NMOCD regulations.

***Limitations and Closure:***

This annual ground water report documents the results of ground water monitoring for the referenced ConocoPhillips well location during the calendar year 2004. This report follows the Comprehensive Ground Water Remediation and Long-Term Monitoring Plan for Conoco Locations in the San Juan Basin, New Mexico, dated October 15, 1997.

The scope of SMA's services consisted of project management, periodic ground water sampling and measurement of water levels, laboratory testing for ground water quality, and preparation of this annual report. All work has been performed in accordance with generally accepted professional practices in petroleum and environmental engineering, and hydrogeology.

Souder, Miller and Associates have prepared this document for the exclusive use of ConocoPhillips, as it pertains to the referenced well location operated by ConocoPhillips.

If there are any questions regarding this status report, please contact John Hagstrom, Walter Gage, or Reid Allan at Souder, Miller and Associates, (505) 325-5667. Thank you for your consideration.

Respectfully submitted,

Walter Gage
Geologist

Reviewed by:

Reid Allan
Senior Geologist

***Souder Miller and Associates***

Attachments: Table 1: Monitoring Well Details and Ground Water Levels Summary
Table 2: Ground Water BTEX Analytical Summary
Figure 1: Vicinity Map
Figure 2-Site Map
Figure 3: Potentiometric Surface Map-1/30/04
Figure 4: Potentiometric Surface Map-4/30/04
Laboratory Results, QA/QC, Chain of Custody

Acknowledgment:
CONOCOPHILLIPS, Inc.

Neal Smith / Site Manger
(Name/Title)

3/17/05
(Date)

WJG/wjg

***References***

On Site Technologies, Ltd., March 21, 1998, letter to Mr. C. John Coy, SHEAR Specialist, Conoco, Inc., Midland Division, regarding: *Monitoring Well Installation & Status of Sampling, Conoco Location, Shepard & Kelsey #1, Unit L, Sec. 29, T29N, R11W, NMPM, San Juan Co., NM.*

On Site Technologies, Ltd., February 1, 1998, letter to Ms. Shirley Ebert, SHEAR Specialist, Conoco, Inc., Midland Division, regarding: 1997 Annual Ground Water Report, *Conoco Location, Shepard & Kelsey #1, Unit L, Sec. 29, T29N, R11W, NMPM, San Juan Co., NM.*

January 28, 2004 #5114224

Mr. William C. Olson
Environmental Bureau
Oil Conservation Division
New Mexico Energy, Minerals & Natural Resources Department
1220 South St. Francis Dr.
Santa Fe, NM 87505

RE: PLAN FOR FUTURE WORK, CONOCOPHILLIPS SHEPHARD & KELSEY #1

Dear Mr. Olson:

Souder, Miller & Associates (SMA) has prepared this letter on behalf of ConocoPhillips to confirm the results of the January 27, 2004 meeting between ConocoPhillips and the Oil Conservation Division (OCD). The meeting established a plan for future work on the ConocoPhillips Shephard & Kelsey #1 site. ConocoPhillips and SMA understand that the plan consists of:

1. Continue to sample impacted well SB-12 for benzene, toluene, ethylbenzene and total xylenes by EPA method 8020 until four quarters of water contaminant concentrations below New Mexico Water Quality Control Commission standards are achieved. Other site wells will be monitored in the final, fourth quarter to verify site closure.

If this is not OCD's understanding of the plan for future work, please inform me within 10 business days (505-473-9211, rsa@soudermiller.com). ConocoPhillips and SMA appreciated the opportunity to meet with you and establish a path towards closure for this project.

Sincerely,

SOUDER MILLER & ASSSOCIATES

Reid S. Allan
Vice President/Senior Scientist

Cc: Mr. Neal Goates, ConocoPhillips

Souder, Miller and Associates
Table 1
Groundwater Level Summary
Shephard & Kelsey #1
Unit L, Sec. 29, T29N, R11W

| Well Number | Top of Casing Elevation* (ft) | Total Depth of Well (ft)* | Well Type | Screen Interval (ft) (BGS) * | Sample Date | Depth to Groundwater (ft) (BTOC)* | Relative Groundwater Elevation (ft) |
|---|---|---|---|---|---|---|---|
| MW-NE | 100.0 | 5.42 | | 4.0 | 06/12/96 | 2.54 | 97.46 |
| | | | | | 09/16/97 | NM | |
| | | | | | 12/02/97 | 2.31 | 97.69 |
| | | | | | 3/13/98 | 2.19 | 97.81 |
| | | | | | 6/9/98 | 2.12 | 97.81 |
| | | | | | 9/14/98 | 3.28 | 97.88 |
| | | | | | 6/14/01 | 6.4 | 93.60 |
| | | | | | 9/19/01 | 7.62 | 92.38 |
| | | | | | 12/13/01 | 6.86 | 93.14 |
| | | | | | 3/12/02 | 6.53 | 93.47 |
| | | | | | 6/19/02 | 7.4 | 92.6 |
| | | | | | 9/17/02 | 7.01 | 92.99 |
| | | | | | 1/2/03 | NMW | |
| | | | | | 3/20/03 | 6.01 | 93.99 |
| | | | | | 6/11/03 | 6.87 | 93.13 |
| | | | | | 10/6/03 | 6.84 | 93.16 |
| | | | | | 1/30/04 | 6.27 | 93.73 |
| | | | | | 4/26/04 | 6.01 | 93.99 |
| DG 1 | 100.895 | 9.05 | | 4.0 | 6/15/01 | 6.15 | 94.70 |
| | | | | | 9/19/01 | 6.57 | 94.33 |
| | | | | | 12/13/01 | 6.49 | 94.41 |
| | | | | | 3/12/02 | 6.23 | 94.67 |
| | | | | | 6/19/02 | 6.88 | 94.02 |
| | | | | | 9/17/02 | 6.75 | 94.15 |
| | | | | | 1/2/03 | NMW | |
| | | | | | 3/20/03 | 5.69 | 95.21 |
| | | | | | 6/11/03 | 6.75 | 94.15 |
| | | | | | 10/6/03 | 6.54 | 94.36 |
| | | | | | 1/30/04 | 5.95 | 94.95 |
| | | | | | 4/26/04 | 4.78 | 96.12 |

Souder, Miller and Associates
Table 1
Groundwater Level Summary
Shephard & Kelsey #1
Unit L, Sec. 29, T29N, R11W

| Well Number | Top of Casing Elevation* (ft) | Total Depth of Well (ft)* | Well Type | Screen Interval (ft) (BGS) * | Sample Date | Depth to Groundwater (ft) (BTOC)* | Relative Groundwater Elevation (ft) |
|---|---|---|---|---|---|---|---|
| SB 12 | 99.01 | 11.31 | | 4.0 | 6/14/01 | 6.9 | 92.11 |
| | | | | | 9/19/01 | 7.25 | 91.76 |
| | | | | | 12/13/01 | 6.39 | 92.62 |
| | | | | | 3/12/02 | 6.11 | 92.9 |
| | | | | | 6/19/02 | 6.76 | 92.25 |
| | | | | | 9/17/02 | 6.66 | 92.35 |
| | | | | | 1/2/03 | NMW | |
| | | | | | 3/20/03 | 5.53 | 93.48 |
| | | | | | 6/11/03 | 6.57 | 92.44 |
| | | | | | 10/6/03 | 6.43 | 92.58 |
| | | | | | 1/30/04 | 5.80 | 93.21 |
| | | | | | 4/26/04 | 5.61 | 93.40 |
| UG 1 | 101.71 | 9.83 | | 4.0 | 6/14/01 | 5.81 | 95.90 |
| | | | | | 3/12/02 | 5.62 | 96.09 |
| | | | | | 6/19/02 | 6.02 | 95.69 |
| | | | | | 9/17/02 | 5.94 | 95.77 |
| | | | | | 1/2/03 | NMW | 0 |
| | | | | | 3/20/03 | 4.87 | 96.84 |
| | | | | | 6/11/03 | 5.68 | 96.03 |
| | | | | | 10/6/03 | 5.74 | 95.97 |
| | | | | | 1/30/04 | 5.16 | 96.55 |
| | | | | | 4/26/04 | 5.08 | 96.63 |

