# 3R - 071

# 2008 AGWMR

# DEC 2009

# 2008 ANNUAL GROUNDWATER MONITORING REPORT

# CONOCOPHILLIPS COMPANY

# JOHNSTON FEDERAL NO. 4 METERING STATION SAN JUAN COUNTY, NEW MEXICO

OCD # 3RP-71

API 30-045-10130

**Prepared for:**

ConocoPhillips

Risk Management and Remediation
420 South Keeler Avenue
Bartlesville, OK 74004

**Prepared by:**

TETRA TECH, INC.

6121 Indian School Rd. NE, Suite 200
Albuquerque, NM 87110
Tetra Tech Project No. 1158690090

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# ANNUAL GROUNDWATER MONITORING REPORT JOHNSTON FEDERAL NO. 4 METERING STATION, SAN JUAN COUNTY, NEW MEXICO

## 1.0 INTRODUCTION

This report discusses the installation of three groundwater monitoring wells by Tetra Tech, Inc. (Tetra Tech) in August 2008 at the ConocoPhillips Company Johnston Federal # 4 Metering Station (Site); and presents the results of quarterly groundwater monitoring events conducted at the Site by Tetra Tech in April, July, and October 2008 and January 2009. The Site is located on Bureau of Land Management (BLM) land, approximately 13 miles east-northeast of Aztec, San Juan County, New Mexico in Unit Letter M, Section 27, Township 31N, Range 9W (**Figure 1**). The Johnston Federal No. 4 wellhead, API # 30-045-10130, is located approximately one-half mile to the southwest of the metering station. A Site detail map is included as **Figure 2.**

### 1.1 Site Background

A historical timeline for the Site is presented in **Table 1**, and is discussed in more detail below.

Burlington Resources (Burlington) conducted initial site assessments of two Burlington production pits in August 1998. Soil from the separator pit was collected and analyzed for total petroleum hydrocarbons (TPH). The concentration of TPH in separator pit soils was found to be below New Mexico Oil Conservation Division (OCD) recommended action levels for this constituent, and the pit was subsequently granted a closed status by OCD. Soil from the tank drain pit was collected and analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) and for TPH. Concentrations of these constituents were found to be above OCD recommended action levels. Excavation of approximately 3,055 cubic yards of hydrocarbon-impacted soil occurred in December 1998. Once complete, the excavation was backfilled with clean fill material, and this pit was closed by OCD. In May 1999, a groundwater monitoring well was installed at the Site to a depth of 50 feet below ground surface (bgs); the screened interval was placed from 35 to 50 feet bgs and groundwater was encountered at a depth of approximately 43 feet bgs. From May 1999 to August 2008, the existing monitor well network consisted of this single Monitor Well MW-1, which was sampled on a quarterly basis by Burlington Resources (Burlington Resources was acquired by ConocoPhillips in March of 2006). There are three additional monitoring wells on-site that are owned by El Paso Natural Gas that are not sampled by Tetra Tech, and the monitoring schedule of these wells is unknown. In August 2008, three additional groundwater monitoring wells were installed by WDC Exploration and Drilling of Peralta, NM (WDC), under the supervision of Tetra Tech; these monitoring wells were first sampled on October 24, 2008, and have been incorporated into the monitoring schedule with MW-1.

### 1.2 Groundwater Monitoring Well Installation

On August 14, 15 and 16, 2008, WDC installed groundwater Monitoring Wells MW-2, MW-3 and MW-4

under the supervision of Tetra Tech. All wells were drilled using a CME-85 drill rig, hollow stem augers, and split-spoon sampling techniques; 20 feet of .010 polyvinyl chloride (PVC) slotted screening was placed in each well. MW-2 was installed on August 16, 2008 to a total depth of 65.5 feet bgs. The depth to water was recorded at 43.10 bgs and the screened interval was placed from 41.5 to 61.5 feet bgs. MW-3 was installed on August 15, 2008 to a total depth of 59 feet bgs. The screened interval was placed from 35 to 55 feet bgs and depth to water was recorded at 43.91 feet bgs in October 2008. MW-4 was installed on August 15, 2008 to a total depth of 61 feet bgs and the depth to water was recorded at 43.58 feet bgs. The screened interval for MW-4 was placed from 37 to 57 feet bgs. Wells were constructed using 2-inch PVC casing, and were all flush-mount completions set in concrete. After installation, each monitoring well was developed using a 1.5-inch diameter, polyethylene disposable bailer. Approximately 80 gallons of water was purged from each well and was disposed of in the on-site produced water tank. Soil boring logs and well completion forms are included as **Appendix A**. A generalized geologic cross section for the Site is presented in **Figure 3**.

Soil samples were obtained from MW-2, MW-3 and MW-4 during soil boring activities from depths of 58 to 59.5 feet bgs; 57 to 58.5 feet bgs; and from 53 to 54.5 feet bgs, respectively. Each soil sample was analyzed for diesel range organics (DRO) and gasoline range organics (GRO) by Environmental Protection Agency (EPA) Method 8015B; total mercury by EPA Method 7471A; total metals by EPA Methods 6010B and 6020; semivolatile organic compounds (SVOCs) by EPA Method 8270C; and volatile organic compounds (VOCs) by EPA Method 8260B. None of the analytes were detected in concentrations above OCD recommended action levels. Results of the soil analysis are shown in **Table 2** and **Appendix B**.

# 2.0 MONITORING SUMMARY AND SAMPLING METHODOLOGY / RESULTS

## 2.1 Monitoring Summary

Quarterly groundwater sampling was conducted in April, July, and October 2008 and January 2009. Groundwater samples were collected from Monitoring Well MW-1 during each of the four sampling events. During November 2007 and January 2008, one of the El Paso Natural Gas monitoring wells down-gradient of the former excavation area on site was sampled. The first quarter of groundwater sampling of ConocoPhillips Monitoring Well MW-1 was conducted in April of 2008, the first quarter of 2008 groundwater sampling at the Site. Groundwater Monitoring Wells MW-2, MW-3 and MW-4 were installed in August 2008, and groundwater samples were obtained from these wells in October 2008 and January 2009. Prior to sampling, depth to groundwater in each well was determined, and results are displayed in **Table 3**.

The casings for Monitoring Wells MW-1, MW-2, MW-3, and MW-4 were surveyed in April 2009, with the top of casing for MW-1 assigned an arbitrary reference elevation of 100 feet above mean sea level (amsl). The depth to groundwater in each of the Site wells was also recorded during the April 2009 survey. Due to anomalous depth to water data obtained from MW-3 between the October 2008 and January 2009 sampling events, groundwater elevation maps have been prepared for the January 2009 sampling event and for the

data acquired in April 2009. The data is displayed in **Figures 4** and **5**, respectively. Using these data, it was determined that the groundwater flow direction at the Site is to the east/southeast.

## 2.2 Groundwater Sampling Methodology

During each groundwater monitoring event, Site monitoring wells were purged of at least 3 casing volumes of groundwater using a 1.5-inch diameter, polyvinyl chloride disposable bailer. While bailing each well, groundwater parameter data including temperature, pH, conductivity, total dissolved solids (TDS), oxidation-reduction potential (ORP) and dissolved oxygen (DO) were collected using a YSI 556 multi-parameter sonde and was recorded on a Tetra Tech Water Sampling Field Form (**Appendix C**). Collected groundwater samples were placed in laboratory prepared bottles, packed on ice, and shipped with chain-of-custody documentation. Analysis of all groundwater samples collected during the April, July, and October 2008 and January 2009 groundwater monitoring events were performed by Southern Petroleum Laboratory (SPL) of Houston, Texas. All excess groundwater generated during purging and collecting of analytical samples was disposed of in the on-site produced water tank.

During the April and July 2008 sampling events, groundwater samples collected from MW-1 were analyzed for the presence of BTEX by EPA Method 8260B. Monitoring Wells MW-1, MW-2, MW-3, and MW-4 were sampled during the October 2008 and January 2009 groundwater monitoring events after the installation of MW-2, MW-3 and MW-4 in August 2008. During the October 2008 monitoring event, groundwater samples collected from MW-2, MW-3 and MW-4 were analyzed for diesel range organics (DRO) and gasoline range organics (GRO) by EPA Method 8015B; major ions by EPA Method 300; total metals by EPA Methods 7470A, 6010B, and 6020A; semi-volatile organics (SVOC) by EPA Method 8270C, and volatile organic compounds (VOC) by EPA Method 8260B. Groundwater samples collected from MW-1 during the October 2008 groundwater monitoring event were analyzed for VOCs only. During the January 2009 groundwater monitoring event, groundwater samples collected from MW-1 were analyzed for the suite of constituents described for MW-2, MW-3 and MW-4 during the October 2008 sampling event. Groundwater samples collected from MW-2, MW-3, and MW-4 in January 2009 were analyzed for VOCs only (including BTEX). As of the January 2009 groundwater sampling event, each of the 4 ConocoPhillips groundwater monitoring wells at the Site had been sampled for analyses of a full suite of baseline constituents including DRO/GRO, total metals, major ions, SVOCs and VOCs; results of these analyses are displayed in **Table 4**. As Site closure through OCD is dependent upon a decrease in BTEX concentrations over time, Tetra Tech has prepared a historical analytical results table for BTEX in Site wells from May 1999 to January 2009 (**Table 5**).

## 2.3 Groundwater Sampling Analytical Results

The New Mexico Water Quality Control Commission (NMWQCC) mandates that groundwater quality in New Mexico be protected, and has issued groundwater quality standards in Title 20, Chapter 6, Part 2, Section 3103 of the New Mexico Administrative Code (20.6.2.3103 NMAC). Groundwater quality standards have been set for the protection of human health, domestic water supply, and irrigation use. Exceedences of NMWQCC groundwater quality standards in Site monitoring wells are discussed below.

- **Monitoring Well MW-1**
  - The NMWQCC human health groundwater quality standard for benzene is 10 micrograms per liter (µg/L); groundwater collected from Monitoring Well MW-1 was found to contain benzene in concentrations ranging from 6,000 µg/L in October 2008 to 7,100 µg/L in July 2008.
  - The NMWQCC human health groundwater quality standard for toluene is 450 µg/L; groundwater collected from Monitoring Well MW-1 was found to contain toluene in concentrations ranging from 1,800 µg/L in April 2008 to 2,200 µg/L in July 2008 and January 2009.
  - The NMWQCC human health groundwater quality standard for total xylenes is 620 µg/L; groundwater collected from Monitoring Well MW-1 was found to contain total xylenes in concentrations ranging from 8,600 µg/L in April 2008 to 14,500 µg/L in January 2009.
  - The NMWQCC human health groundwater quality standard for polycyclic aromatic hydrocarbons (PAHs), defined by the NMWQCC as the sum of total naphthalene plus monomethylnaphthalene, is 30 µg/L; groundwater collected from Monitoring Well MW-1 was found to contain PAHs in concentrations ranging from 44 µg/L (naphthalene) in October 2008 to 73 µg/L (sum of naphthalene and 2-methylnaphthalene) in January 2009.
- **Monitoring Well MW-2**
  - The NMWQCC domestic water supply groundwater quality standard for sulfate is 600 mg/L; groundwater collected from Monitoring Well MW-2 was found to contain sulfate at a concentration of 974 mg/L in October 2008.
  - BTEX was not detected in MW-2.
- **Monitoring Well MW-3**
  - Groundwater collected from Monitoring Well MW-3 was found to contain sulfate (NMWQCC groundwater quality standard = 600 mg/L) at a concentration of 714 mg/L in October 2008.
  - Benzene (NMWQCC groundwater quality standard = 10 µg/L) was detected in MW-3 at concentrations of 20 µg/L and 12 µg/L in October 2008 and January 2009, respectively.
- **Monitoring Well MW-4**
  - Groundwater collected from this well in October 2008 was found to contain sulfate (NMWQCC groundwater quality standard = 600 mg/L) at a concentration of 678 mg/L.
  - Benzene (NMWQCC groundwater quality standard = 10 µg/L) was detected in MW-4 at concentrations of 24 µg/L and 110 µg/L in October 2008 and January 2009, respectively.

The corresponding laboratory analysis reports for the 2008 sampling period, including quality control summaries, are included in **Appendix D**. BTEX concentration maps for each quarter of groundwater quality monitoring at the Site are included as **Figures 6** through **9**.

## 3.0 CONCLUSIONS AND RECOMMENDATIONS

Tetra Tech confirmed the location of the ConocoPhillips Monitoring Well MW-1 and installed 3 additional groundwater monitoring wells (MW-2, MW-3 and MW-4) at the Site. These additional groundwater monitoring wells have been incorporated into an annual monitoring schedule with MW-1. The next groundwater monitoring event at the Site is scheduled for September 2009. Previous investigations conducted for OCD from 1999 through 2006 by Burlington Resources revealed a groundwater flow direction to the north. However, Tetra Tech has re-surveyed all Site wells and has confirmed an east/southeast groundwater flow direction. The groundwater flow direction at the Site will continue to be monitored, and any changes will be reported accordingly.

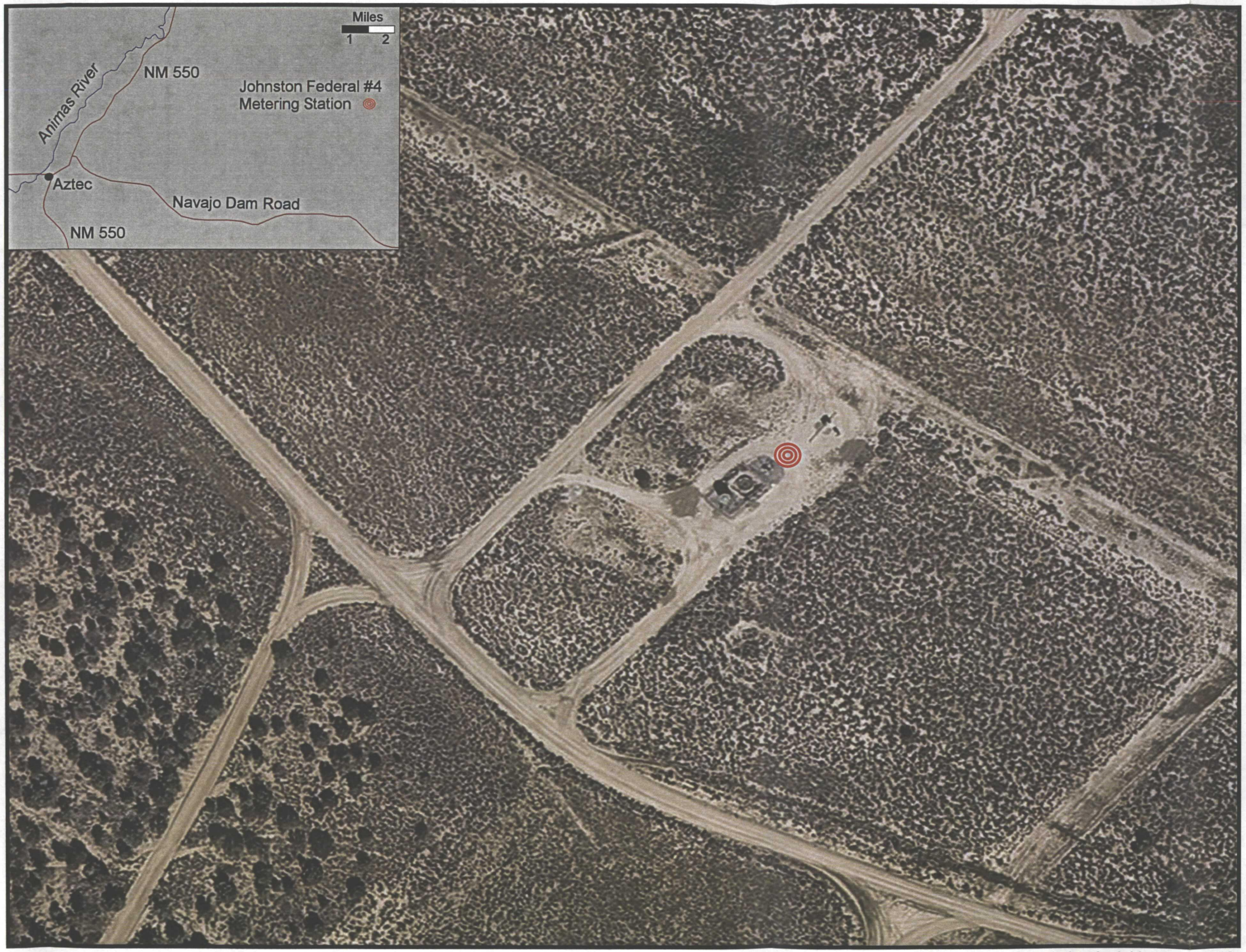
As a result of the full suite of analyses conducted on all groundwater monitoring wells at the Site (DRO/GRO, total metals, major ions, SVOCs and VOCs) during 2008, continued groundwater quality monitoring beyond BTEX analysis is warranted. Concentrations of sulfate were detected above NMWQCC groundwater quality standards in Site Monitoring Wells MW-2, MW-3 and MW-4. Total metals concentrations of iron and manganese were also detected at various concentrations in all Site monitoring wells. In order to determine if there are actual exceedences of iron and manganese at the Site, dissolved metals analysis will be performed for these two constituents. Tetra Tech recommends that sulfate, dissolved iron, and dissolved manganese be incorporated into the annual monitoring program for all Site groundwater monitoring wells during the September 2009 annual sampling event. If sulfate, dissolved iron or dissolved manganese are found to be below NMWQCC groundwater quality standards during the 2009 annual sampling event, sampling of these constituents will be discontinued.