Souder, Miller and Associates
Table 1
Groundwater Level Summary
Shephard & Kelsey #1
Unit L, Sec. 29, T29N, R11W

| Well Number | Top of Casing Elevation* (ft) | Total Depth of Well (ft)* | Well Type | Screen Interval (ft) (BGS) * | Sample Date | Depth to Groundwater (ft) (BTOC)* | Relative Groundwater Elevation (ft) |
|---|---|---|---|---|---|---|---|
| UG 2 | 101.23 | 9.84 | | 4.0 | 6/14/01 | 4.99 | 96.24 |
| | | | | | 3/12/02 | 6.19 | 95.04 |
| | | | | | 6/19/02 | 5.14 | 96.09 |
| | | | | | 9/17/02 | 5.09 | 9614 |
| | | | | | 1/2/03 | NMW | |
| | | | | | 3/20/03 | 4.21 | 97.02 |
| | | | | | 6/11/03 | 4.91 | 96.32 |
| | | | | | 10/6/03 | 4.91 | 96.28 |
| | | | | | 1/30/04 | 4.45 | 96.78 |
| | | | | | 4/26/04 | 4.37 | 96.86 |
| | | | | | | | |
| DG-MW | unknown | 5.42 | | 4.0 | 6/15/01 | 2.25 | |
| | | | | | 10/6/03 | 3.1 | |
| | | | | | 1/30/04 | 2.47 | |
| | | | | | 4/26/04 | 2.21 | |

BGS - approximate measurements taken as Below Ground Surface
BTOC - Below Top of Casing
NM - Not Measured

gwl1362.doc

Souder, Miller and Associates
Table 2
BTEX Analytical Summary
Shephard & Kelsey #1
Unit L, Sec. 29, T29N, R11W

| Sample Date | Sample ID# | Monitor Well | Remarks | BTEX per EPA 8020 (ppb) | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Benzene | Toluene | Ethylbenzene | Total Xylene | Total BTEX |
| 07/18/97 | 0396G01420 | DG#1 | IML | 10.5 | 36.3 | 280.0 | 1077.6 | 1405.4 |
| 06/15/01 | 0106018-01A | DG #1 | | BDL | BDL | 54.0 | 285.0 | 339.0 |
| 09/19/01 | 0109026-03A | DG#1 | | BDL | BDL | BDL | BDL | BDL |
| 12/13/01 | 0112015-03A | DG#1 | | BDL | BDL | BDL | BDL | BDL |
| 3/12/02 | 0203022-03A | DG#1 | | BDL | BDL | BDL | BDL | BDL |
| 6/19/02 | 0206030-02A | DG#1 | | BDL | BDL | BDL | BDL | BDL |
| 9/17/02 | 0209019-02A | DG#1 | | BDL | BDL | BDL | BDL | BDL |
| 3/20/03 | 0303021-004A | DG#1 | | BDL | BDL | BDL | BDL | BDL |
| 6/11/03 | 0306025-003A | DG#1 | | BDL | BDL | BDL | BDL | BDL |
| 10/6/03 | 031011-003 | DG#1 | | BDL | BDL | BDL | BDL | BDL |
| | | | | | | | | |
| 07/18/96 | 0369G01419 | MW#1 | IML | 191.0 | BDL | 77.9 | 100.0 | 368.9 |
| 03/20/97 | 14002 | MW#1 | On Site Lab. | < 0.2 | < 0.2 | < 0.2 | 0.2 | 0.2 |
| 06/12/97 | 14941 | MW#1 | On Site Lab. | BDL | BDL | BDL | 0.2 | 0.2 |
| 09/16/97 | * | | NOT SAMPLED | | | | | |
| 12/05/97 | 17002 | MW#1 | On Site Lab. | BDL | BDL | 0.2 | 0.2 | 0.4 |
| 3/13/98 | 9803055-01A | MW#1 | On Site Lab. | BDL | BDL | BDL | BDL | BDL |
| 6/9/98 | 9806032-1A | MW#1 | On Site Lab. | BDL | BDL | BDL | BDL | BDL |
| 9/14/98 | 9809030-01A | MW#1 | On Site Lab. | BDL | BDL | BDL | BDL | BDL |
| WQCC | ACTION | LEVELS | | 10.0 | 750.0 | 750.0 | 620.0 | |

BDL Below Detection Limits

Souder, Miller and Associates
Table 2
BTEX Analytical Summary
Shephard & Kelsey #1
Unit L, Sec. 29, T29N, R11W

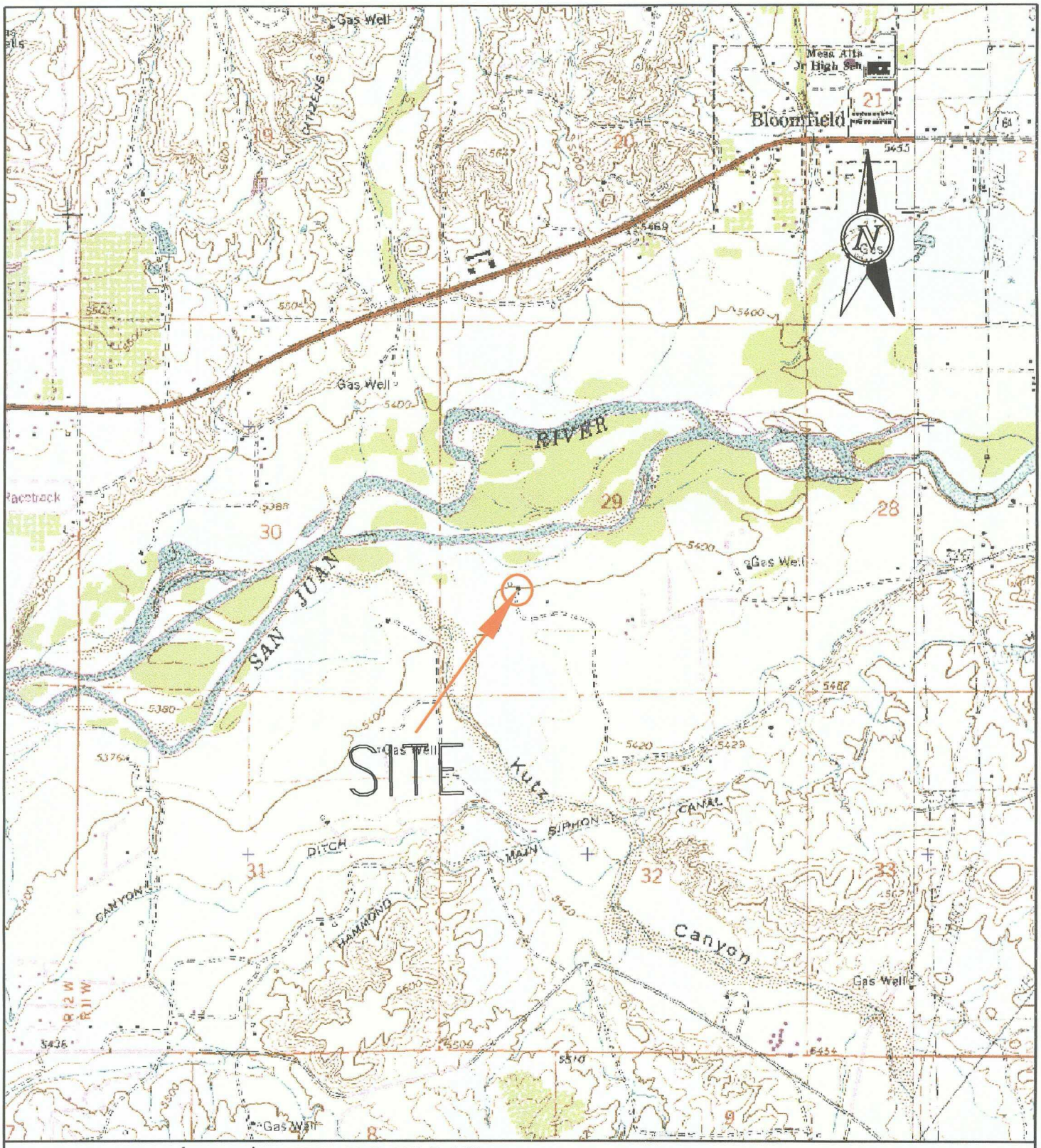
| Sample Date | Sample ID# | Monitor Well | Remarks | BTEX per EPA 8020 (ppb) | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Benzene | Toluene | Ethylbenzene | Total Xylene | Total BTEX |
| 06/14/01 | 0106016-01A | UG 1 | | BDL | BDL | BDL | BDL | 0 |
| 06/14/01 | 0106016-02A | UG 2 | | BDL | BDL | BDL | BDL | 0 |
| 06/14/01 | 0106016-03A | MW-NE | | 9.6 | BDL | 8.3 | 1.9 | 19.8 |
| 09/19/01 | 0109026-01A | MW-NE | | 24.0 | 0.7 | 18.0 | 26.5 | 69.2 |
| 12/13/01 | 0112015-01A | MW-NE | | 10.0 | BDL | 6.0 | 4.7 | 20.7 |
| 3/12/02 | 0203022-01A | MWNE | | 25.0 | BDL | 24 | 32 | 81.0 |
| 6/19/02 | 0206030-03A | MWNE | | 12.0 | BDL | 5.9 | 5.4 | 23.3 |
| 9/17/02 | 0209019-03A | MWNE | | 13.0 | BDL | 11.0 | 10.8 | 34.8 |
| 3/20/03 | 0303021-002A | MWNE | | 5.8 | 1.9 | 12 | 4.7 | 24.4 |
| 6/11/03 | 0306025-001A | MWNE | | 2.3 | 0.8 | 3.1 | 2.8 | 9.0 |
| 10/6/03 | 031011-004 | MWNE | | 5.0 | BDL | 3.6 | 2.3 | 10.9 |
| 06/14/01 | 0106016-04A | SB 12 | | 42.0 | 5.50 | 72.0 | 370.0 | 489.5 |
| 09/19/01 | 0109026-02A | SB 12 | | 110.0 | BDL | 120.0 | 810.0 | 1040.0 |
| 12/13/01 | 0112015-02A | SB 12 | | 28.0 | BDL | 63.0 | 322.9 | 413.9 |
| 3/12/02 | 0203022-02A | SB 12 | | 64.0 | BDL | 56.0 | 211.4 | 331.40 |
| 6/19/02 | 0206030-01A | SB-12 | | 130 | BDL | 76 | 380 | 586.0 |
| 9/17/02 | 0209019-01A | SB-12 | | 40.0 | BDL | 51.0 | 245.1 | 336.1 |
| 3/20/03 | 0303021-003A | SB-12 | | 53.0 | 10.0 | 41.0 | 213.0 | 317.0 |
| 6/11/03 | 0306025-002A | SB-12 | | 370.0 | BDL | 19.0 | 53.8 | 442.8 |
| WQCC | ACTION | LEVELS | | 10.0 | 750.0 | 750.0 | 620.0 | |