PAHs have been detected above NMWQCC groundwater quality standards in MW-1, but concentrations of PAHs in the other 3 groundwater monitoring wells at the Site were not found above SPL method detection limits (MDLs). Tetra Tech recommends sampling of naphthalene in all site monitoring wells in order to more closely monitor the possible movement of PAHs at the Site.

The next groundwater sampling event at the Site will take place during September of 2009 and will include analysis of BTEX, naphthalene, dissolved iron, dissolved manganese and sulfate in all four ConocoPhillips monitoring wells

Please contact Kelly Blanchard at 505-237-8440 or kelly.blanchard@tetratech.com if you have any questions or require additional information.

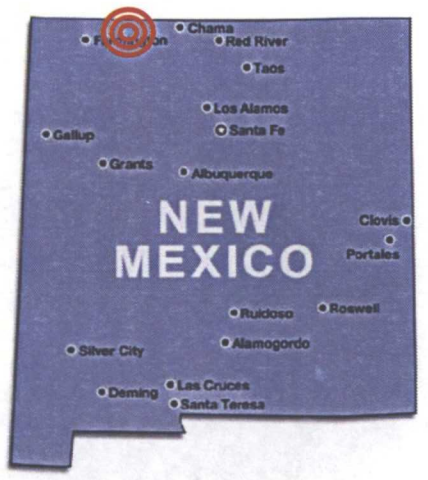
# FIGURES




ConocoPhillips - High Resolution Aerial Imagery 2008

**FIGURE 1.**

Site Location Map
ConocoPhillips Company
Johnston Federal No. 4
Metering Station
Aztec, NM




Approximate ConocoPhillips Company Johnston Federal No. 4 Metering Station site location

Latitude = 36.862661 deg N
Longitude = -107.772342 deg W

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TETRA TECH, INC.

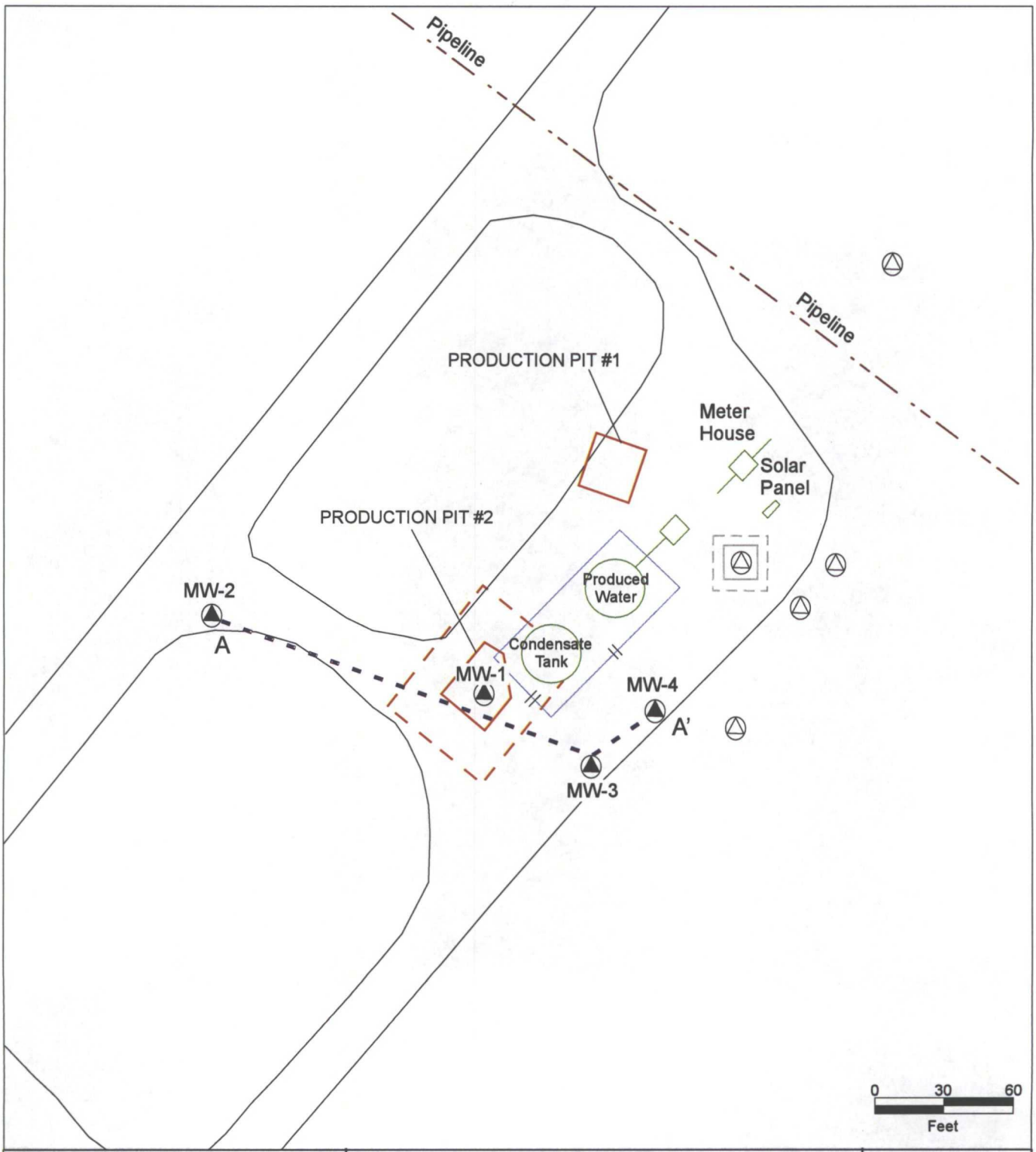


**FIGURE 2:**
**SITE LAYOUT MAP**
CONOCOPHILLIPS COMPANY
JOHNSTON FEDERAL No. 4
METERING STATION
Sec 27, T31N, R09W
Aztec, New Mexico

**LEGEND**

- MONITORING WELL
- EL PASO MONITORING WELL
- FORMER PRODUCTION PIT
- APPROXIMATE EXCAVATION LOCATION
- FORMER El PASO DEHYDRATOR PIT
- APPROXIMATE EL PASO EXCAVATION LOCATION
- GEOLOGIC CROSS SECTION A to A'
- EQUIPMENT
- BERM

N

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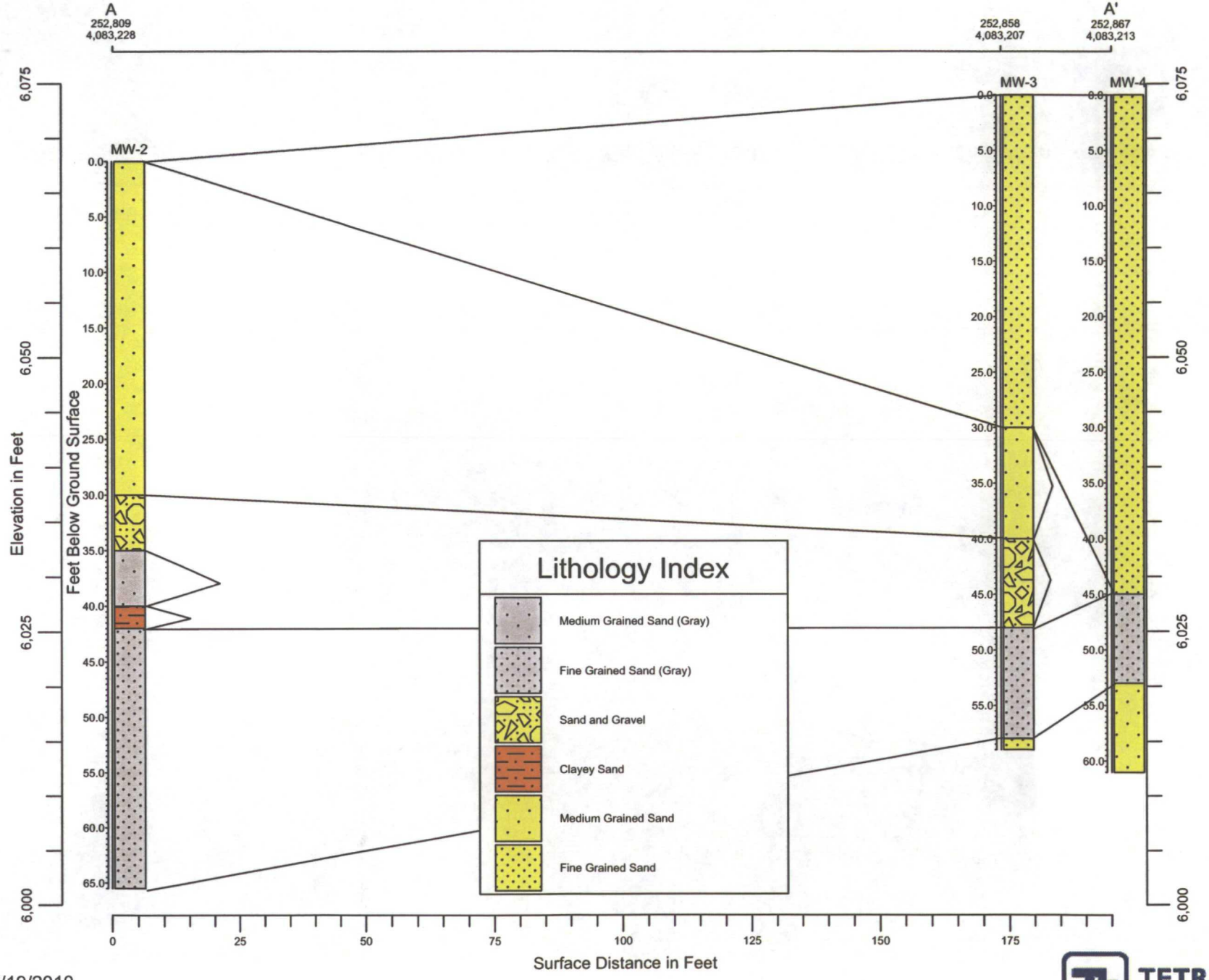
Figure 3.
Johnston Federal No. 4 - Cross-Section A-A'




5/19/2010

TETRA TECH

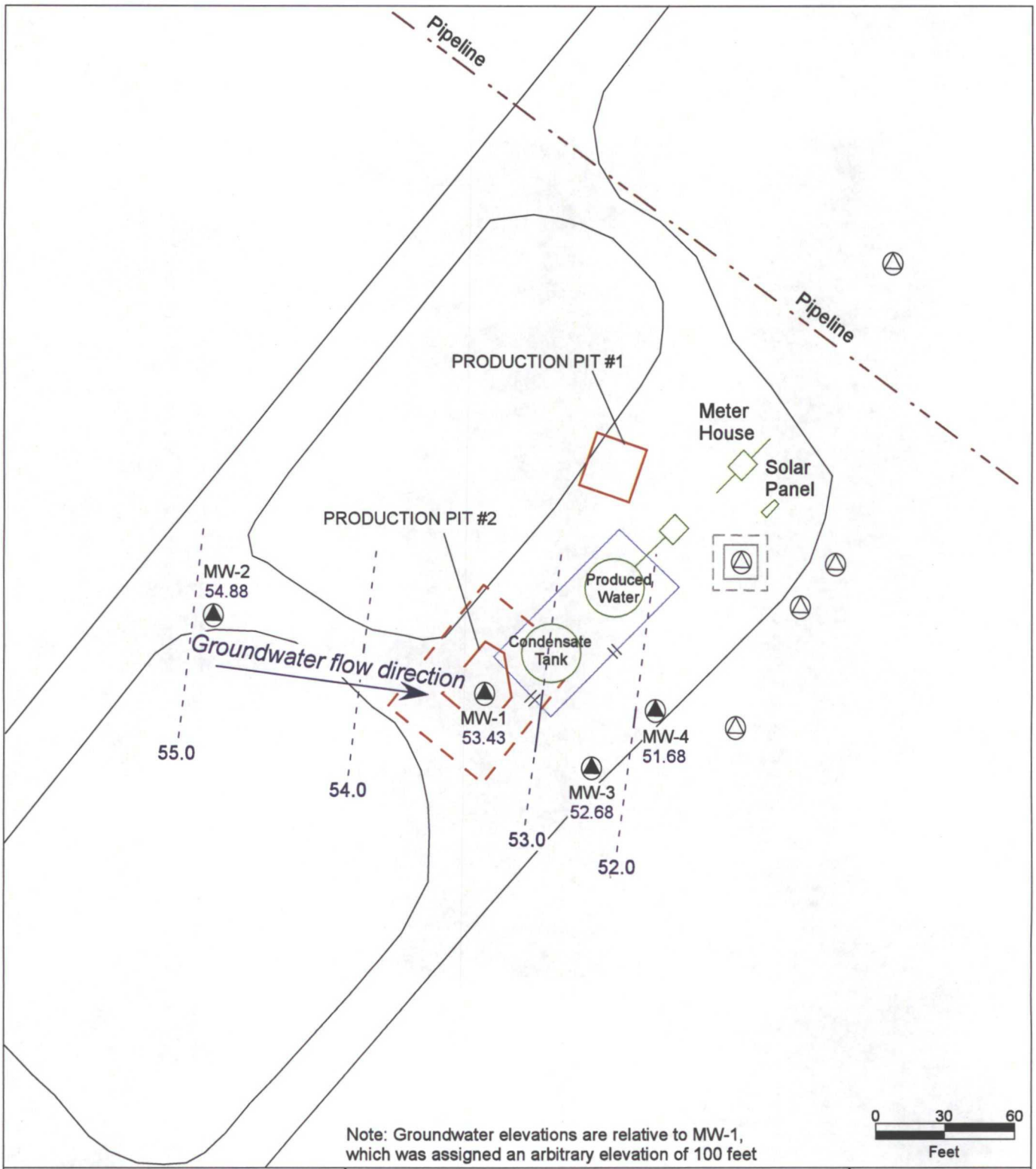



**FIGURE 4:**
**Groundwater Elevation Map - January 2009**
CONOCOPHILLIPS COMPANY
JOHNSTON FEDERAL No. 4
METERING STATION
Sec 27, T31N, R09W
Aztec, New Mexico

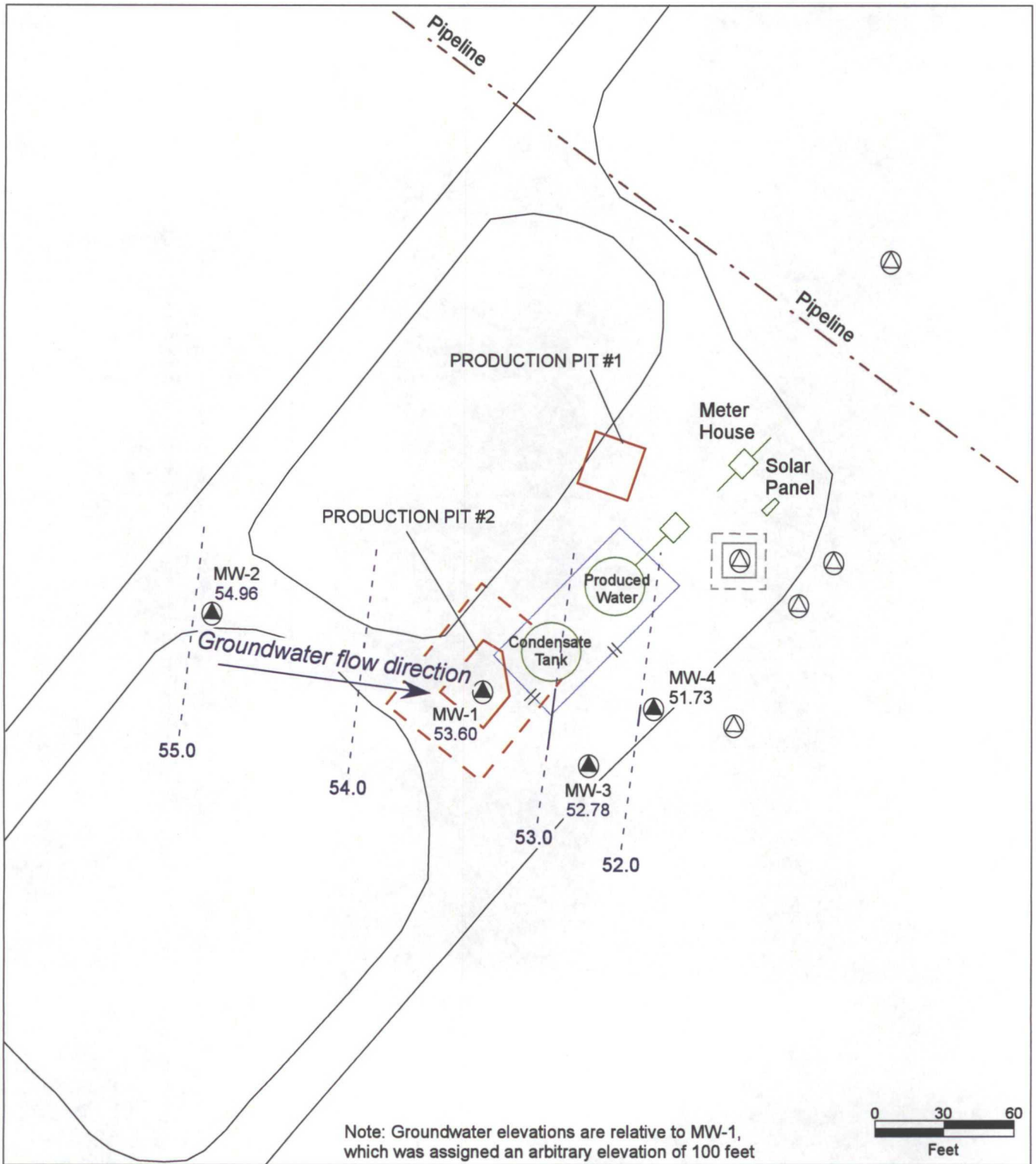



**FIGURE 5:**
**Groundwater Elevation Map - April 2009**
CONOCOPHILLIPS COMPANY
JOHNSTON FEDERAL No. 4
METERING STATION
Sec 27, T31N, R09W
Aztec, New Mexico

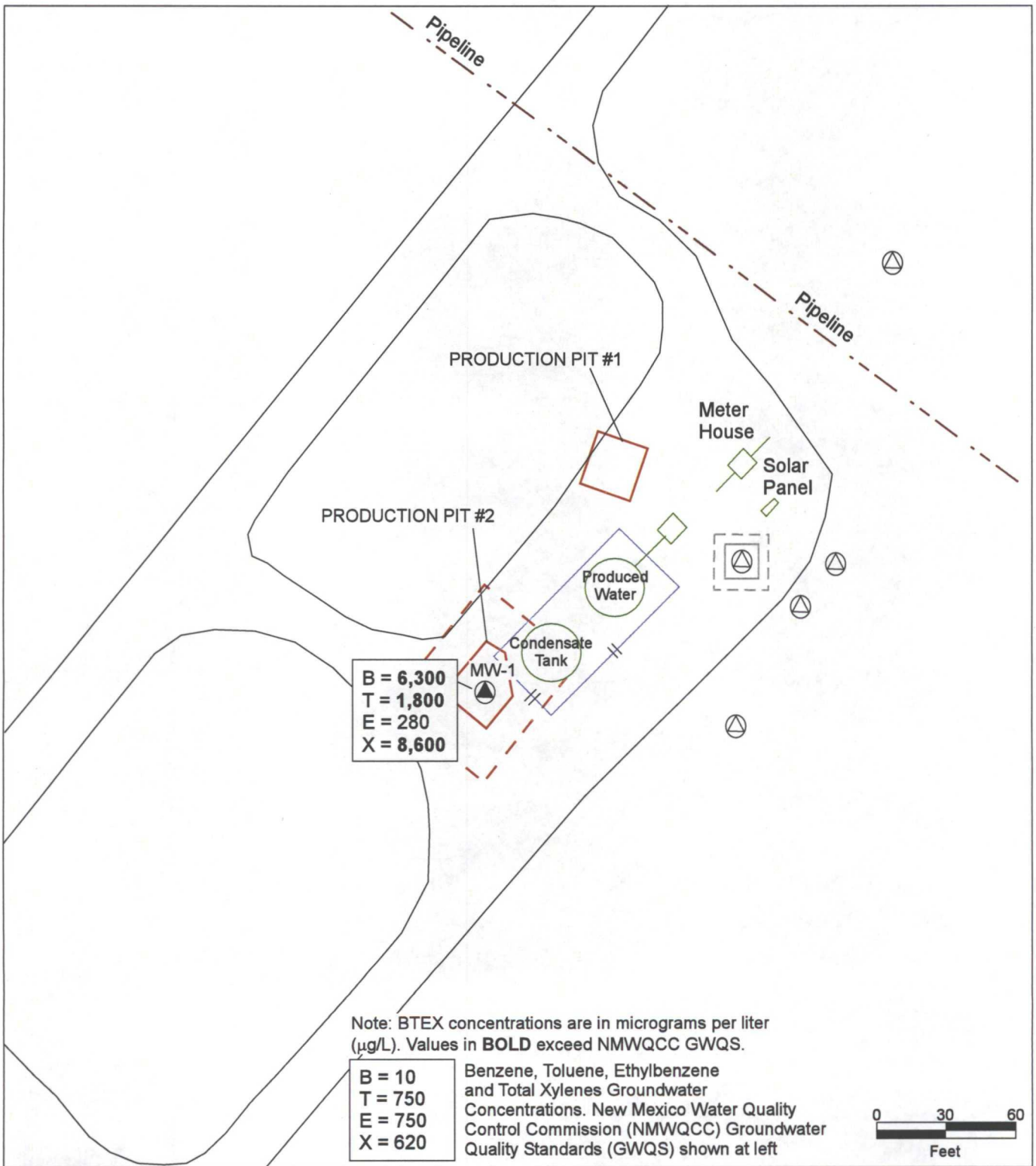



**FIGURE 6:**
**BTEX Concentration Map**
**April 2008**
CONOCOPHILLIPS COMPANY
JOHNSTON FEDERAL No. 4
METERING STATION
Sec 27, T31N, R09W
Aztec, New Mexico

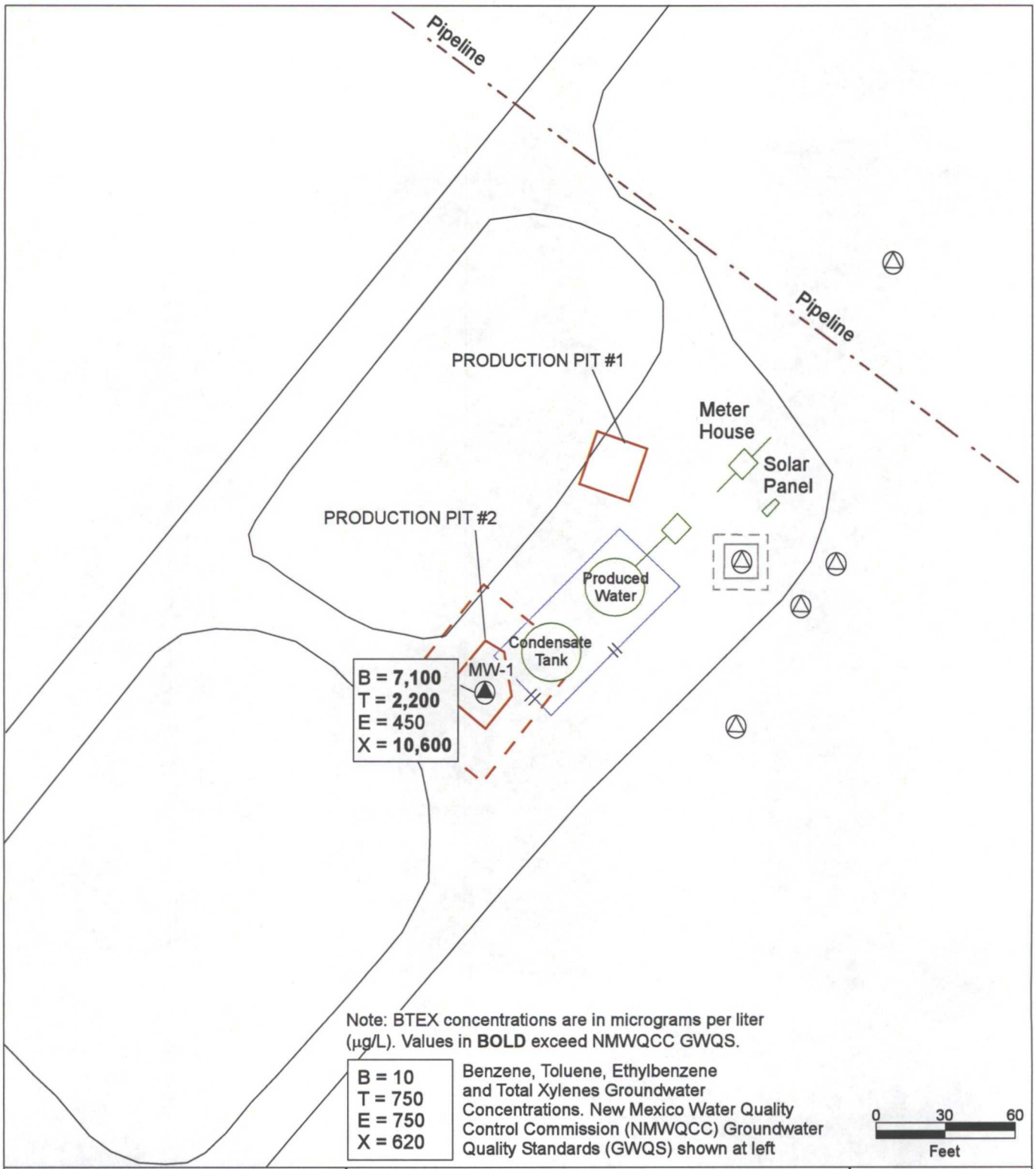



**FIGURE 7:**
**BTEX Concentration Map**
**July 2008**
CONOCOPHILLIPS COMPANY
JOHNSTON FEDERAL No. 4
METERING STATION
Sec 27, T31N, R09W
Aztec, New Mexico

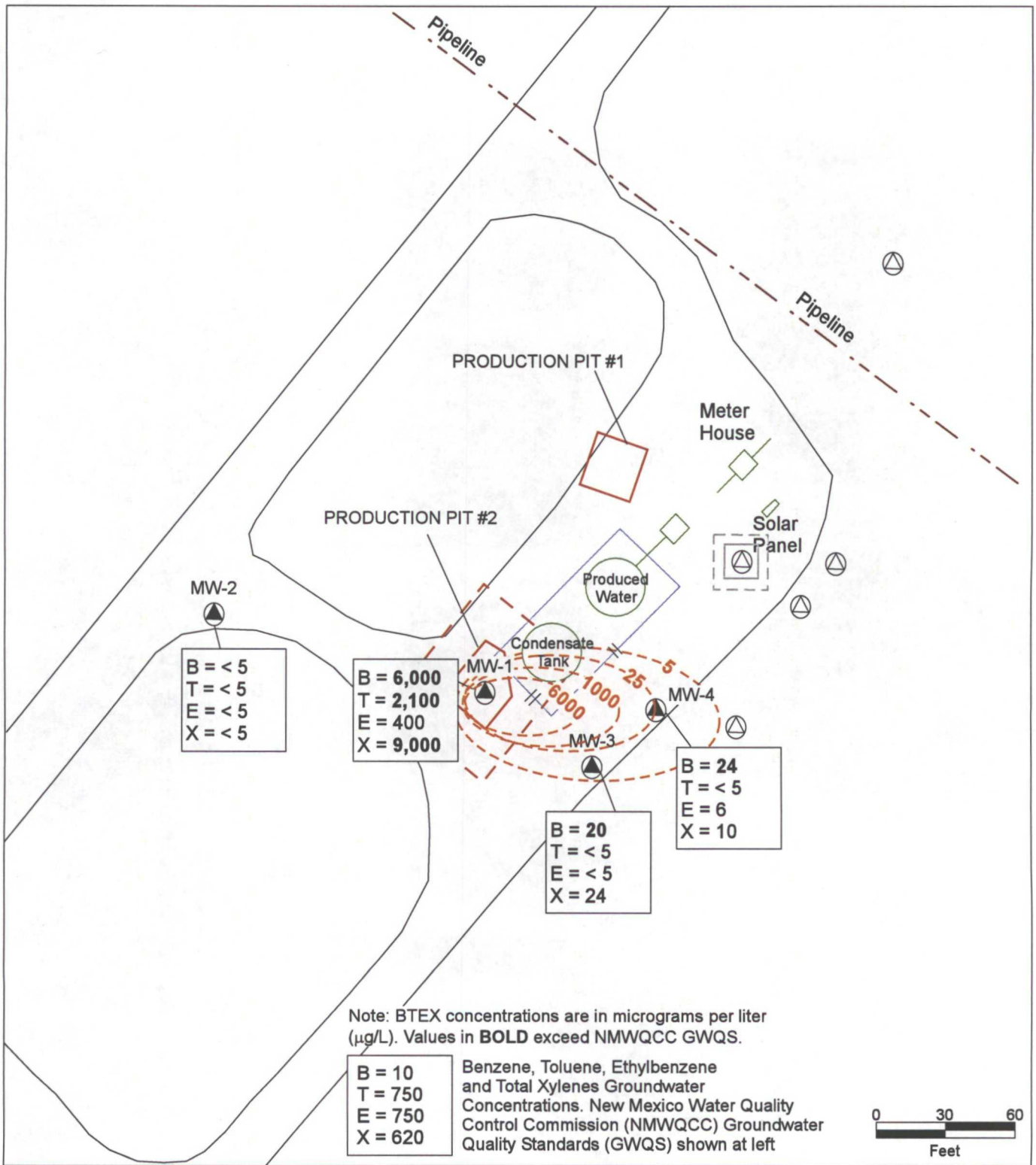



**FIGURE 8:**
**BTEX Concentration Map**
**October 2008**
CONOCOPHILLIPS COMPANY
JOHNSTON FEDERAL No. 4
METERING STATION
Sec 27, T31N, R09W
Aztec, New Mexico