BDL Below Detection Limits

Souder, Miller and Associates
*Table 2*
BTEX Analytical Summary
Shephard & Kelsey #1
Unit L, Sec. 29, T29N, R11W

| Sample Date | Sample ID# | Monitor Well | Remarks | BTEX per EPA 8020 (ppb) | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Benzene | Toluene | Ethylbenzene | Total Xylene | Total BTEX |
| 10/6/03 | 0310011-002 | SB-12 | | 6.1 | BDL | 30. | 182.0 | 218.1 |
| 1/30/04 | 0401019-001A | SB-12 | | 12 | BDL | 16 | 74.2 | 102.2 |
| 4/26/04 | 0404042-001A | SB-12 | | 45 | BDL | 21 | 100 | 166 |
| | | | | | | | | |
| 06/15/01 | 0106018-02A | DG-MW | | BDL | BDL | BDL | BDL | BDL |
| 10/6/03 | 031011-001 | DG-MW | | BDL | BDL | BDL | BDL | BDL |
| WQCC | ACTION | LEVELS | | 10.0 | 750.0 | 750.0 | 620.0 | |

* Well not sampled 9/16/97 due to area around well flooded.
BDL Below Detection Limits




SITE LOCATION: NW 1/4 SW 1/4 SECTION 29 T 29N R 11W
SOURCE MAP: HORN CANYON, NEW MEXICO USGS QUADRANGLE

SCALE

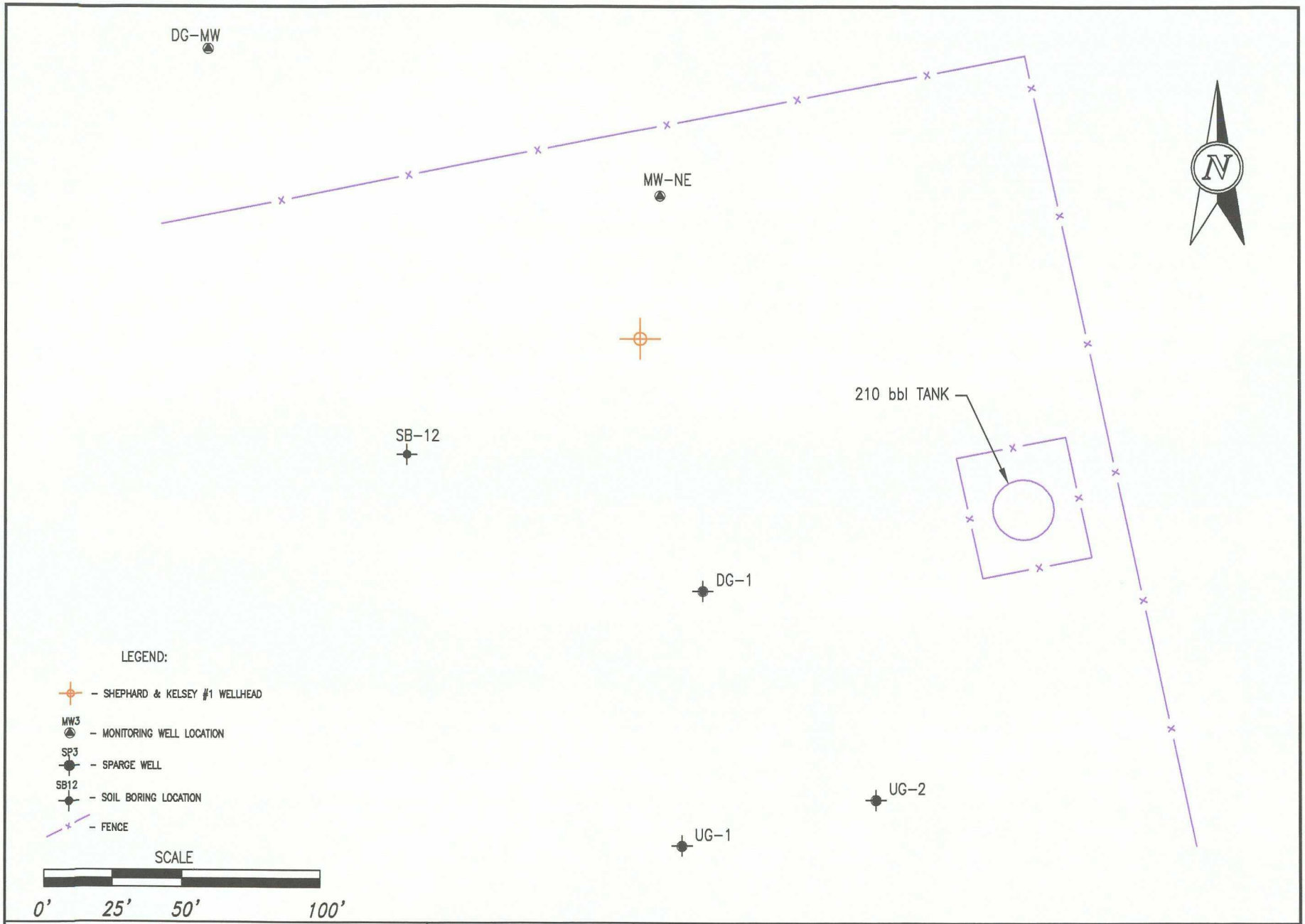
0' 1000' 2000' 4000'