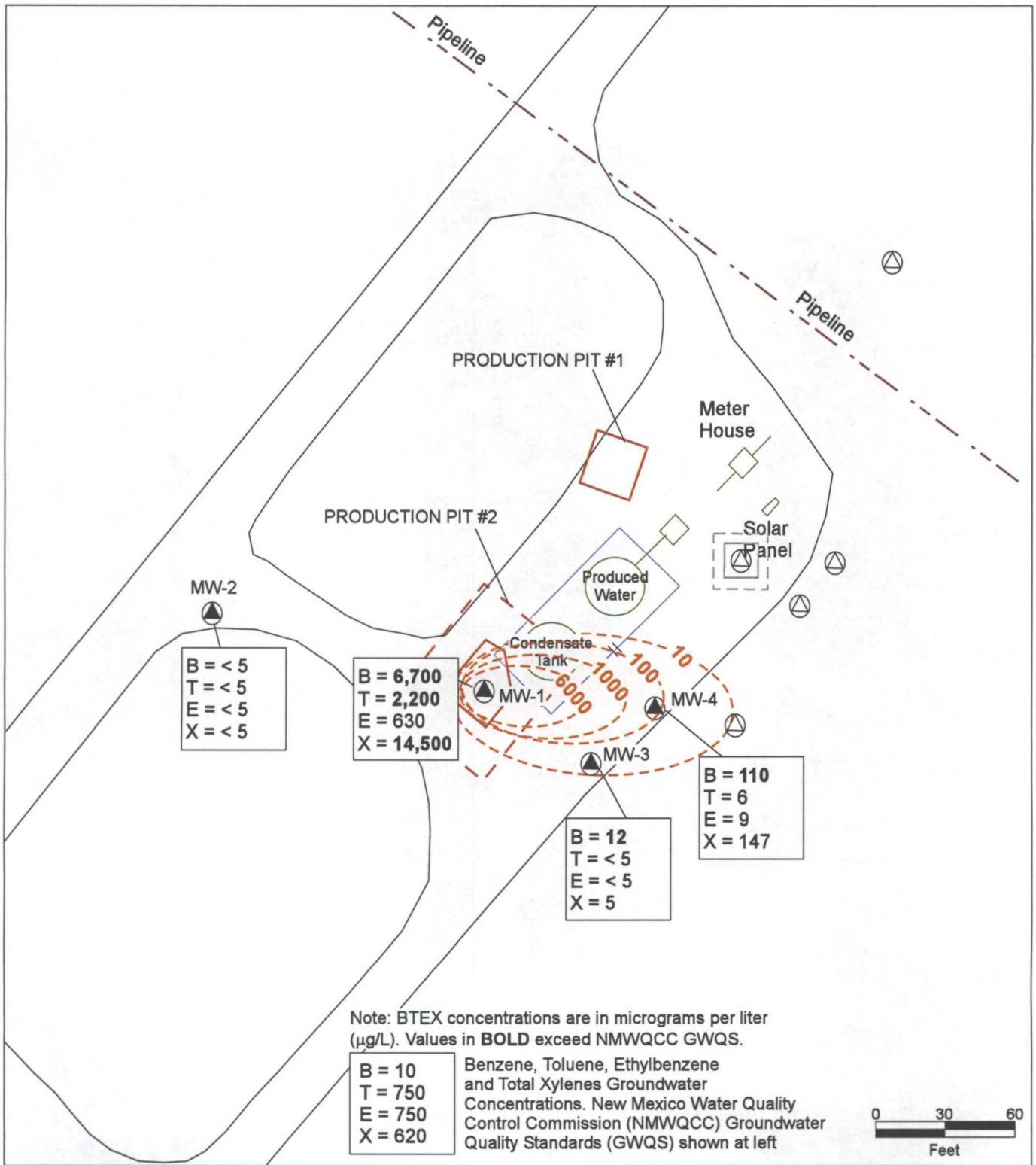



**FIGURE 9:**
**BTEX Concentration Map**
**January 2009**
CONOCOPHILLIPS COMPANY
JOHNSTON FEDERAL No. 4
METERING STATION
Sec 27, T31N, R09W
Aztec, New Mexico

**LEGEND**

- MONITORING WELL
- EL PASO MONITORING WELL
- FORMER PRODUCTION PIT
- APPROXIMATE EXCAVATION LOCATION
- FORMER El PASO DEHYDRATOR PIT
- APPROXIMATE EL PASO EXCAVATION LOCATION
- BENZENE CONCENTRATION CONTOUR
- EQUIPMENT
- BERM

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# TABLES

Johnston Federal No. 4 Metering Station
Table 1 - Site History Timeline

| Date/Time Period | Event/Action | Description/Comments |
|---|---|---|
| August 1952 | Well Spudded | Well was spudded by Anderson-Prichard Oil Corp. on August 21, 1952. |
| April 1961 | Transfer of Well Ownership | Ownership of the well transferred from Anderson-Prichard Oil Corp. to Union Texas Natural Gas Corporation on April 26, 1961. |
| September 1971 | Transfer of Well Ownership | Meridian Oil Inc. (a wholly-owned subsidiary of Burlington Resources) took over operation of well from Union Texas Petroleum Corp. on September 17, 1991. |
| August 1994 | Initial Site Assesment | El Paso Energy conducted a site assessment of a former unlined pit near the metering station in August of 1994. |
| September 1994 | Pit Excavation | El Paso Energy excavated ~60 cy of soil from their former unlined pit in September 1994. |
| August 1995 | Monitoring Well Installation | El Paso contracted Philip Environmental Services Corp. to install a monitor well in the vicinity of their former pit on August 9, 1995. |
| December 1995 | Monitoring Well Installation | El Paso contracted Philip Env. Svcs. to install two downgradient MW's between December 12 and 15, 1995. |
| August 1997 | Product Removal | El Paso Energy commenced product removal from their MW-1 on August 26, 1997. |
| September 1997 | Piezometer Installation | El Paso contracted Philip Services to install 3 temporary piezometers on September 15, 1997. |
| July 1998 | NMOCD Communication With Site Operators | New Mexico Oil Conservation Division (NMOCD) issued response letter to El Paso Field Services (EPFS) on July 8, 1998, indicating that they would be sending letters to the operators of the sites (including Burlington Resources) and that EPFS should work cooperatively with the operators on investigation and remediation activities. |
| July 1998 | NMOCD Requests Groundwater Investigation by Burlington Resources | NMOCD issued letter to Burlington Resources on July 9, 1998, references work done at the site by EPFS and requires Burlington Resources to immediately implement their previously approved pit closure plan. The letter also requires BR to submit a comprehensive GW investigation and remediation plan for all pit closure sites in the SJB that encounter GW. |
| August 1998 | Burlington Resources Granted Closure of Pit #1 | Burlington Resources sampled Pit #1 on August 10, 1998 and laboratory analytical results indicated a clean closure was warranted. |
| August 1998 | Initial Site Assessment | Initial site assessment conducted on the site separator pit. Soil from this area was collected and analyzed for total petroleum hydrocarbons (TPH) and was found to contain TPH below NMOCD recommended action levels. The pit was subsequently granted closed status by NMOCD. |
| August 1998 | Initial Site Assessment | Initial site assessment conducted on the tank drain pit. Soil from this area was collected and analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) and for TPH. Concentrations of these constituents were found to be above NMOCD recommended action levels. |
| December 1998 | Pit Excavation | Burlington Resources excavated ~3,055 CY of hydrocarbon-impacted soil from Pit #2 (58 ft x 45 ft x 30 ft deep), starting on December 17, 1998. The excavation extended to ~30 ft bgs (practical extent). The bottom of the excavation was sampled on December 28, 1998. |
| May 1999 | Monitoring Well Installation | Monitor Well MW-1 installed to a depth of 50 feet below ground surface (bgs); the screened interval was placed from 35 to 50 feet bgs, and was installed in the center of the pit #2. Burlington Resources begins monitoring MW-1 on a quarterly basis. |

Johnston Federal No. 4 Metering Station
Table 1 - Site History Timeline

| Date/Time Period | Event/Action | Description/Comments |
|---|---|---|
| June 1999 | Confirmation of Groundwater Impacts | Laboratory analysis of groundwater from MW-1 shows levels of benzene, toluene, and total xylenes in excess of New Mexico Water Quality Control Commission (NMWQCC) groundwater quality standards. Burlington Resources notified NMOCD via E-mail on June 1, 1999 |
| July 2001 | NMOCD Communication With Site Operators | 07/18/2001 NMOCD response letter sent to EPFS on July 18, 2001 again urges EPFS to work cooperatively with the operators to investigate and remediate contaminated groundwater. |
| April 2003 | NMOCD Requests Monitoring Well Installation | NMOCD response letter to EPFS sent on April 3, 2003, requires EPFS to install additional monitoring wells to determine the real extent of groundwater contamination. |
| March 2006 | Acquisition of Burlington Resources by ConocoPhilips Company | ConocoPhillips Company acquired Burlington Resources on March 31, 2006. |
| November 2007 and January 2008 | 3rd and 4th Quarter 2007 Groundwater Monitoring | Johnston Federal No. 4 Monitoring Station groundwater sampled during Nov. 2007 and Jan. 2008 by Tetra Tech. |
| March 2008 | Reporting | 2007 Annual Groundwater Monitoring Report submitted to NMOCD. |
| March 2008 | Groundwater Monitoring | Tetra Tech conducts quarterly groundwater monitoring at the site for BTEX. |
| April 2008 | NMOCD Requests Further Investigation | NMOCD indicates additional investigation and sampling is necessary for closure consideration during a meeting with Glenn Von Gonten. |
| April 2008 | 1st quarter 2008 Groundwater Monitoring | Tetra Tech conducts quarterly groundwater monitoring at the site for BTEX in MW-1 on April 30, 2008. Note: Prior to this date, however, the location of MW-1 was not clear and the wrong well was subsequently sampled. This was the first quarter that ConocoPhillips MW-1 was sampled. BTEX constituents were found to be above NMWQCC standards in MW-1. |
| July 2008 | 2nd Quarter 2008 Groundwater Monitoring | Tetra Tech conducts quarterly groundwater monitoring at the site for BTEX in MW-1. |
| August 2008 | Groundwater Monitoring Well Installation | Monitoring Wells MW-2, MW-3, and MW-4 installed at the site by WDC. |
| October 2008 | 3rd Quarter 2008 groundwater Monitoring | Tetra Tech conducts quarterly monitoring at the site for MW-1 through MW-4. MW-2, MW-3 and MW-4 groundwater samples are analyzed for baseline parameters including major ions, total metals, semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs) including BTEX, diesel range organics, and gasoline range organics as requested by the NMOCD. In addition, an expanded list (beyond BTEX analysis) of VOCs were included for MW-1. |
| January 2009 | 4th Quarter 2008 groundwater Monitoring | Tetra Tech conducts quarterly monitoring at the site for MW-1 through MW-4. The groundwater sample obtained for MW-1 is analyzed for baseline parameters including major ions, total metals, SVOCs, VOCs, diesel range organics, and gasoline range organics. As of January 2009, baseline parameters have been collected for all 4 groundwater monitoring wells at the site. |

**Table 2. Soil Boring Laboratory Analytical Results**

| Constituent | | | Sample ID (Collected 8/15/2008) | | | |
|---|---|---|---|---|---|---|
| Metals, Total | Method | Units | MW-2 (58 - 59.5) | MW-3 (57 - 58.5) | MW-4 (53 - 54.5) | NMOCD |
| Mercury | SW7471A | mg/kg - dry | < 0.0355 | < 0.0343 | < 0.0377 | NE |
| Aluminum | SW6010B | mg/kg - dry | 8,770 | 11,800 | 8,000 | NE |
| Boron | SW6010B | mg/kg - dry | < 59.2 | < 57.2 | < 62.9 | NE |
| Calcium | SW6010B | mg/kg - dry | 4,570 | 5,960 | 5,030 | NE |
| Iron | SW6010B | mg/kg - dry | 13,600 | 15,800 | 11,000 | NE |
| Magnesium | SW6010B | mg/kg - dry | 3,400 | 3,990 | 2,190 | NE |
| Potassium | SW6010B | mg/kg - dry | 748 | 1,460 | 1,400 | NE |
| Sodium | SW6010B | mg/kg - dry | 669 | 126 | 132 | NE |
| Strontium | SW6010B | mg/kg - dry | 58.5 | 93.2 | 65.5 | NE |
| Tin | SW6010B | mg/kg - dry | < 5.92 | < 5.72 | < 6.29 | NE |
| Titanium | SW6010B | mg/kg - dry | 34 | 45.6 | 48.4 | NE |
| Antimony | SW6020 | mg/kg - dry | < 0.592 | < 0.572 | < 0.629 | NE |
| Arsenic | SW6020 | mg/kg - dry | 6.51 | 0.932 | 2 | NE |
| Barium | SW6020 | mg/kg - dry | 65.2 | 105 | 161 | NE |
| Beryllium | SW6020 | mg/kg - dry | 0.558 | 0.784 | 0.583 | NE |
| Cadmium | SW6020 | mg/kg - dry | < 0.592 | < 0.572 | < 0.629 | NE |
| Chromium | SW6020 | mg/kg - dry | 7.55 | 11.5 | 9.65 | NE |
| Cobalt | SW6020 | mg/kg - dry | 4.8 | 6.1 | 4.12 | NE |
| Copper | SW6020 | mg/kg - dry | 4.43 | 11.5 | 7.26 | NE |
| Lead | SW6020 | mg/kg - dry | 6.47 | 6.89 | 6.43 | NE |
| Manganese | SW6020 | mg/kg - dry | 276 | 258 | 159 | NE |
| Molybdenum | SW6020 | mg/kg - dry | < 0.592 | < 0.572 | < 0.629 | NE |
| Nickel | SW6020 | mg/kg - dry | 6.03 | 7.74 | 5.67 | NE |
| Selenium | SW6020 | mg/kg - dry | < 0.592 | < 0.572 | < 0.629 | NE |
| Silver | SW6020 | mg/kg - dry | < 0.592 | < 0.572 | < 0.629 | NE |
| Thallium | SW6020 | mg/kg - dry | 0.0918 | 0.139 | 0.117 | NE |
| Tungsten | SW6020 | mg/kg - dry | < 0.592 | 2.56 | 3.05 | NE |
| Vanadium | SW6020 | mg/kg - dry | 12.5 | 14 | 11.4 | NE |
| Zinc | SW6020 | mg/kg - dry | 36.1 | 38 | 24.1 | NE |

ConocoPhillips Company Johnston Federal No. 4

| Constituent | | | Sample ID (Collected 8/15/2008) | | | |
|---|---|---|---|---|---|---|
| **SVOCS (detections only)** | **Method** | **Units** | **MW-2 (58 - 59.5)** | **MW-3 (57 - 58.5)** | **MW-4 (53 - 54.5)** | **NMOCD** |
| As listed | 8270C | µg/kg - dry | -- | -- | -- | -- |
| **VOCs (detections and BTEX )** | **Method** | **Units** | **MW-2 (58 - 59.5)** | **MW-3 (57 - 58.5)** | **MW-4 (53 - 54.5)** | **NMOCD** |
| Methylene Chloride | 8260B | µg/kg - dry | 9.5 | 10 | 11 | NE |
| Benzene | 8260B | µg/kg - dry | < 5.9 | < 5.7 | < 6.3 | 10,000 |
| Toluene | 8260B | µg/kg - dry | < 5.9 | < 5.7 | < 6.3 | NE |
| Ethylbenzene | 8260B | µg/kg - dry | < 5.9 | < 5.7 | < 6.3 | NE |
| Total Xylenes | 8260B | µg/kg - dry | < 5.9 | 8 | < 6.3 | NE |
| Total BTEX | -- | µg/kg - dry | < 5.9 | 8 | < 6.3 | 50,000 |
| **Other** | **Method** | **Units** | **MW-2 (58 - 59.5)** | **MW-3 (57 - 58.5)** | **MW-4 (53 - 54.5)** | **NMOCD** |
| Percent Moisture | D2216 | % | 15.6 | 12.6 | 20.5 | NE |
| Diesel Range Organics | SW8015B | mg/kg - dry | < 5.9 | < 5.7 | < 6.3 | NE |
| Gasoline Range Organics | SW8015B | mg/kg - dry | < 0.12 | < 0.11 | 0.18 | NE |

**Notes:**
MW = monitoring well
NMOCD = New Mexico Oil Conservation Division recommended action level
SVOCs = semi-volatile organic compounds
VOCs = volatile organic compounds
mg/kg - dry = milligrams per kilogram, analyzed after residual water removed from the soil
µg/kg - dry = micrograms per kilogram
NE = not established

**Table 3. Monitoring Well Specifications and Groundwater Elevation Table**

| Well ID | Total Depth (ft bgs) | Screen Interval (ft) | *Elevation (ft) (TOC) | Date Measured | Depth to Groundwater (ft below TOC) | Relative Groundwater Elevation |
|---|---|---|---|---|---|---|
| MW-1 | 51.79 | 35.0 - 50.0 | 100 | 5/25/1999 | NM | NM |
| | | | | 9/1/1999 | 47.02 | 52.98 |
| | | | | 12/1/1999 | 46.96 | 53.04 |
| | | | | 1/18/2000 | 44.05 | 55.95 |
| | | | | 5/17/2000 | 46.90 | 53.10 |
| | | | | 9/8/2000 | 46.91 | 53.09 |
| | | | | 12/20/2000 | 46.88 | 53.12 |
| | | | | 3/27/2001 | NM | NM |
| | | | | 6/27/2001 | 47.05 | 52.95 |
| | | | | 9/17/2001 | 46.93 | 53.07 |
| | | | | 12/19/2001 | 46.97 | 53.03 |
| | | | | 3/25/2002 | 46.99 | 53.01 |
| | | | | 6/25/2002 | 47.01 | 52.99 |
| | | | | 9/24/2002 | 46.98 | 53.02 |
| | | | | 12/30/2002 | 47.40 | 52.60 |
| | | | | 3/27/2003 | NM | NM |
| | | | | 6/27/2003 | NM | NM |
| | | | | 10/10/2003 | NM | NM |
| | | | | 12/10/2003 | NM | NM |
| | | | | 3/16/2004 | 47.28 | 52.72 |
| | | | | 6/22/2004 | 47.06 | 52.94 |
| | | | | 9/30/2004 | 47.24 | 52.76 |
| | | | | 12/13/2004 | 47.14 | 52.86 |
| | | | | 3/23/2005 | 46.91 | 53.09 |
| | | | | 6/22/2005 | 46.93 | 53.07 |
| | | | | 10/28/2005 | 46.87 | 53.13 |
| | | | | 12/14/2005 | 46.72 | 53.28 |
| | | | | 3/20/2006 | 46.75 | 53.25 |
| | | | | 6/21/2006 | 46.84 | 53.16 |
| | | | | 10/20/2006 | 46.89 | 53.11 |
| | | | | 12/13/2006 | 46.92 | 53.08 |
| | | | | 11/9/2007 | NM | NM |
| | | | | 1/15/2008 | NM | NM |
| | | | | 4/30/2008 | 46.45 | 53.55 |
| | | | | 7/23/2008 | 46.63 | 53.37 |
| | | | | 10/24/2008 | 46.60 | 53.40 |
| | | | | 1/29/2009 | 46.57 | 53.43 |
| | | | | 4/23/2009 | 46.40 | 53.60 |
| MW-2 | 65.50 | 41.5 - 61.5 | 97.71 | 10/24/2008 | 42.85 | 54.86 |
| | | | | 1/29/2009 | 42.83 | 54.88 |
| | | | | 4/23/2009 | 42.75 | 54.96 |
| MW-3 | 59.00 | 35.0 - 55.0 | 94.65 | 10/24/2008 | 43.91 | 50.74 |
| | | | | 1/29/2009 | 41.97 | 52.68 |
| | | | | 4/23/2009 | 41.87 | 52.78 |
| MW-4 | 61.00 | 37.0 - 57.0 | 94.79 | 10/24/2008 | 43.11 | 51.68 |
| | | | | 1/29/2009 | 43.11 | 51.68 |
| | | | | 4/23/2009 | 43.06 | 51.73 |

ft = Feet

TOC = Top of casing

bgs = below ground surface

NM - Not measured

* Elevation relative to the TOC of MW-1, set at an arbitrary 100 feet

**Table 4. Baseline Groundwater Laboratory Analytical Results**

| Constituent | | | MW-1 | | | MW-2 | | MW-3 | | MW-4 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Ions** | **Method** | **Units** | **10/24/2008** | **Duplicate** | **1/29/2009** | **10/24/2008** | **1/29/2009** | **10/24/2008** | **1/29/2009** | **10/24/2008** | **1/29/2009** | **Duplicate** | **NMWQCC Groundwater Standard** |
| Chloride | E300.0 | mg/L | NA | NA | NA | 15.6 | NA | 11.7 | NA | 14.2 | NA | NA | 250 |
| Fluoride | E300.0 | mg/L | NA | NA | NA | < 2 | NA | < 2 | NA | < 2 | NA | NA | 1.6 |
| Orthophospate (as P) | E300.0 | mg/L | NA | NA | NA | < 5 | NA | < 5 | NA | < 5 | NA | NA | NE |
| Sulfate | E300.0 | mg/L | NA | NA | 315 | **974** | NA | **714** | NA | **678** | NA | NA | 600 |
| Nitrate (as N) | E300.0 | mg/L | NA | NA | < 0.5 | < 0.5 | NA | < 0.5 | NA | < 0.5 | NA | NA | 10 |
| **Metals, Total** | **Method** | **Units** | **10/24/2008** | **Duplicate** | **1/29/2009** | **10/24/2008** | **1/29/2009** | **10/24/2008** | **1/29/2009** | **10/24/2008** | **1/29/2009** | **Duplicate** | **NMWQCC Groundwater Standard** |
| Mercury | SW7470A | mg/L | NA | NA | NA | < 0.0002 | NA | < 0.0002 | NA | < 0.0002 | NA | NA | NE |
| Aluminum | SW6010B | mg/L | NA | NA | 0.109 | 2.09 | NA | 0.381 | NA | 0.893 | NA | NA | NE |
| Boron | SW6010B | mg/L | NA | NA | < 0.1 | < 0.1 | NA | < 0.1 | NA | < 0.1 | NA | NA | NE |
| Calcium | SW6010B | mg/L | NA | NA | 321 | 415 | NA | 406 | NA | 351 | NA | NA | NE |
| Iron | SW6010B | mg/L | NA | NA | 0.347 | 2.08 | NA | 0.542 | NA | 1.16 | NA | NA | NE |
| Magnesium | SW6010B | mg/L | NA | NA | 70 | 66.1 | NA | 45.3 | NA | 47.4 | NA | NA | NE |
| Manganese | SW6010B | mg/L | NA | NA | 1.1 | 0.337 | NA | 1.43 | NA | 0.977 | NA | NA | NE |
| Potassium | SW6010B | mg/L | NA | NA | < 2 | NA | NA | NA | NA | NA | NA | NA | NE |
| Sodium | SW6010B | mg/L | NA | NA | 123 | 86.6 | NA | 81.3 | NA | 73.5 | NA | NA | NE |
| Strontium | SW6010B | mg/L | NA | NA | 5.53 | NA | NA | NA | NA | NA | NA | NA | NE |
| Tin | SW6010B | mg/L | NA | NA | < 0.05 | < 0.05 | NA | < 0.05 | NA | < 0.05 | NA | NA | NE |
| Antimony | SW6020A | mg/L | NA | NA | < 0.005 | < 0.005 | NA | < 0.005 | NA | < 0.005 | NA | NA | NE |
| Arsenic | SW6020A | mg/L | NA | NA | < 0.005 | < 0.005 | NA | < 0.005 | NA | < 0.005 | NA | NA | NE |
| Barium | SW6020A | mg/L | NA | NA | 0.438 | 0.049 | NA | 0.0515 | NA | 0.0423 | NA | NA | NE |
| Beryllium | SW6020A | mg/L | NA | NA | < 0.004 | < 0.004 | NA | < 0.004 | NA | < 0.004 | NA | NA | NE |
| Cadmium | SW6020A | mg/L | NA | NA | < 0.005 | < 0.005 | NA | < 0.005 | NA | < 0.005 | NA | NA | NE |
| Chromium | SW6020A | mg/L | NA | NA | < 0.005 | 0.00523 | NA | < 0.005 | NA | < 0.005 | NA | NA | NE |
| Cobalt | SW6020A | mg/L | NA | NA | < 0.005 | < 0.005 | NA | < 0.005 | NA | < 0.005 | NA | NA | NE |
| Copper | SW6020A | mg/L | NA | NA | < 0.005 | < 0.005 | NA | < 0.005 | NA | < 0.005 | NA | NA | NE |
| Lead | SW6020A | mg/L | NA | NA | < 0.005 | < 0.005 | NA | < 0.005 | NA | < 0.005 | NA | NA | NE |
| Molybdenum | SW6020A | mg/L | NA | NA | < 0.01 | < 0.01 | NA | 0.0159 | NA | < 0.01 | NA | NA | NE |
| Nickel | SW6020A | mg/L | NA | NA | 0.00831 | < 0.005 | NA | < 0.005 | NA | < 0.005 | NA | NA | NE |
| Selenium | SW6020A | mg/L | NA | NA | < 0.005 | < 0.005 | NA | < 0.005 | NA | < 0.005 | NA | NA | NE |
| Silver | SW6020A | mg/L | NA | NA | < 0.005 | < 0.005 | NA | < 0.005 | NA | < 0.005 | NA | NA | NE |
| Thallium | SW6020A | mg/L | NA | NA | < 0.005 | < 0.005 | NA | < 0.005 | NA | < 0.005 | NA | NA | NE |
| Tungsten | SW6020A | mg/L | NA | NA | NA | < 0.01 | NA | 0.0133 | NA | < 0.01 | NA | NA | NE |
| Vanadium | SW6020A | mg/L | NA | NA | < 0.005 | 0.00899 | NA | 0.00807 | NA | 0.00874 | NA | NA | NE |
| Zinc | SW6020A | mg/L | NA | NA | 0.0236 | 0.0136 | NA | < 0.01 | NA | < 0.01 | NA | NA | NE |

**Notes:**
MW = monitoring well
NMWQCC = New Mexico Water Quality Control Commission
SVOCs = semi-volatile organic compounds
VOCs = volatile organic compounds
mg/L = milligrams per liter
µg/L = micrograms per liter
P = phosphate
N = nitrogen
NE = not established
NA = not analyzed
Items in **BOLD** show exceedences of NMWQCC groundwater quality standards

**Table 4. Baseline Groundwater Laboratory Analytical Results**

| Constituent | | | MW-1 | | | MW-2 | | MW-3 | | MW-4 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SVOCS (detections only)** | **Method** | **Units** | **10/24/2008** | **Duplicate** | **1/29/2009** | **10/24/2008** | **1/29/2009** | **10/24/2008** | **1/29/2009** | **10/24/2008** | **1/29/2009** | **Duplicate** | **NMWQCC Groundwater Standard** |
| 2,4-Dimethylphenol | 8270C | µg/L | NA | NA | 64 | <5 | NA | <5 | NA | <5 | NA | NA | NE |
| 2-Methylnaphthalene | 8270C | µg/L | NA | NA | 28 | <5 | NA | <5 | NA | <5 | NA | NA | 30 |
| Naphthalene | 8270C | µg/L | NA | NA | **45** | <5 | NA | <5 | NA | <5 | NA | NA | 30 |
| Phenol | 8270C | µg/L | NA | NA | 79 | <5 | NA | <5 | NA | <5 | NA | NA | NE |
| 2-Methylphenol | 8270C | µg/L | NA | NA | 80 | <5 | NA | <5 | NA | <5 | NA | NA | NE |
| 3 & 4-Methylphenol | 8270C | µg/L | NA | NA | 280 | <5 | NA | <5 | NA | <5 | NA | NA | NE |
| **VOCs (detections and BTEX only)** | **Method** | **Units** | **10/24/2008** | **Duplicate** | **1/29/2009** | **10/24/2008** | **1/29/2009** | **10/24/2008** | **1/29/2009** | **10/24/2008** | **1/29/2009** | **Duplicate** | **NMWQCC Groundwater Standard** |
| 1,2,4-Trimethylbenzene | 8260B | µg/L | 590 | 580 | 1100 | < 5 | NA | < 5 | NA | < 5 | 12 | NA | NE |
| 1,3,5-Trimethylbenzene | 8260B | µg/L | 320 | 320 | 670 | < 5 | NA | < 5 | NA | < 5 | 11 | NA | NE |
| 2-Butanone | 8260B | µg/L | NA | NA | 190 | < 20 | NA | < 20 | NA | < 20 | < 20 | NA | NE |
| 2-Hexanone | 8260B | µg/L | NA | NA | 250 | < 10 | NA | < 10 | NA | < 10 | < 10 | NA | NE |
| 4-Isopropyltoluene | 8260B | µg/L | NA | NA | 15 | < 5 | NA | < 5 | NA | < 5 | < 5 | NA | NE |
| 4-Methyl-2-Pentanone | 8260B | µg/L | 130 | 130 | 110 | < 10 | NA | < 10 | NA | < 10 | < 10 | NA | NE |
| Acetone | 8260B | µg/L | 940 | 930 | 430 | < 100 | NA | < 100 | NA | < 100 | < 100 | NA | NE |
| Isopropylbenzene | 8260B | µg/L | 30 | 28 | 35 | < 5 | NA | < 5 | NA | < 5 | < 5 | NA | NE |
| Naphthalene | 8260B | µg/L | **44** | **44** | **61** | < 5 | NA | < 5 | NA | < 5 | < 5 | NA | 30 |
| n-Propylbenzene | 8260B | µg/L | 26 | 27 | 29 | < 5 | NA | < 5 | NA | < 5 | < 5 | NA | NE |
| sec-Butylbenzene | 8260B | µg/L | < 5 | 6 | 10 | < 5 | NA | < 5 | NA | < 5 | < 5 | NA | NE |
| tert-Butylbenzene | 8260B | µg/L | NA | NA | 16 | < 5 | NA | < 5 | NA | < 5 | < 5 | NA | NE |
| Benzene | 8260B | µg/L | **6,000** | **5,900** | **6,700** | < 5 | < 5 | **20** | **12** | **24** | **110** | **110** | 10 |
| Toluene | 8260B | µg/L | **2,100** | **2,000** | **2,200** | < 5 | < 5 | < 5 | < 5 | < 5 | 6 | 5 | 750 |
| Ethylbenzene | 8260B | µg/L | 400 | 390 | 630 | < 5 | < 5 | < 5 | < 5 | 6 | 9 | 9 | 750 |
| Total Xylenes | 8260B | µg/L | **9,000** | **8,900** | **14,500** | < 5 | < 5 | 24 | 5 | 10 | 147 | 158 | 620 |
| **Other** | **Method** | **Units** | **10/24/2008** | **Duplicate** | **1/29/2009** | **10/24/2008** | **1/29/2009** | **10/24/2008** | **1/29/2009** | **10/24/2008** | **1/29/2009** | **Duplicate** | **NMWQCC Groundwater Standard** |
| Diesel Range Organics | SW8015B | mg/L | NA | NA | 24 | < 0.1 | NA | 0.33 | NA | 4.1 | NA | NA | NE |
| Gasoline Range Organics | SW8015B | mg/L | NA | NA | 26 | < 0.1 | NA | 0.3 | NA | 0.38 | NA | NA | NE |

**Notes:**
MW = monitoring well
NMWQCC = New Mexico Water Quality Control Commission
SVOCs = semi-volatile organic compounds
VOCs = volatile organic compounds
mg/L = milligrams per liter
µg/L = micrograms per liter
P = phosphate
N = nitrogen
NE = not established
NA = not analyzed
Items in **BOLD** show exceedences of NMWQCC groundwater quality standards