SMA
Civil / Environmental Scientists & Engineers
612 E. MURRAY DR. PH. (505) 325-5667
FARMINGTON, NM 87401 FAX (505) 327-1496

| | |
|---|---|
| APPROVED: WG | DATE: |
| DRAWN BY: TLONG | DATE: 2/11/05 |
| REVISIONS BY: | DATE: |
| PROJECT # 5114224 | FIGURE: 1 |

# VICINITY MAP

CONOCOPHILLIPS
SHEPHARD & KELSEY #1
BLOOMFIELD, NEW MEXICO



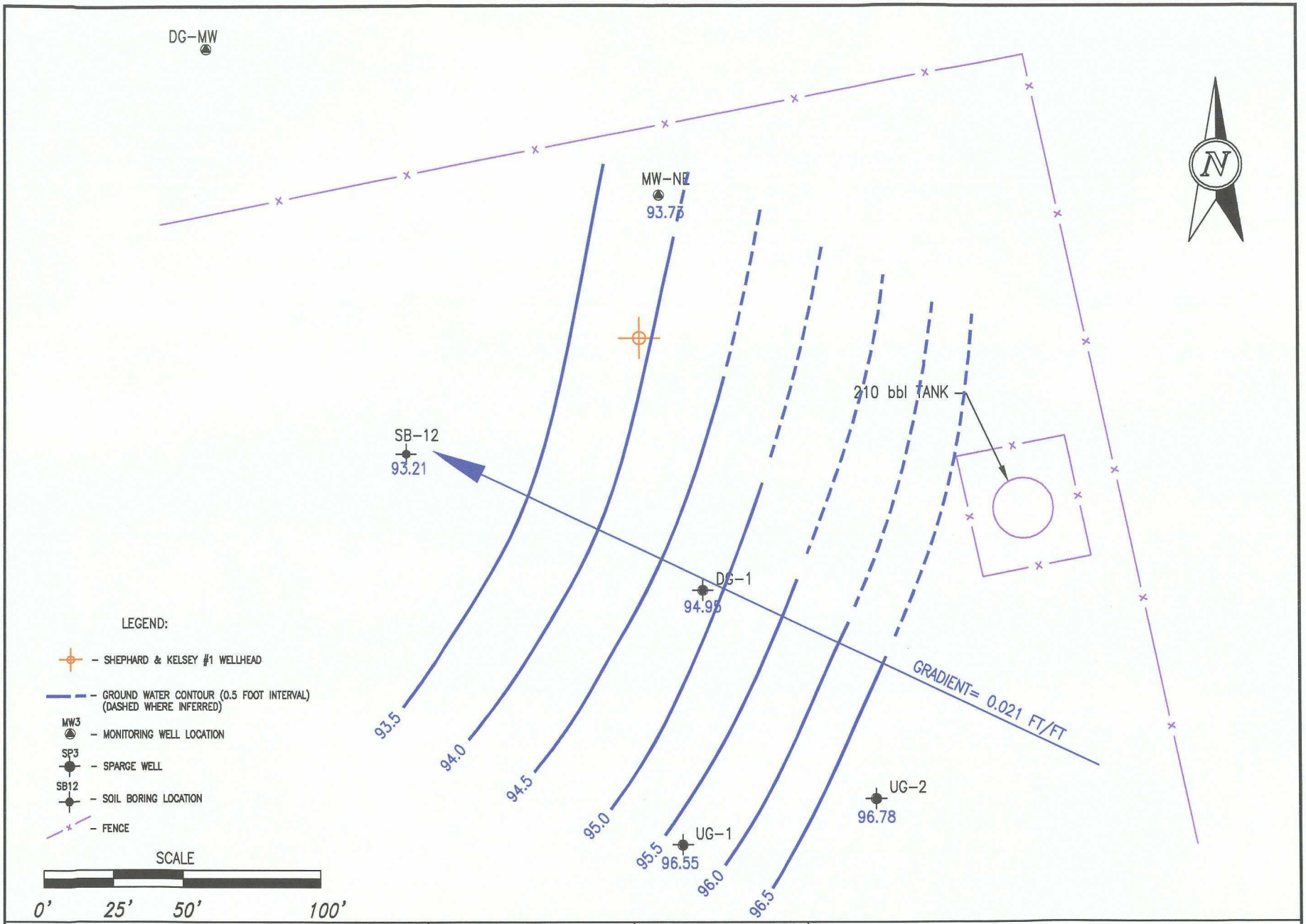

SMA
Civil / Environmental Scientists & Engineers
612 E. MURRAY DR. FARMINGTON, NM 87401
PH. (505) 325-5667 FAX (505) 327-1496

| | |
|---|---|
| APPROVED: | DATE: |
| DRAWN BY: MED | DATE: 2/20/02 |
| REVISIONS BY: TLONG | DATE: 2/8/05 |
| PROJECT # 5514224 | FIGURE: 2 |

# SITE MAP

SHEPHARD & KELSEY #1
CONOCO, INC.
SAN JUAN BASIN, NEW MEXICO

c:/lddr2/2-1362/a1.dwg_june




SMA
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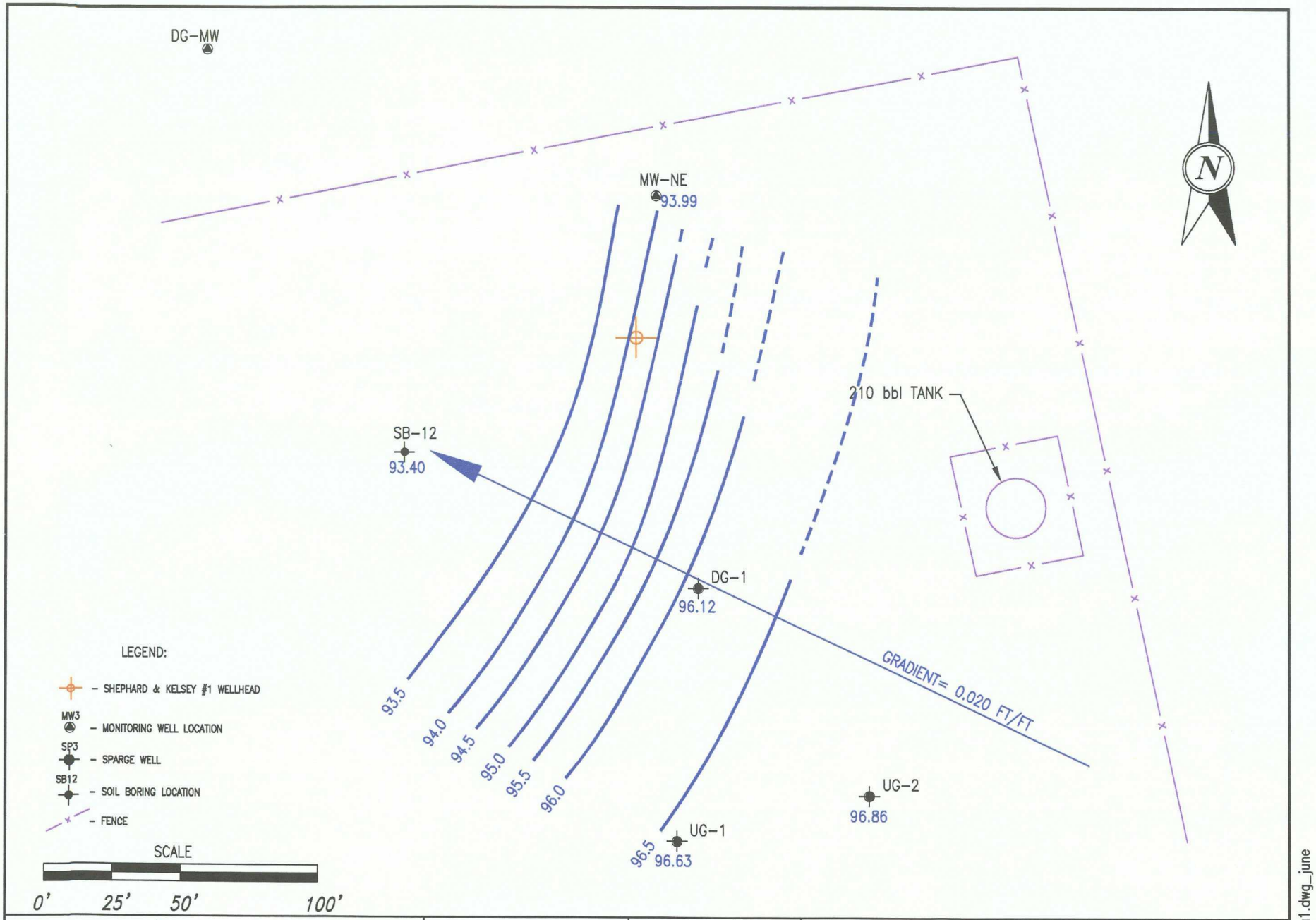
| | |
|---|---|
| APPROVED: | DATE: |
| DRAWN BY: MED | DATE: 2/20/02 |
| REVISIONS BY: TLONG | DATE: 2/8/05 |
| PROJECT # 5114224 | FIGURE: 3 |