**Table 5. Groundwater Analytical Results Summary, BTEX Parameters**

| Well ID | Date | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | Total Xylenes (µg/L) |
|---|---|---|---|---|---|
| MW-1 | 5/25/1999 | **8700** | **2900** | **2800** | **2900** |
| | 9/1/1999 | Free Phase Product Detected - No Sample Collected | | | |
| | 12/1/1999 | **4700** | **1300** | **900** | **10000** |
| | 1/18/2000 | **3600** | **820** | **840** | **7500** |
| | 5/17/2000 | **6900** | **1100** | **1500** | **17000** |
| | 9/8/2000 | **4600** | 620 | **930** | **10000** |
| | 12/20/2000 | < 0.2 | 0.5 | 34 | 61 |
| | 3/27/2001 | **5430** | 641 | **991** | **9830** |
| | 6/27/2001 | **5870** | **900** | **990** | **10400** |
| | 9/17/2001 | **5910** | **750** | **980** | **10700** |
| | 12/19/2001 | **7200** | 650 | **1020** | **11300** |
| | 3/25/2002 | **5520** | **830** | **1190** | **10500** |
| | 6/26/2002 | **516** | 66.2 | 78.7 | **863** |
| | 9/24/2002 | **5310** | **8000** | **880** | **13960** |
| | 12/30/2002 | **7660** | **10200** | **760** | **14140** |
| | 3/27/2003 | Free Phase Product Detected - No Sample Collected | | | |
| | 6/27/2003 | Free Phase Product Detected - No Sample Collected | | | |
| | 10/10/2003 | Free Phase Product Detected - No Sample Collected | | | |
| | 12/10/2003 | Free Phase Product Detected - No Sample Collected | | | |
| | 3/16/2004 | Free Phase Product Detected - No Sample Collected | | | |
| | 6/22/2004 | **6160** | **8100** | 470 | **15840** |
| | 9/30/2004 | Free Phase Product Detected - No Sample Collected | | | |
| | 12/13/2004 | Free Phase Product Detected - No Sample Collected | | | |
| | 3/23/2005 | Free Phase Product Detected - No Sample Collected | | | |
| | 6/22/2005 | Free Phase Product Detected - No Sample Collected | | | |
| | 10/28/2005 | Free Phase Product Detected - No Sample Collected | | | |
| | 12/14/2005 | Free Phase Product Detected - No Sample Collected | | | |
| | 3/20/2006 | **3170** | **3740** | **1060** | **30130** |
| | 6/21/2006 | **4900** | **3280** | 448 | **2390** |
| | 10/20/2006 | Free Phase Product Detected - No Sample Collected | | | |
| | 12/13/2006 | **5300** | **7200** | **870** | **15450** |
| | 3/27/2007 | **6870** | **5720** | 210 | **12160** |
| | 6/25/2007 | **5680** | **1830** | 400 | **9480** |
| | 11/9/2007 | NA | NA | NA | NA |
| | 1/15/2008 | NA | NA | NA | NA |
| | 4/30/2008 | **6300** | **1800** | 280 J | **8600** |
| | 7/23/2008 | **7100** | **2200** | 450 | **10600** |
| | 10/24/2008 | **6000** | **2100** | 400 | **9000** |
| | 1/29/2009 | **6700** | **2200** | 630 | **14500** |

**Table 5. Groundwater Analytical Results Summary, BTEX Parameters**

| Well ID | Date | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | Total Xylenes (µg/L) |
|---|---|---|---|---|---|
| MW-2 | 10/24/2008 | < 0.5 U | < 0.5 U | < 0.5 U | < 0.5 U |
| | 1/29/2009 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| MW-3 | 10/24/2008 | **20** | < 0.5 U | < 0.5 U | 24 |
| | 1/29/2009 | **12** | < 0.5 | < 0.5 | 5 |
| MW-4 | 10/24/2008 | **24** | < 0.5 U | 6 | 10 |
| | 1/29/2009 | **110** | 6 | 9 | 147 |
| **NMWQCC Groundwater Quality Standards** | | **10 (µg/L)** | **750 (µg/L)** | **750 (µg/L)** | **620 (µg/L)** |

**Explanation**

NMWQCC = New Mexico Water Quality Control Commission
mg/L = milligrams per liter (parts per million)
µg/L = micrograms per liter (parts per billion)
<0.7 = Below laboratory detection limit of 0.7 ug/L
J = Estimated value between MDL and PQL
U = Analyte was analyzed for but not detected at the indicated MDL
**Bold** = concentrations that exceed the NMWQCC groundwater quality standard
NA - not analyzed. Incorrect well sampled during these dates for MW-1.

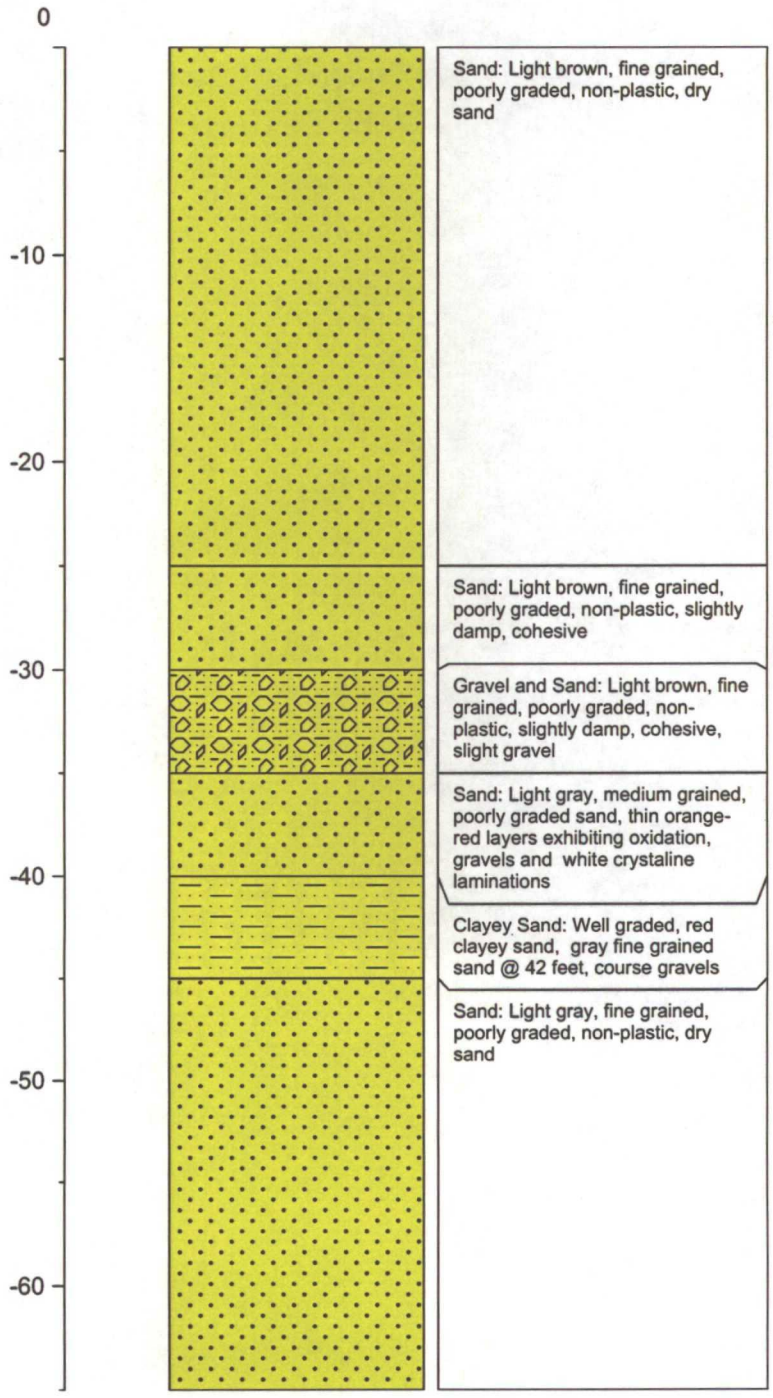
# APPENDIX A

Soil Boring Logs and Well Completion Forms

# Tetra Tech

**Site Location:** Aztec, San Juan Co., NM
**Project:** Johnston Federal #4
**Boring advanced by:** Matt Cain of WDC
**Date advanced:** 8/14/08

**Boring ID:** MW-2
**Logged by:** Ana Moreno
**Total depth:** 65.5 feet

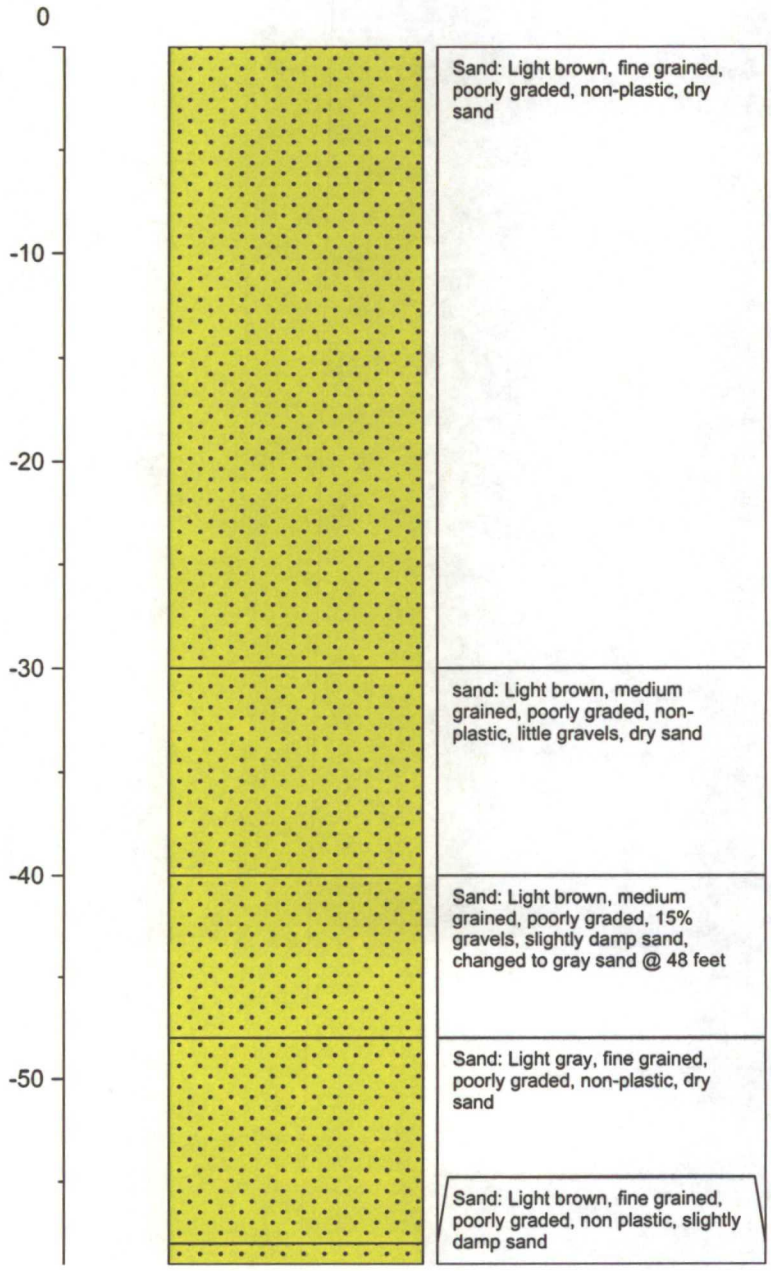


# Tetra Tech

**Site Location:** Aztec, San Juan Co., NM
**Project:** Johnston Federal #4
**Boring advanced by:** Matt Cain of WDC
**Date advanced:** 8/14/2008

**Boring ID:** MW-3
**Logged by:** Ana Moreno
**Total depth:** 59 feet

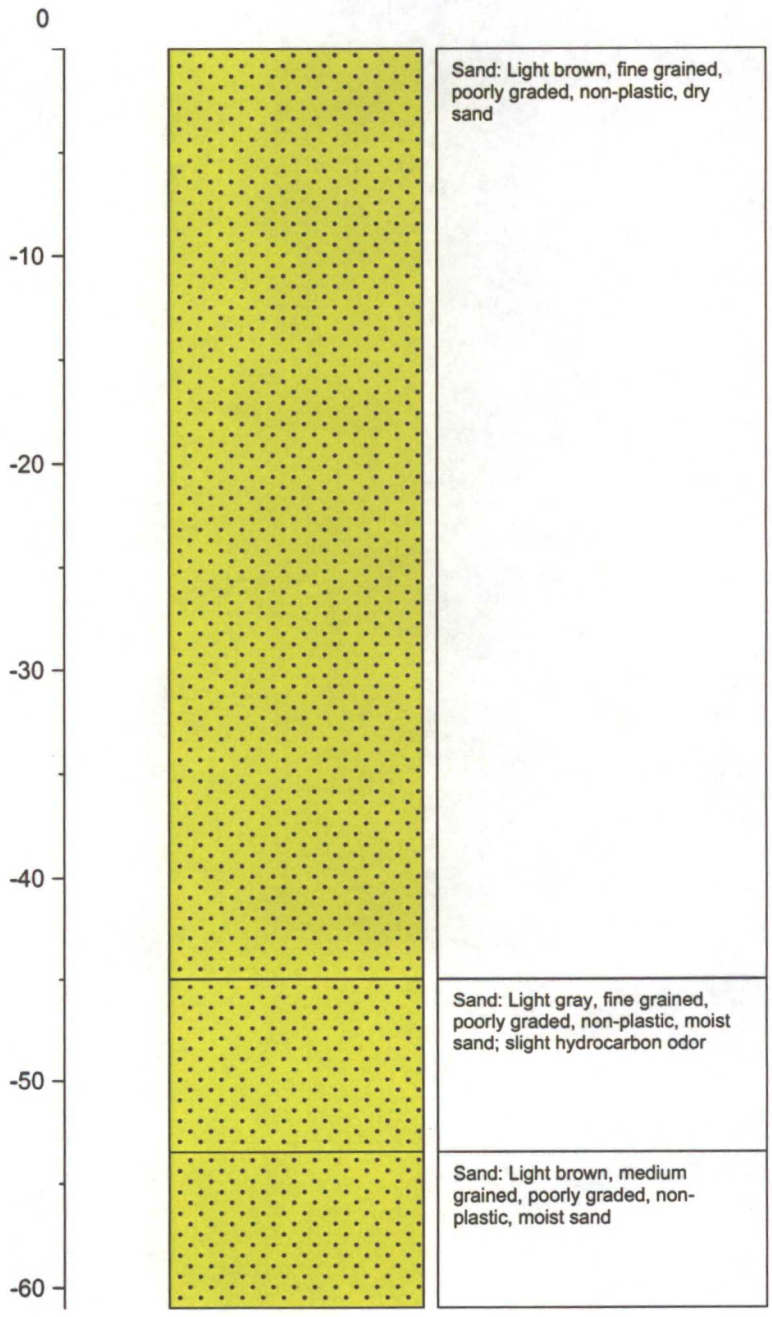
| DEPTH ( in feet bgs ) | INTERPRETED LITHOLOGY | DESCRIPTIONS |
|---|---|---|



# Tetra Tech

**Site Location:** Aztec, San Juan Co., NM
**Project:** Johnston Federal #4
**Boring advanced by:** Matt Cain of WDC
**Date advanced:** 8/15/2008

**Boring ID:** MW-4
**Logged by:** Ana Moreno
**Total depth:** 61 feet



TETRA TECH, INC.

# Well Completion Diagram

Well ID MW-2

Job Name Johnston Federal #4

Job No. 1158690090 Date 8/15/2008

Project Manager Kelly Blanchard

*Well I.D.* MW-2

Field Geologist Ana Moreno

Driller Matt Cain - WDC

Equipment CME 85

## Materials

| | | | |
|---|---|---|---|
| 1350 | Pounds | Silica Sand | Filter Pack |
| 150 | Pounds | Chips and Powder | Bentonite Seal |
| 45 | Gallons | | Grout |
| 75 | Pounds | | Concrete |
| | Feet of native fill/ slough | | |
| 41.5 | Feet of | 2 inch pvc | Blank Casing |
| 20 | Feet of | 2 inch 010 pvc | Slotted Screen |
| | Feet of | | Outer Casing |
| | Feet of | | Sump/ Silt Trap |

Placement Method

Notes Casing and screen joint type - flush thread

## Development

Method Hand-bailed

Date 8/15/2008

Amount Purged 80 gallons

Notes Discharged to on-site waste water tank

Stickup (feet): approx. 3 ft.

Steel Casing

Other:

2" locking cap

Casing:

0 ft. to 41.5 ft.

8 inch diameter Borehole:

0 ft. to 65.5 ft.

Outer Casing:

ft. to ft.

Concrete: approx. 4' well pads

0 ft. to 1 ft.

Grout:

1 ft. to 37.5 ft.

Bentonite Seal:

37.5 ft. to 40.5 ft.

Filter Pack:

40.5 ft. to 65.5 ft.

Slotted Screen:

41.5 ft. to 61.5 ft.

Native fill/ slough:

ft. to ft.