POTETIOMETRIC SURFACE MAP
1/30/04
SHEPHARD & KELSEY #1
CONOCOPHILLIPS
SAN JUAN BASIN, NEW MEXICO

c:/ldr2/2-1362/a1.dwg_june




SMA
Civil / Environmental Scientists & Engineers
612 E. MURRAY DR. FARMINGTON, NM 87401
PH. (505) 325-5667 FAX (505) 327-1496

| | |
|---|---|
| APPROVED: | DATE: |
| DRAWN BY: MED | DATE: 2/20/02 |
| REVISIONS BY: TLONG | DATE: 2/8/05 |
| PROJECT # 5114224 | FIGURE: 4 |

POTETIOMETRIC SURFACE MAP
4/26/04
SHEPHARD & KELSEY #1
CONOCOPHILLIPS
SAN JUAN BASIN, NEW MEXICO

c:/ldd2/2-1362/a1.dwg_june

612 E. Murray Drive
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Off: (505) 327-1072
FAX: (505) 327-1496

# iiná bá

P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

February 04, 2004

John Hagstrom
Souder, Miller & Associates
612 E. Murray Drive
P.O. Box 2606
Farmington, NM 87401

TEL: 505-325-1556
FAX 505-327-1496

RE: S & K 1, 5114224

Order No.: 0401019

Dear John Hagstrom:

iiná bá received 2 samples on 1/30/2004 for the analyses presented in the following report.

This certificate of analysis includes the Analytical Report(s) for the sample(s) received by the laboratory. A Quality Control Summary Report, the Sample Receipt Checklist and an executed Chain of Custody are included as an addendum to this report.

Should you have any questions regarding this certificate of analysis, please contact the laboratory at your convenience.

Report Approved By: _____

David Cox
Laboratory Manager

Heidi Reese
Quality Assurance Officer

612 E. Murray Drive
Farmington, NM 87499

Off: (505) 327-1072
FAX: (505) 327-1496

# iiná bá

P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

**iiná bá** **Date:** *04-Feb-04*

**CLIENT:** Souder, Miller & Associates
**Project:** S & K 1, 5114224
**Lab Order:** 0401019

## CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s), the quality control summary report(s) or the sample receipt checklist.

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FAX: (505) 327-1496

iiná bá

P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

# ANALYTICAL REPORT

**Date:** *04-Feb-04*

| | | | |
|---|---|---|---|
| **CLIENT:** | Souder, Miller & Associates | **Client Sample Info:** | Shepard and Kelsey 1 |
| **Work Order:** | 0401019 | **Client Sample ID:** | SB12 |
| **Project:** | S & K 1, 5114224 | **Collection Date:** | 1/30/2004 11:50:00 AM |
| **Lab ID:** | 0401019-001A | **Matrix:** | AQUEOUS |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **JEM** |
| Benzene | 12 | 0.5 | | µg/L | 1 | 2/3/2004 |
| Ethylbenzene | 16 | 0.5 | | µg/L | 1 | 2/3/2004 |
| m,p-Xylene | 73 | 1.0 | | µg/L | 1 | 2/3/2004 |
| o-Xylene | 1.2 | 0.5 | | µg/L | 1 | 2/3/2004 |
| Toluene | ND | 0.5 | | µg/L | 1 | 2/3/2004 |

**Qualifiers:**

ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
H - Parameter exceeded Maximum Allowable Holding Time
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above Upper Quantitation Limit - UQL

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iiná bá

P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

# ANALYTICAL REPORT

**Date:** *04-Feb-04*

| | | | |
|---|---|---|---|
| **CLIENT:** | Souder, Miller & Associates | **Client Sample Info:** | Shepard and Kelsey 1 |
| **Work Order:** | 0401019 | **Client Sample ID:** | Trip Blank |
| **Project:** | S & K 1, 5114224 | **Collection Date:** | 1/30/2004 10:00:00 AM |
| **Lab ID:** | 0401019-002A | **Matrix:** | AQUEOUS |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **JEM** |
| Benzene | ND | 0.5 | | µg/L | 1 | 2/3/2004 |
| Ethylbenzene | ND | 0.5 | | µg/L | 1 | 2/3/2004 |
| m,p-Xylene | ND | 1.0 | | µg/L | 1 | 2/3/2004 |
| o-Xylene | ND | 0.5 | | µg/L | 1 | 2/3/2004 |
| Toluene | ND | 0.5 | | µg/L | 1 | 2/3/2004 |

**Qualifiers:**

ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
H - Parameter exceeded Maximum Allowable Holding Time
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above Upper Quantitation Limit - UQL

**iiná bá, Ltd.**

## Sample Receipt Checklist

Client Name: **SMA1005** Date and Time Received: **1/30/2004**

Work Order Number: **0401019** Received by: JEM

Checklist completed by: J Moore 1/30/04 (Signature / Date) Reviewed by: KL 2/2/04 (Initials / Date)

Matrix: Carrier name: John Hagstrom

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☐ | No ☐ | Not Present ☑ |
| Custody seals intact on shippping container/cooler? | Yes ☐ | No ☐ | Not Present ☑ |
| Custody seals intact on sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? | Yes ☑ | No ☐ | |
| Container/Temp Blank temperature in compliance? | Yes ☑ ? | No ☐ | |
| Water - VOA vials have zero headspace? | No VOA vials submitted ☐ | Yes ☑ | No ☐ |
| Water - pH acceptable upon receipt? | Yes ☑ | No ☐ | |

Adjusted? _____ Checked by: _____

Any No and/or NA (not applicable) response must be detailed in the comments section below.

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Comments: Samples left in cooler by client.

Corrective Action: _____

iiná bá

**Date:** *04-Feb-04*

**CLIENT:** Souder, Miller & Associates
**Work Order:** 0401019
**Project:** S & K 1, 5114224

# ANALYTICAL QC SUMMARY REPORT

**TestCode: BTEX_W**

| Sample ID | MBLK_040203 | SampType: | MBLK | TestCode: | BTEX_W | Units: | µg/L | Prep Date: | | Run ID: | GC-1_040203A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | ZZZZZ | Batch ID: | R5350 | TestNo: | SW8021B | | | Analysis Date: | 2/3/2004 | SeqNo: | 77153 |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.50 | | | | | | | | | |
| Ethylbenzene | ND | 0.50 | | | | | | | | | |
| m,p-Xylene | ND | 1.0 | | | | | | | | | |
| o-Xylene | ND | 0.50 | | | | | | | | | |
| Toluene | 0.074 | 0.50 | | | | | | | | | J |

| Sample ID | LCS_040203 | SampType: | LCS | TestCode: | BTEX_W | Units: | µg/L | Prep Date: | | Run ID: | GC-1_040203A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | ZZZZZ | Batch ID: | R5350 | TestNo: | SW8021B | | | Analysis Date: | 2/3/2004 | SeqNo: | 77152 |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 40.46 | 0.50 | 40 | 0 | 101 | 86 | 114 | 0 | 0 | | |
| Ethylbenzene | 42.17 | 0.50 | 40 | 0 | 105 | 85 | 116 | 0 | 0 | | |
| m,p-Xylene | 84.87 | 1.0 | 80 | 0 | 106 | 89 | 114 | 0 | 0 | | |
| o-Xylene | 42.33 | 0.50 | 40 | 0 | 106 | 86 | 114 | 0 | 0 | | |
| Toluene | 42.76 | 0.50 | 40 | 0.074 | 107 | 87 | 112 | 0 | 0 | | |