8 inch diameter Borehole:

0 ft. to 65.5 ft.

Sump/ Silt Trap:

ft. to ft.

Total Depth Borehole (feet): 65.5

TETRA TECH, INC.

# Well Completion Diagram

Well ID MW-3

Job Name Johnston Federal #4

Job No. 1158690090 Date 8/15/2008

Project Manager Kelly Blanchard

*Well I.D.* MW-3

Field Geologist Ana Moreno

Driller Matt Cain - WDC

Equipment CME 85

## Materials

| | | | |
|---|---|---|---|
| 850 | Pounds | Silica Sand | Filter Pack |
| 200 | Pounds | Chips and Powder | Bentonite Seal |
| 45 | Gallons | | Grout |
| 100 | Pounds | | Concrete |
| | Feet of native fill/ slough | | |
| 35 | Feet of | 2 inch pvc | Blank Casing |
| 20 | Feet of | 2 inch 010 pvc | Slotted Screen |
| | Feet of | | Outer Casing |
| | Feet of | | Sump/ Silt Trap |

Placement Method

Notes Casing and screen joint type - flush thread

## Development

Method Hand-bailed

Date 8/15/2008

Amount Purged 80 gallons

Notes Discharged to on-site waste water tank

Stickup (feet): approx. 3 ft.

Steel Casing

Other:

2" locking cap

Casing:

0 ft. to 35 ft.

8 inch diameter Borehole:

0 ft. to 59 ft.

Outer Casing:

ft. to ft.

Concrete: approx. 4' well pads

0 ft. to 1 ft.

Grout:

1 ft. to 31 ft.

Bentonite Seal:

31 ft. to 34 ft.

Filter Pack:

34 ft. to 59 ft.

Slotted Screen:

35 ft. to 55 ft.

Native fill/ slough:

ft. to ft.

8 inch diameter Borehole:

0 ft. to 59 ft.

Sump/ Silt Trap:

ft. to ft.

Total Depth Borehole (feet):
59

TETRA TECH, INC.

# Well Completion Diagram

Well ID MW-4

Job Name: Johnston Federal #4

Job No.: 1158690090 Date: 8/15/2008

Project Manager: Kelly Blanchard

*Well I.D.*: MW-4

Field Geologist: Ana Moreno

Driller: Matt Cain - WDC

Equipment: CME 85

## Materials

| | | | |
|---|---|---|---|
| 700 | Pounds | Silica Sand | Filter Pack |
| 200 | Pounds | Chips and Powder | Bentonite Seal |
| 45 | Gallons | | Grout |
| 75 | Pounds | | Concrete |
| | Feet of native fill/ slough | | |
| 37 | Feet of | 2 inch pvc | Blank Casing |
| 20 | Feet of | 2 inch 010 pvc | Slotted Screen |
| | Feet of | | Outer Casing |
| | Feet of | | Sump/ Silt Trap |

Placement Method:

Notes: Casing and screen joint type - flush thread

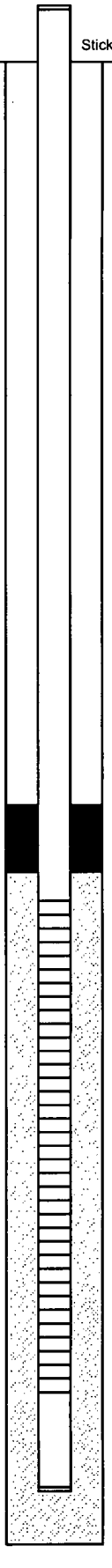
## Development

Method: Hand-bailed

Date: 8/15/2008

Amount Purged: 80 gallons

Notes: Discharged to on-site waste water tank



Stickup (feet): approx. 3 ft.

Steel Casing

Other:

2" locking cap

Casing:

0 ft. to 37 ft.

8 inch diameter Borehole:

0 ft. to 61 ft.

Outer Casing:

ft. to ft.

Concrete: approx. 4' well pads

0 ft. to 1 ft.

Grout:

1 ft. to 33 ft.

Bentonite Seal:

33 ft. to 36 ft.

Filter Pack:

36 ft. to 61 ft.

Slotted Screen:

37 ft. to 57 ft.

Native fill/ slough:

ft. to ft.

8 inch diameter Borehole:

0 ft. to 61 ft.

Sump/ Silt Trap:

ft. to ft.

Total Depth Borehole (feet):
61

# APPENDIX B

Soil Boring Laboratory Analysis Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

## Conoco Phillips

**Certificate of Analysis Number:**

**08080983**

| Report To: | | Project Name: | COP Johnson Fed4 |
|---|---|---|---|
| Tetra Tech EM, Inc. | | Site: | Aztec, NM |
| Kelly Blanchard | | Site Address: | |
| 6121 Indian School Road, N.E. | | | |
| Suite 200 | | PO Number: | 4510016699 |
| Albuquerque | | State: | New Mexico |
| NM | | State Cert. No.: | |
| 87110- | | Date Reported: | 9/4/2008 |
| ph: (505) 881-3188 | fax: | | |

This Report Contains A Total Of 48 Pages

Excluding This Page, Chain Of Custody

And

Any Attachments

9/8/2008

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

## Case Narrative for:

# Conoco Phillips

## Certificate of Analysis Number:

## 08080983

| Report To: | | Project Name: | COP Johnson Fed4 |
|---|---|---|---|
| Tetra Tech EM, Inc. | | Site: | Aztec, NM |
| Kelly Blanchard | | Site Address: | |
| 6121 Indian School Road, N.E. | | | |
| Suite 200 | | PO Number: | 4510016699 |
| Albuquerque | | State: | New Mexico |
| NM | | State Cert. No.: | |
| 87110- | | Date Reported: | 9/4/2008 |
| ph: (505) 881-3188 | fax: | | |

Per our conversation on August 6, 2008, samples requested for TPH analysis by Method 418.1 were analyzed at SPL for Gasoline Range Organics and Diesel Range Organics by SW846 Method 8015B.

Per the Conoco Phillips TSM Revision 0, a copy of the internal chain of custody is to be included in final data package. However, due to LIMS limitations, this cannot be provided at this time.

Results for soils are reported on a dry-weight basis.

Per ConocoPhillips Central Region Environmental Contract Laboratory Program Technical Specifications Manual Revision 0, for Semivolatile Organic analysis by SW846 Method 8270B, the percent difference for target analytes in the continuing calibration verification standard must be less than 20%D. The CCV analyzed with the samples in QC Batch ID 82934 recovered low and did not meet the TSM criteria for the following compounds: 4,6-Dinitro-2-methylphenol=-26.969% Drift, 2,4-Dinitrophenol=-25.897% Drift, Benzyl alcohol=21.023% Drift, and Benzoic acid=76.520%Drift.

Samples analyzed for Total Metals by SW846 Method 6020A (Batch ID: 83008C-I) did not have a Laboratory Control Standard for Tungsten. The Matrix Spike and Matrix spike Duplicate were analyzed as quality control.

The samples submitted for Volatile Organics by SW846 Method 8260B and Gasoilne Range Organics by SW846 Method 8015B were received in a vessel that is not stipulated in Method 5035A; the sample were preserved and/or analyzed within 48 hours of sample collection.

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Your sample ID "MW-3 (57-58.5)" (SPL ID:08080983-02) was randomly selected for use in SPL's quality control program for the Volatile Organics analysis by SW846 Method 8260B. The Matrix Spike (MS) and Matrix Spike Duplicate (MSD) recoveries were outside of the advisable quality control limits(Batch ID:R249104) due to matrix interference. A Laboratory Control Sample (LCS) was analyzed as a quality control check for the analytical batch and all recoveries were within acceptable limits.

Some of the percent recoveries and RPD's on the QC report for the MS/MSD may be different than the calculated recoveries and RPD's using the sample result and the MS/MSD results that appear on the report because, the actual raw result is used to perform the calculations for percent recovery and RPD.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.



SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.



Bethany A. Agarwal — Date

Senior Project Manager

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

# Conoco Phillips

## Certificate of Analysis Number:

## 08080983

**Report To:** Tetra Tech EM, Inc.
Kelly Blanchard
6121 Indian School Road, N.E.
Suite 200
Albuquerque
NM
87110-
ph: (505) 881-3188 fax: (505) 881-3283

**Fax To:**

**Project Name:** COP Johnson Fed4
**Site:** Aztec, NM
**Site Address:**
**PO Number:** 4510016699
**State:** New Mexico
**State Cert. No.:**
**Date Reported:** 9/4/2008

| Client Sample ID | Lab Sample ID | Matrix | Date Collected | Date Received | COC ID | HOLD |
|---|---|---|---|---|---|---|
| MW-2 (58.0-59.5) | 08080983-01 | Soil | 8/15/2008 1:30:00 PM | 8/19/2008 9:30:00 AM | | ☐ |
| MW-3 (57-58.5) | 08080983-02 | Soil | 8/15/2008 9:45:00 AM | 8/19/2008 9:30:00 AM | | ☐ |
| MW-4 (53-54.5) | 08080983-03 | Soil | 8/15/2008 4:30:00 PM | 8/19/2008 9:30:00 AM | | ☐ |

Bethany Agarwal

9/8/2008

Bethany A. Agarwal
Senior Project Manager

Date

Richard R. Reed
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-2 (58.0-59.5) **Collected:** 08/15/2008 13:30 **SPL Sample ID:** 08080983-01

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **DIESEL RANGE ORGANICS** | | | | **MCL** | **SW8015B** | **Units: mg/kg-dry** | |
| Diesel Range Organics (C10-C28) | ND | | 5.9 | 1 | 08/22/08 13:36 | NW | 4642631 |
| Surr: n-Pentacosane | 98.5 | | % 20-154 | 1 | 08/22/08 13:36 | NW | 4642631 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3550B | 08/21/2008 13:04 | QMT | 1.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **GASOLINE RANGE ORGANICS** | | | | **MCL** | **SW8015B** | **Units: mg/kg-dry** | |
| Gasoline Range Organics | ND | | 0.12 | 1 | 08/21/08 18:23 | SFE | 4640509 |
| Surr: 1,4-Difluorobenzene | 104 | | % 63-142 | 1 | 08/21/08 18:23 | SFE | 4640509 |
| Surr: 4-Bromofluorobenzene | 94.8 | | % 50-159 | 1 | 08/21/08 18:23 | SFE | 4640509 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW5030B | 08/21/2008 11:29 | XML | 1.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **MERCURY, TOTAL** | | | | **MCL** | **SW7471A** | **Units: mg/kg-dry** | |
| Mercury | ND | | 0.0355 | 1 | 08/25/08 15:44 | CMC | 4644301 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW7471A | 08/25/2008 12:15 | CMC | 1.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **METALS BY METHOD 6010B, TOTAL** | | | | **MCL** | **SW6010B** | **Units: mg/kg-dry** | |
| Aluminum | 8770 | | 11.8 | 1 | 09/01/08 16:59 | BDG | 4656267 |
| Boron | ND | | 59.2 | 5 | 09/02/08 19:06 | BDG | 4659238 |
| Calcium | 4570 | | 11.8 | 1 | 09/01/08 16:59 | BDG | 4656267 |
| Iron | 13600 | | 2.37 | 1 | 09/01/08 16:59 | BDG | 4656267 |
| Magnesium | 3400 | | 11.8 | 1 | 09/01/08 16:59 | BDG | 4656267 |
| Potassium | 748 | | 237 | 1 | 09/01/08 16:59 | BDG | 4656267 |
| Sodium | 669 | | 59.2 | 1 | 09/01/08 16:59 | BDG | 4656267 |
| Strontium | 58.5 | | 2.37 | 1 | 09/01/08 16:59 | BDG | 4656267 |
| Tin | ND | | 5.92 | 1 | 09/01/08 16:59 | BDG | 4656267 |
| Titanium | 34 | | 2.37 | 1 | 09/01/08 16:59 | BDG | 4656267 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3050B | 08/21/2008 11:40 | DDW | 1.00 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-2 (58.0-59.5) **Collected:** 08/15/2008 13:30 **SPL Sample ID:** 08080983-01

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **METALS BY METHOD 6020, TOTAL** | | | | **MCL** | **SW6020A** | **Units: mg/kg-dry** | |
| Antimony | ND | | 0.592 | 1 | 08/25/08 19:06 | PG | 4645631 |
| Arsenic | 6.51 | | 0.592 | 1 | 08/25/08 19:06 | PG | 4645631 |
| Barium | 65.2 | | 0.592 | 1 | 08/25/08 19:06 | PG | 4645631 |
| Beryllium | 0.558 | | 0.00474 | 1 | 08/26/08 20:36 | AL_H | 4647848 |
| Cadmium | ND | | 0.592 | 1 | 08/25/08 19:06 | PG | 4645631 |
| Chromium | 7.55 | | 0.00592 | 1 | 08/26/08 20:36 | AL_H | 4647848 |
| Cobalt | 4.8 | | 0.592 | 1 | 08/25/08 19:06 | PG | 4645631 |
| Copper | 4.43 | | 0.00592 | 1 | 08/26/08 20:36 | AL_H | 4647848 |
| Lead | 6.47 | | 0.592 | 1 | 08/25/08 19:06 | PG | 4645631 |
| Manganese | 276 | | 0.592 | 1 | 08/25/08 19:06 | PG | 4645631 |
| Molybdenum | ND | | 0.592 | 1 | 08/25/08 19:06 | PG | 4645631 |
| Nickel | 6.03 | | 0.592 | 1 | 08/25/08 19:06 | PG | 4645631 |
| Selenium | ND | | 0.592 | 1 | 08/25/08 19:06 | PG | 4645631 |
| Silver | ND | | 0.592 | 1 | 08/25/08 19:06 | PG | 4645631 |
| Thallium | 0.0918 | | 0.00592 | 1 | 08/26/08 20:36 | AL_H | 4647848 |
| Tungsten | ND | | 0.592 | 1 | 08/28/08 14:04 | PG | 4651666 |
| Vanadium | 12.5 | | 0.592 | 1 | 08/25/08 19:06 | PG | 4645631 |
| Zinc | 36.1 | | 1.18 | 1 | 08/25/08 19:06 | PG | 4645631 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3050B | 08/21/2008 11:40 | DDW | 1.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **PERCENT MOISTURE** | | | | **MCL** | **D2216** | **Units: wt%** | |
| Percent Moisture | 15.6 | | 0 | 1 | 08/21/08 18:25 | IAB | 4638959 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-2 (58.0-59.5) **Collected:** 08/15/2008 13:30 **SPL Sample ID:** 08080983-01

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **SEMIVOLATILE ORGANICS BY METHOD 8270C** | | | **MCL** | **SW8270C** | **Units: ug/kg-dry** | | |
| 1,2,4-Trichlorobenzene | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 1,2-Dichlorobenzene | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 1,2-Diphenylhydrazine | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 1,3-Dichlorobenzene | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 1,4-Dichlorobenzene | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 2,4,5-Trichlorophenol | ND | | 950 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 2,4,6-Trichlorophenol | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 2,4-Dichlorophenol | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 2,4-Dimethylphenol | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 2,4-Dinitrophenol | ND | | 950 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 2,4-Dinitrotoluene | ND | | 950 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 2,6-Dinitrotoluene | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 2-Chloronaphthalene | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 2-Chlorophenol | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 2-Methylnaphthalene | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 2-Nitroaniline | ND | | 950 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 2-Nitrophenol | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 3,3'-Dichlorobenzidine | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 3-Nitroaniline | ND | | 950 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 4,6-Dinitro-2-methylphenol | ND | | 950 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 4-Bromophenyl phenyl ether | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 4-Chloro-3-methylphenol | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 4-Chloroaniline | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 4-Chlorophenyl phenyl ether | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 4-Nitroaniline | ND | | 950 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 4-Nitrophenol | ND | | 950 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Acenaphthene | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Acenaphthylene | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Aniline | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Anthracene | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Benz(a)anthracene | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Benzo(a)pyrene | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Benzo(b)fluoranthene | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Benzo(g,h,i)perylene | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Benzo(k)fluoranthene | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Benzoic acid | ND | | 1900 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Benzyl alcohol | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Bis(2-chloroethoxy)methane | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Bis(2-chloroethyl)ether | ND | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-2 (58.0-59.5) **Collected:** 08/15/2008 13:30 **SPL Sample ID:** 08080983-01