| Sample ID | 0401019-001AMS | SampType: | MS | TestCode: | BTEX_W | Units: | µg/L | Prep Date: | | Run ID: | GC-1_040203A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | SB12 | Batch ID: | R5350 | TestNo: | SW8021B | | | Analysis Date: | 2/3/2004 | SeqNo: | 77154 |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 206.8 | 2.5 | 200 | 12.07 | 97.4 | 81 | 116 | 0 | 0 | | |
| Ethylbenzene | 223.4 | 2.5 | 200 | 15.78 | 104 | 85 | 115 | 0 | 0 | | |
| m,p-Xylene | 495.7 | 5.0 | 400 | 74.13 | 105 | 84 | 117 | 0 | 0 | | |
| o-Xylene | 209.1 | 2.5 | 200 | 3.165 | 103 | 84 | 113 | 0 | 0 | | |
| Toluene | 211.2 | 2.5 | 200 | 8.164 | 102 | 88 | 110 | 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:** Souder, Miller & Associates
**Work Order:** 0401019
**Project:** S & K 1, 5114224

# ANALYTICAL QC SUMMARY REPORT

**TestCode: BTEX_W**

| Sample ID 0401019-001AMSD | SampType: MSD | TestCode: BTEX_W | Units: µg/L | Prep Date: | Run ID: GC-1_040203A |
|---|---|---|---|---|---|
| Client ID: SB12 | Batch ID: R5350 | TestNo: SW8021B | | Analysis Date: 2/3/2004 | SeqNo: 77155 |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 213.8 | 2.5 | 200 | 12.07 | 101 | 78 | 111 | 206.8 | 3.35 | 7 | |
| Ethylbenzene | 231.4 | 2.5 | 200 | 15.78 | 108 | 82 | 111 | 223.4 | 3.50 | 6.9 | |
| m,p-Xylene | 512.1 | 5.0 | 400 | 74.13 | 109 | 80 | 113 | 495.7 | 3.27 | 6.8 | |
| o-Xylene | 215.1 | 2.5 | 200 | 3.165 | 106 | 83 | 110 | 209.1 | 2.86 | 6.4 | |
| Toluene | 218.3 | 2.5 | 200 | 8.164 | 105 | 84 | 110 | 211.2 | 3.31 | 6.3 | |

| Sample ID CCV1_040203 | SampType: CCV | TestCode: BTEX_W | Units: µg/L | Prep Date: | Run ID: GC-1_040203A |
|---|---|---|---|---|---|
| Client ID: ZZZZZ | Batch ID: R5350 | TestNo: SW8021B | | Analysis Date: 2/3/2004 | SeqNo: 77150 |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 21.08 | 0.50 | 20 | 0 | 105 | 85 | 115 | 0 | 0 | | |
| Ethylbenzene | 21.88 | 0.50 | 20 | 0 | 109 | 85 | 115 | 0 | 0 | | |
| m,p-Xylene | 43.72 | 1.0 | 40 | 0 | 109 | 85 | 115 | 0 | 0 | | |
| o-Xylene | 22.04 | 0.50 | 20 | 0 | 110 | 85 | 115 | 0 | 0 | | |
| Toluene | 22.38 | 0.50 | 20 | 0 | 112 | 85 | 115 | 0 | 0 | | |

| Sample ID CCV2_040203 | SampType: CCV | TestCode: BTEX_W | Units: µg/L | Prep Date: | Run ID: GC-1_040203A |
|---|---|---|---|---|---|
| Client ID: ZZZZZ | Batch ID: R5350 | TestNo: SW8021B | | Analysis Date: 2/3/2004 | SeqNo: 77151 |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 39.2 | 0.50 | 40 | 0 | 98 | 85 | 115 | 0 | 0 | | |
| Ethylbenzene | 40.93 | 0.50 | 40 | 0 | 102 | 85 | 115 | 0 | 0 | | |
| m,p-Xylene | 82.25 | 1.0 | 80 | 0 | 103 | 85 | 115 | 0 | 0 | | |
| o-Xylene | 41.14 | 0.50 | 40 | 0 | 103 | 85 | 115 | 0 | 0 | | |
| Toluene | 41.27 | 0.50 | 40 | 0 | 103 | 85 | 115 | 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

iiná bá

**Date:** 04-Feb-04

**CLIENT:** Souder, Miller & Associates
**Work Order:** 0401019
**Project:** S & K 1, 5114224
**Test No:** SW8021B **Matrix:** W

# QC SUMMARY REPORT
# SURROGATE RECOVERIES

| Sample ID | 14FBZ | 4BCBZ | FLBZ |
|---|---|---|---|
| 0401019-001A | 104 | 111 | 101 |
| 0401019-001A | 103 | 111 | 101 |
| 0401019-001A | 103 | 109 | 101 |
| 0401019-001AMS | 104 | 111 | 101 |
| 0401019-001AMSD | 103 | 111 | 101 |
| 0401019-002A | 105 | 111 | 102 |
| CCV1_040203 | 104 | 109 | 101 |
| CCV2_040203 | 103 | 112 | 101 |
| LCS_040203 | 103 | 111 | 100 |
| MBLK_040203 | 105 | 108 | 102 |

| Acronym | | Surrogate | QC Limits |
|---|---|---|---|
| 14FBZ | = | 1,4-Difluorobenzene | 87-124 |
| 4BCBZ | = | 4-Bromochlorobenzene | 75-139 |
| FLBZ | = | Fluorobenzene | 86-119 |

*** Surrogate recovery outside acceptance limits**

# CHAIN OF CUSTODY RECORD

3591

ǐiná bá
(for life's sake)
612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499
Phone: (505) 327-1072 • Fax: (505) 327-1496

Date 1/30/04

Page 1 of 1

**REPORT RESULTS TO:**

Report to: JHAGSTROM
Company:
Address:
City:
Phone: Fax: Email:

**SEND INVOICE TO:**

PO No.: Job No.: 5114224
Name:
Company:
Address:
City:

Turnaround Time:
10 days (normal) X
24-48 hours (100%)
3-5 days (50%)

Sample Integrity
Intact Y
On Ice Y

Subcontract
Yes
No /

Sampling Location:
SHK1 SB12

| Sample Identification | Sample Date | Sample Time | Matrix | Pres. | NUMBER OF CONTAINERS: | Analysis Requested: BTEX | Lab ID |
|---|---|---|---|---|---|---|---|
| SB12 | 1/30/04 | 1150 | H2O | ICE | 2 | + | 0401019-001A |
| TRIP BLANK | " | 1000 | " | " | 2 | + | -002A |

Relinquished by: [signature] Date/Time: 1/30/04 1230 Received by: J Moore Date/Time: 1/30/04 12:50
Relinquished by: Date/Time: Received by: Date/Time:
Relinquished by: Date/Time: Received by: Date/Time:
Comments:

**DISTRIBUTION** WHITE - Lab • YELLOW - Client • PINK - Courier

612 E. Murray Drive
Farmington, NM 87499

Off: (505) 327-1072
FAX: (505) 327-1496

# iiná bá

P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

May 10, 2004

Walter Gage
Souder, Miller & Associates
612 E. Murray Drive
P.O. Box 2606
Farmington, NM 87401

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

RE: 5114224; S&K 1

Order No.: 0404042

Dear Walter Gage:

iiná bá received 2 samples on 4/26/2004 for the analyses presented in the following report.

This certificate of analysis includes the Analytical Report(s) for the sample(s) received by the laboratory. A Quality Control Summary Report, the Sample Receipt Checklist and an executed Chain of Custody are included as an addendum to this report.

Should you have any questions regarding this certificate of analysis, please contact the laboratory at your convenience.

Report Approved By: _____

David Cox
Laboratory Manager

Heidi Reese
Quality Assurance Officer

612 E. Murray Drive
Farmington, NM 87499

Off: (505) 327-1072
FAX: (505) 327-1496

# iiná bá

P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

**iiná bá** **Date:** *10-May-04*

**CLIENT:** Souder, Miller & Associates
**Project:** 5114224; S&K 1
**Lab Order:** 0404042

## CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s), the quality control summary report(s) or the sample receipt checklist.

Analytical Comments for METHOD BTEX_W, SAMPLE 0404042-001A: Sample pH > 2 and analyzed eight days after collection date.

612 E. Murray Drive
Farmington, NM 87499

Off: (505) 327-1072
FAX: (505) 327-1496

# iiná bá

P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

## ANALYTICAL REPORT

**Date:** *10-May-04*

| | | | |
|---|---|---|---|
| **CLIENT:** | Souder, Miller & Associates | **Client Sample Info:** | S&K 1 |
| **Work Order:** | 0404042 | **Client Sample ID:** | SB 12 |
| **Project:** | 5114224; S&K 1 | **Collection Date:** | 4/26/2004 10:45:00 AM |
| **Lab ID:** | 0404042-001A | **Matrix:** | AQUEOUS |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **JEM** |
| Benzene | 45 | 0.5 | | µg/L | 1 | 5/4/2004 |
| Ethylbenzene | 21 | 0.5 | | µg/L | 1 | 5/4/2004 |
| m,p-Xylene | 100 | 1.0 | | µg/L | 1 | 5/4/2004 |
| o-Xylene | ND | 0.5 | | µg/L | 1 | 5/4/2004 |
| Toluene | ND | 0.5 | | µg/L | 1 | 5/4/2004 |

**Qualifiers:**

ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
H - Parameter exceeded Maximum Allowable Holding Time
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above Upper Quantitation Limit - UQL

612 E. Murray Drive
Farmington, NM 87499

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**iiná bá**

P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

# ANALYTICAL REPORT

**Date:** *10-May-04*

| | | | |
|---|---|---|---|
| **CLIENT:** | Souder, Miller & Associates | **Client Sample Info:** | S&K 1 |
| **Work Order:** | 0404042 | **Client Sample ID:** | Trip Blank |
| **Project:** | 5114224; S&K 1 | **Collection Date:** | 4/26/2004 8:00:00 AM |
| **Lab ID:** | 0404042-002A | **Matrix:** | AQUEOUS |

| Parameter | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **AROMATIC VOLATILES BY GC/PID** | | **SW8021B** | | | | Analyst: **JEM** |
| Benzene | ND | 0.5 | | µg/L | 1 | 5/4/2004 |
| Ethylbenzene | ND | 0.5 | | µg/L | 1 | 5/4/2004 |
| m,p-Xylene | ND | 1.0 | | µg/L | 1 | 5/4/2004 |
| o-Xylene | ND | 0.5 | | µg/L | 1 | 5/4/2004 |
| Toluene | ND | 0.5 | | µg/L | 1 | 5/4/2004 |

**Qualifiers:**

ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
H - Parameter exceeded Maximum Allowable Holding Time
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above Upper Quantitation Limit - UQL

**iiná bá**

## Sample Receipt Checklist

Client Name: **SMA1005** Date and Time Received: **4/26/2004**

Work Order Number: **0404042** Received by: HNR

Checklist completed by: Heidi R 4/26/04 (Signature / Date) Reviewed by: jm 4/27/04 (Initials / Date)

Matrix: Carrier name: Courier

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on shippping container/cooler? | Yes ☐ | No ☐ | Not Present ☑ |
| Custody seals intact on sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? | Yes ☑ | No ☐ | |
| Container/Temp Blank temperature in compliance? | Yes ☑ | No ☐ | |
| Water - VOA vials have zero headspace? | No VOA vials submitted ☐ | Yes ☑ | No ☐ |
| Water - pH acceptable upon receipt? | Yes ☑ | No ☐ | |

Adjusted? _____ Checked by: _____

Any No and/or NA (not applicable) response must be detailed in the comments section below.

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action: _____

iiná bá

**Date:** *10-May-04*

**CLIENT:** Souder, Miller & Associates
**Work Order:** 0404042
**Project:** 5114224; S&K 1

# ANALYTICAL QC SUMMARY REPORT

**TestCode: BTEX_W**

| Sample ID | MB_040504 | SampType: | MBLK | TestCode: | BTEX_W | Units: | µg/L | Prep Date: | | Run ID: | GC-1_040504A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | ZZZZZ | Batch ID: | R5657 | TestNo: | SW8021B | | | Analysis Date: | 5/4/2004 | SeqNo: | 80915 |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.1199 | 0.50 | | | | | | | | | J |
| Ethylbenzene | 0.1261 | 0.50 | | | | | | | | | J |
| m,p-Xylene | ND | 1.0 | | | | | | | | | |
| o-Xylene | 0.1252 | 0.50 | | | | | | | | | J |
| Toluene | 0.1427 | 0.50 | | | | | | | | | J |

| Sample ID | LCS1_040504 | SampType: | LCS | TestCode: | BTEX_W | Units: | µg/L | Prep Date: | | Run ID: | GC-1_040504A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | ZZZZZ | Batch ID: | R5657 | TestNo: | SW8021B | | | Analysis Date: | 5/4/2004 | SeqNo: | 80914 |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 35.15 | 0.50 | 40 | 0.1199 | 87.6 | 86 | 114 | 0 | 0 | | |
| Ethylbenzene | 38.3 | 0.50 | 40 | 0.1261 | 95.4 | 85 | 116 | 0 | 0 | | |
| m,p-Xylene | 76.88 | 1.0 | 80 | 0 | 96.1 | 89 | 114 | 0 | 0 | | |
| o-Xylene | 38.41 | 0.50 | 40 | 0.1252 | 95.7 | 86 | 114 | 0 | 0 | | |
| Toluene | 38.67 | 0.50 | 40 | 0.1427 | 96.3 | 87 | 112 | 0 | 0 | | |

| Sample ID | 0404045-007AMS | SampType: | MS | TestCode: | BTEX_W | Units: | µg/L | Prep Date: | | Run ID: | GC-1_040504A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | ZZZZZ | Batch ID: | R5657 | TestNo: | SW8021B | | | Analysis Date: | 5/4/2004 | SeqNo: | 80916 |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 359.1 | 2.5 | 200 | 176.3 | 91.4 | 81 | 116 | 0 | 0 | | |
| Ethylbenzene | 246 | 2.5 | 200 | 39.94 | 103 | 85 | 115 | 0 | 0 | | |
| m,p-Xylene | 545.7 | 5.0 | 400 | 129.5 | 104 | 84 | 117 | 0 | 0 | | |
| o-Xylene | 206.1 | 2.5 | 200 | 5.808 | 100 | 84 | 113 | 0 | 0 | | |
| Toluene | 212.3 | 2.5 | 200 | 2.818 | 105 | 88 | 110 | 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:** Souder, Miller & Associates
**Work Order:** 0404042
**Project:** 5114224; S&K 1

# ANALYTICAL QC SUMMARY REPORT

**TestCode: BTEX_W**

| Sample ID 0404045-007AMSD | SampType: MSD | TestCode: BTEX_W | Units: µg/L | Prep Date: | Run ID: GC-1_040504A |
|---|---|---|---|---|---|
| Client ID: ZZZZZ | Batch ID: R5657 | TestNo: SW8021B | | Analysis Date: 5/4/2004 | SeqNo: 80917 |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 347.6 | 2.5 | 200 | 176.3 | 85.6 | 78 | 111 | 359.1 | 3.26 | 7 | |
| Ethylbenzene | 238.8 | 2.5 | 200 | 39.94 | 99.4 | 82 | 111 | 246 | 2.97 | 6.9 | |
| m,p-Xylene | 530.3 | 5.0 | 400 | 129.5 | 100 | 80 | 113 | 545.7 | 2.86 | 6.8 | |
| o-Xylene | 202.8 | 2.5 | 200 | 5.808 | 98.5 | 83 | 110 | 206.1 | 1.58 | 6.4 | |
| Toluene | 206.2 | 2.5 | 200 | 2.818 | 102 | 84 | 110 | 212.3 | 2.89 | 6.3 | |

| Sample ID CCV1_040504 | SampType: CCV | TestCode: BTEX_W | Units: µg/L | Prep Date: | Run ID: GC-1_040504A |
|---|---|---|---|---|---|
| Client ID: ZZZZZ | Batch ID: R5657 | TestNo: SW8021B | | Analysis Date: 5/4/2004 | SeqNo: 80910 |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 18.17 | 0.50 | 20 | 0 | 90.8 | 85 | 115 | 0 | 0 | | |
| Ethylbenzene | 19.84 | 0.50 | 20 | 0 | 99.2 | 85 | 115 | 0 | 0 | | |
| m,p-Xylene | 39.8 | 1.0 | 40 | 0 | 99.5 | 85 | 115 | 0 | 0 | | |
| o-Xylene | 19.7 | 0.50 | 20 | 0 | 98.5 | 85 | 115 | 0 | 0 | | |
| Toluene | 19.92 | 0.50 | 20 | 0 | 99.6 | 85 | 115 | 0 | 0 | | |

| Sample ID CCV2_040504 | SampType: CCV | TestCode: BTEX_W | Units: µg/L | Prep Date: | Run ID: GC-1_040504A |
|---|---|---|---|---|---|
| Client ID: ZZZZZ | Batch ID: R5657 | TestNo: SW8021B | | Analysis Date: 5/4/2004 | SeqNo: 80911 |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 36.31 | 0.50 | 40 | 0 | 90.8 | 85 | 115 | 0 | 0 | | |
| Ethylbenzene | 40.19 | 0.50 | 40 | 0 | 100 | 85 | 115 | 0 | 0 | | |
| m,p-Xylene | 81.89 | 1.0 | 80 | 0 | 102 | 85 | 115 | 0 | 0 | | |
| o-Xylene | 39.52 | 0.50 | 40 | 0 | 98.8 | 85 | 115 | 0 | 0 | | |
| Toluene | 41.51 | 0.50 | 40 | 0 | 104 | 85 | 115 | 0 | 0 | | |

| Sample ID CCV3_040504 | SampType: CCV | TestCode: BTEX_W | Units: µg/L | Prep Date: | Run ID: GC-1_040504A |
|---|---|---|---|---|---|
| Client ID: ZZZZZ | Batch ID: R5657 | TestNo: SW8021B | | Analysis Date: 5/4/2004 | SeqNo: 80912 |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 17.48 | 0.50 | 20 | 0 | 87.4 | 85 | 115 | 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:** Souder, Miller & Associates
**Work Order:** 0404042
**Project:** 5114224; S&K 1

# ANALYTICAL QC SUMMARY REPORT

**TestCode: BTEX_W**

| Sample ID | CCV3_040504 | SampType: | CCV | TestCode: | BTEX_W | Units: | µg/L | Prep Date: | | Run ID: | GC-1_040504A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | ZZZZZ | Batch ID: | R5657 | TestNo: | SW8021B | | | Analysis Date: | 5/4/2004 | SeqNo: | 80912 |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | 19.59 | 0.50 | 20 | 0 | 98 | 85 | 115 | 0 | 0 | | |
| m,p-Xylene | 39.58 | 1.0 | 40 | 0 | 99 | 85 | 115 | 0 | 0 | | |
| o-Xylene | 19.39 | 0.50 | 20 | 0 | 96.9 | 85 | 115 | 0 | 0 | | |
| Toluene | 19.72 | 0.50 | 20 | 0 | 98.6 | 85 | 115 | 0 | 0 | | |

| Sample ID | CCV5_040504 | SampType: | CCV | TestCode: | BTEX_W | Units: | µg/L | Prep Date: | | Run ID: | GC-1_040504A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | ZZZZZ | Batch ID: | R5657 | TestNo: | SW8021B | | | Analysis Date: | 5/4/2004 | SeqNo: | 80913 |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 37.54 | 0.50 | 40 | 0 | 93.8 | 85 | 115 | 0 | 0 | | |
| Ethylbenzene | 41.08 | 0.50 | 40 | 0 | 103 | 85 | 115 | 0 | 0 | | |
| m,p-Xylene | 83.14 | 1.0 | 80 | 0 | 104 | 85 | 115 | 0 | 0 | | |
| o-Xylene | 40.86 | 0.50 | 40 | 0 | 102 | 85 | 115 | 0 | 0 | | |
| Toluene | 41.53 | 0.50 | 40 | 0 | 104 | 85 | 115 | 0 | 0 | | |

| Sample ID | CCV4_040504 | SampType: | CCV | TestCode: | BTEX_W | Units: | µg/L | Prep Date: | | Run ID: | GC-1_040504A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | ZZZZZ | Batch ID: | R5657 | TestNo: | SW8021B | | | Analysis Date: | 5/4/2004 | SeqNo: | 80918 |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 37.12 | 0.50 | 40 | 0 | 92.8 | 85 | 115 | 0 | 0 | | |
| Ethylbenzene | 40.61 | 0.50 | 40 | 0 | 102 | 85 | 115 | 0 | 0 | | |
| m,p-Xylene | 81.98 | 1.0 | 80 | 0 | 102 | 85 | 115 | 0 | 0 | | |
| o-Xylene | 40.65 | 0.50 | 40 | 0 | 102 | 85 | 115 | 0 | 0 | | |
| Toluene | 40.93 | 0.50 | 40 | 0 | 102 | 85 | 115 | 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

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**Date:** 10-May-04

**CLIENT:** Souder, Miller & Associates
**Work Order:** 0404042
**Project:** 5114224; S&K 1
**Test No:** SW8021B **Matrix:** W

# QC SUMMARY REPORT
# SURROGATE RECOVERIES

| Sample ID | 14FBZ | 4BCBZ | FLBZ | | | | |
|---|---|---|---|---|---|---|---|
| 0404042-001A | 93.1 | 119 | 94.2 | | | | |
| 0404042-002A | 103 | 125 | 99.8 | | | | |
| 0404045-007AMS | 104 | 122 | 97.3 | | | | |
| 0404045-007AMSD | 105 | 122 | 97.7 | | | | |
| CCV1_040504 | 102 | 127 | 98.7 | | | | |
| CCV2_040504 | 102 | 133 | 98.0 | | | | |
| CCV3_040504 | 103 | 118 | 97.4 | | | | |
| CCV4_040504 | 102 | 124 | 98.3 | | | | |
| CCV5_040504 | 102 | 123 | 98.5 | | | | |
| LCS1_040504 | 102 | 125 | 99.0 | | | | |
| MB_040504 | 103 | 124 | 99.7 | | | | |

| Acronym | | Surrogate | QC Limits |
|---|---|---|---|
| 14FBZ | = | 1,4-Difluorobenzene | 87-124 |
| 4BCBZ | = | 4-Bromochlorobenzene | 75-139 |
| FLBZ | = | Fluorobenzene | 86-119 |

*** Surrogate recovery outside acceptance limits**

# CHAIN OF CUSTODY RECORD

4061

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(for life's sake)

612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499
Phone: (505) 327-1072 • Fax: (505) 327-1496

Date _____ Page _____ of _____

**REPORT RESULTS TO:**

Report to: J. HARSTAD
Company:
Address:
City:
Phone: Fax: Email:

**SEND INVOICE TO:**

PO No.: Job No.: 5114224
Name:
Company:
Address:
City:

Turnaround Time:
10 days (normal) V
24-48 hours (100%)
3-5 days (50%)

Sample Integrity
Intact
On Ice X

Subcontract
Yes
No X

Sampling Location:
SJ K 1

NUMBER OF CONTAINERS:

Analysis Requested

| Sample Identification | Sample Date | Sample Time | Matrix | Pres. | # Containers | BTEX | | | | | | | | Lab ID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SB 12 | 4/26/11 | 1045 | $H_2O$ | HCL | 2 | X | | | | | | | | 1104261212-001A |
| TRIP BLANK | " | 0600 | " | " | 2 | X | | | | | | | | " -002A |
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| | | | |
|---|---|---|---|
| Relinquished by: | Date/Time: 4/26/11 1110 | Received by: | Date/Time: |
| Relinquished by: | Date/Time: | Received by: | Date/Time: |
| Relinquished by: | Date/Time: | Received by: | Date/Time: |

Comments:

**DISTRIBUTION** WHITE - Lab • YELLOW - Client • PINK - Courier