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|---|
| Bis(2-chloroisopropyl)ether | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Bis(2-ethylhexyl)phthalate | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Butyl benzyl phthalate | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Carbazole | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Chrysene | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Dibenz(a,h)anthracene | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Dibenzofuran | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Diethyl phthalate | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Dimethyl phthalate | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Di-n-butyl phthalate | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Di-n-octyl phthalate | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Fluoranthene | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Fluorene | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Hexachlorobenzene | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Hexachlorobutadiene | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Hexachlorocyclopentadiene | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Hexachloroethane | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Indeno(1,2,3-cd)pyrene | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Isophorone | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Naphthalene | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Nitrobenzene | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| N-Nitrosodi-n-propylamine | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| N-Nitrosodiphenylamine | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Pentachlorophenol | ND | | | 950 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Phenanthrene | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Phenol | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Pyrene | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Pyridine | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 2-Methylphenol | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| 3 & 4-Methylphenol | ND | | | 390 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Surr: 2,4,6-Tribromophenol | 80.0 | | % | 19-135 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Surr: 2-Fluorobiphenyl | 82.4 | | % | 15-140 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Surr: 2-Fluorophenol | 72.0 | | % | 15-122 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Surr: Nitrobenzene-d5 | 70.6 | | % | 10-134 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Surr: Phenol-d5 | 80.0 | | % | 10-123 | 1 | 08/27/08 15:55 | GY | 4651385 |
| Surr: Terphenyl-d14 | 82.4 | | % | 18-166 | 1 | 08/27/08 15:55 | GY | 4651385 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3550B | 08/21/2008 13:34 | QMT | 1.00 |

**Qualifiers:**

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B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-2 (58.0-59.5) **Collected:** 08/15/2008 13:30 **SPL Sample ID:** 08080983-01

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANICS BY METHOD 8260B** | | | **MCL** | **SW8260B** | **Units: ug/kg-dry** | | |
| 1,1,1,2-Tetrachloroethane | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 1,1,1-Trichloroethane | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 1,1,2,2-Tetrachloroethane | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 1,1,2-Trichloroethane | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 1,1-Dichloroethane | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 1,1-Dichloroethene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 1,1-Dichloropropene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 1,2,3-Trichlorobenzene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 1,2,3-Trichloropropane | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 1,2,4-Trichlorobenzene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 1,2,4-Trimethylbenzene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 1,2-Dibromo-3-chloropropane | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 1,2-Dibromoethane | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 1,2-Dichlorobenzene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 1,2-Dichloroethane | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 1,2-Dichloropropane | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 1,3,5-Trimethylbenzene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 1,3-Dichlorobenzene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 1,3-Dichloropropane | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 1,4-Dichlorobenzene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 2,2-Dichloropropane | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 2-Butanone | ND | | 24 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 2-Chloroethyl vinyl ether | ND | | 12 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 2-Chlorotoluene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 2-Hexanone | ND | | 12 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 4-Chlorotoluene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 4-Isopropyltoluene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 4-Methyl-2-pentanone | ND | | 12 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Acetone | ND | | 120 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Acrylonitrile | ND | | 59 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Benzene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Bromobenzene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Bromochloromethane | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Bromodichloromethane | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Bromoform | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Bromomethane | ND | | 12 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Carbon disulfide | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Carbon tetrachloride | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Chlorobenzene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |

**Qualifiers:**

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J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-2 (58.0-59.5) **Collected:** 08/15/2008 13:30 **SPL Sample ID:** 08080983-01

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| Chloroethane | ND | | 12 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Chloroform | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Chloromethane | ND | | 12 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Dibromochloromethane | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Dibromomethane | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Dichlorodifluoromethane | ND | | 12 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Ethylbenzene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Hexachlorobutadiene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Isopropylbenzene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Methyl tert-butyl ether | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Methylene chloride | 9.5 | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Naphthalene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| n-Butylbenzene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| n-Propylbenzene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| sec-Butylbenzene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Styrene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| tert-Butylbenzene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Tetrachloroethene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Toluene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Trichloroethene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Trichlorofluoromethane | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Vinyl acetate | ND | | 12 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Vinyl chloride | ND | | 12 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| cis-1,2-Dichloroethene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| cis-1,3-Dichloropropene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| m,p-Xylene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| o-Xylene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| trans-1,2-Dichloroethene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| trans-1,3-Dichloropropene | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Xylenes,Total | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| 1,2-Dichloroethene (total) | ND | | 5.9 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Surr: 1,2-Dichloroethane-d4 | 106 | | % 64-130 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Surr: 4-Bromofluorobenzene | 86.0 | | % 62-130 | 1 | 08/21/08 13:47 | TLE | 4640313 |
| Surr: Toluene-d8 | 104 | | % 70-140 | 1 | 08/21/08 13:47 | TLE | 4640313 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW5030B | 08/20/2008 17:15 | AG | 1.00 |

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J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-3 (57-58.5) **Collected:** 08/15/2008 9:45 **SPL Sample ID:** 08080983-02

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **DIESEL RANGE ORGANICS** | | | | **MCL** | **SW8015B** | **Units: mg/kg-dry** | |
| Diesel Range Organics (C10-C28) | ND | | 5.7 | 1 | 08/22/08 13:56 | NW | 4642632 |
| Surr: n-Pentacosane | 110 | | % 20-154 | 1 | 08/22/08 13:56 | NW | 4642632 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3550B | 08/21/2008 13:04 | QMT | 1.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **GASOLINE RANGE ORGANICS** | | | | **MCL** | **SW8015B** | **Units: mg/kg-dry** | |
| Gasoline Range Organics | ND | | 0.11 | 1 | 08/21/08 20:18 | SFE | 4640512 |
| Surr: 1,4-Difluorobenzene | 102 | | % 63-142 | 1 | 08/21/08 20:18 | SFE | 4640512 |
| Surr: 4-Bromofluorobenzene | 98.5 | | % 50-159 | 1 | 08/21/08 20:18 | SFE | 4640512 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW5030B | 08/21/2008 11:31 | XML | 1.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **MERCURY, TOTAL** | | | | **MCL** | **SW7471A** | **Units: mg/kg-dry** | |
| Mercury | ND | | 0.0343 | 1 | 08/25/08 15:46 | CMC | 4644302 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW7471A | 08/25/2008 12:15 | CMC | 1.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **METALS BY METHOD 6010B, TOTAL** | | | | **MCL** | **SW6010B** | **Units: mg/kg-dry** | |
| Aluminum | 11800 | | 11.4 | 1 | 09/01/08 17:03 | BDG | 4656269 |
| Boron | ND | | 57.2 | 5 | 09/02/08 19:10 | BDG | 4659240 |
| Calcium | 5960 | | 11.4 | 1 | 09/01/08 17:03 | BDG | 4656269 |
| Iron | 15800 | | 2.29 | 1 | 09/01/08 17:03 | BDG | 4656269 |
| Magnesium | 3990 | | 11.4 | 1 | 09/01/08 17:03 | BDG | 4656269 |
| Potassium | 1460 | | 229 | 1 | 09/01/08 17:03 | BDG | 4656269 |
| Sodium | 126 | | 57.2 | 1 | 09/01/08 17:03 | BDG | 4656269 |
| Strontium | 93.2 | | 2.29 | 1 | 09/01/08 17:03 | BDG | 4656269 |
| Tin | ND | | 5.72 | 1 | 09/01/08 17:03 | BDG | 4656269 |
| Titanium | 45.6 | | 2.29 | 1 | 09/01/08 17:03 | BDG | 4656269 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3050B | 08/21/2008 11:40 | DDW | 1.00 |

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E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-3 (57-58.5) **Collected:** 08/15/2008 9:45 **SPL Sample ID:** 08080983-02

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **METALS BY METHOD 6020, TOTAL** | | | | **MCL** | **SW6020A** | **Units: mg/kg-dry** | |
| Antimony | ND | | 0.572 | 1 | 08/25/08 19:11 | PG | 4645632 |
| Arsenic | 0.932 | | 0.572 | 1 | 08/25/08 19:11 | PG | 4645632 |
| Barium | 105 | | 0.572 | 1 | 08/25/08 19:11 | PG | 4645632 |
| Beryllium | 0.784 | | 0.00458 | 1 | 08/26/08 20:41 | AL_H | 4647849 |
| Cadmium | ND | | 0.572 | 1 | 08/25/08 19:11 | PG | 4645632 |
| Chromium | 11.5 | | 0.00572 | 1 | 08/26/08 20:41 | AL_H | 4647849 |
| Cobalt | 6.1 | | 0.572 | 1 | 08/25/08 19:11 | PG | 4645632 |
| Copper | 11.5 | | 0.00572 | 1 | 08/26/08 20:41 | AL_H | 4647849 |
| Lead | 6.89 | | 0.572 | 1 | 08/25/08 19:11 | PG | 4645632 |
| Manganese | 258 | | 0.572 | 1 | 08/25/08 19:11 | PG | 4645632 |
| Molybdenum | ND | | 0.572 | 1 | 08/25/08 19:11 | PG | 4645632 |
| Nickel | 7.74 | | 0.572 | 1 | 08/25/08 19:11 | PG | 4645632 |
| Selenium | ND | | 0.572 | 1 | 08/25/08 19:11 | PG | 4645632 |
| Silver | ND | | 0.572 | 1 | 08/25/08 19:11 | PG | 4645632 |
| Thallium | 0.139 | | 0.00572 | 1 | 08/26/08 20:41 | AL_H | 4647849 |
| Tungsten | 2.56 | | 0.572 | 1 | 08/28/08 14:47 | PG | 4651671 |
| Vanadium | 14 | | 0.572 | 1 | 08/25/08 19:11 | PG | 4645632 |
| Zinc | 38 | | 1.14 | 1 | 08/25/08 19:11 | PG | 4645632 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3050B | 08/21/2008 11:40 | DDW | 1.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **PERCENT MOISTURE** | | | | **MCL** | **D2216** | **Units: wt%** | |
| Percent Moisture | 12.6 | | 0 | 1 | 08/21/08 18:25 | IAB | 4638958 |

**Qualifiers:**

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-3 (57-58.5) **Collected:** 08/15/2008 9:45 **SPL Sample ID:** 08080983-02

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **SEMIVOLATILE ORGANICS BY METHOD 8270C** | | | **MCL** | **SW8270C** | **Units: ug/kg-dry** | | |
| 1,2,4-Trichlorobenzene | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 1,2-Dichlorobenzene | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 1,2-Diphenylhydrazine | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 1,3-Dichlorobenzene | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 1,4-Dichlorobenzene | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 2,4,5-Trichlorophenol | ND | | 920 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 2,4,6-Trichlorophenol | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 2,4-Dichlorophenol | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 2,4-Dimethylphenol | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 2,4-Dinitrophenol | ND | | 920 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 2,4-Dinitrotoluene | ND | | 920 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 2,6-Dinitrotoluene | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 2-Chloronaphthalene | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 2-Chlorophenol | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 2-Methylnaphthalene | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 2-Nitroaniline | ND | | 920 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 2-Nitrophenol | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 3,3'-Dichlorobenzidine | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 3-Nitroaniline | ND | | 920 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 4,6-Dinitro-2-methylphenol | ND | | 920 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 4-Bromophenyl phenyl ether | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 4-Chloro-3-methylphenol | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 4-Chloroaniline | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 4-Chlorophenyl phenyl ether | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 4-Nitroaniline | ND | | 920 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 4-Nitrophenol | ND | | 920 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Acenaphthene | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Acenaphthylene | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Aniline | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Anthracene | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Benz(a)anthracene | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Benzo(a)pyrene | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Benzo(b)fluoranthene | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Benzo(g,h,i)perylene | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Benzo(k)fluoranthene | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Benzoic acid | ND | | 1800 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Benzyl alcohol | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Bis(2-chloroethoxy)methane | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Bis(2-chloroethyl)ether | ND | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |

**Qualifiers:**

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-3 (57-58.5) **Collected:** 08/15/2008 9:45 **SPL Sample ID:** 08080983-02

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|---|
| Bis(2-chloroisopropyl)ether | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Bis(2-ethylhexyl)phthalate | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Butyl benzyl phthalate | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Carbazole | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Chrysene | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Dibenz(a,h)anthracene | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Dibenzofuran | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Diethyl phthalate | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Dimethyl phthalate | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Di-n-butyl phthalate | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Di-n-octyl phthalate | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Fluoranthene | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Fluorene | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Hexachlorobenzene | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Hexachlorobutadiene | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Hexachlorocyclopentadiene | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Hexachloroethane | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Indeno(1,2,3-cd)pyrene | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Isophorone | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Naphthalene | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Nitrobenzene | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| N-Nitrosodi-n-propylamine | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| N-Nitrosodiphenylamine | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Pentachlorophenol | ND | | | 920 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Phenanthrene | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Phenol | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Pyrene | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Pyridine | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 2-Methylphenol | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| 3 & 4-Methylphenol | ND | | | 380 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Surr: 2,4,6-Tribromophenol | 72.0 | | % | 19-135 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Surr: 2-Fluorobiphenyl | 70.6 | | % | 15-140 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Surr: 2-Fluorophenol | 68.0 | | % | 15-122 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Surr: Nitrobenzene-d5 | 64.7 | | % | 10-134 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Surr: Phenol-d5 | 72.0 | | % | 10-123 | 1 | 08/27/08 17:00 | GY | 4651387 |
| Surr: Terphenyl-d14 | 70.6 | | % | 18-166 | 1 | 08/27/08 17:00 | GY | 4651387 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3550B | 08/21/2008 13:34 | QMT | 1.00 |

**Qualifiers:**

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B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-3 (57-58.5) **Collected:** 08/15/2008 9:45 **SPL Sample ID:** 08080983-02

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANICS BY METHOD 8260B** | | | | **MCL** | **SW8260B** | **Units: ug/kg-dry** | |
| 1,1,1,2-Tetrachloroethane | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 1,1,1-Trichloroethane | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 1,1,2,2-Tetrachloroethane | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 1,1,2-Trichloroethane | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 1,1-Dichloroethane | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 1,1-Dichloroethene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 1,1-Dichloropropene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 1,2,3-Trichlorobenzene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 1,2,3-Trichloropropane | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 1,2,4-Trichlorobenzene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 1,2,4-Trimethylbenzene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 1,2-Dibromo-3-chloropropane | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 1,2-Dibromoethane | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 1,2-Dichlorobenzene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 1,2-Dichloroethane | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 1,2-Dichloropropane | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 1,3,5-Trimethylbenzene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 1,3-Dichlorobenzene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 1,3-Dichloropropane | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 1,4-Dichlorobenzene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 2,2-Dichloropropane | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 2-Butanone | ND | | 23 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 2-Chloroethyl vinyl ether | ND | | 11 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 2-Chlorotoluene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 2-Hexanone | ND | | 11 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 4-Chlorotoluene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 4-Isopropyltoluene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 4-Methyl-2-pentanone | ND | | 11 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Acetone | ND | | 110 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Acrylonitrile | ND | | 57 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Benzene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Bromobenzene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Bromochloromethane | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Bromodichloromethane | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Bromoform | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Bromomethane | ND | | 11 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Carbon disulfide | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Carbon tetrachloride | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Chlorobenzene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |

**Qualifiers:**

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B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-3 (57-58.5) **Collected:** 08/15/2008 9:45 **SPL Sample ID:** 08080983-02

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| Chloroethane | ND | | 11 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Chloroform | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Chloromethane | ND | | 11 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Dibromochloromethane | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Dibromomethane | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Dichlorodifluoromethane | ND | | 11 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Ethylbenzene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Hexachlorobutadiene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Isopropylbenzene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Methyl tert-butyl ether | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Methylene chloride | 10 | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Naphthalene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| n-Butylbenzene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| n-Propylbenzene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| sec-Butylbenzene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Styrene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| tert-Butylbenzene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Tetrachloroethene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Toluene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Trichloroethene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Trichlorofluoromethane | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Vinyl acetate | ND | | 11 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Vinyl chloride | ND | | 11 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| cis-1,2-Dichloroethene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| cis-1,3-Dichloropropene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| m,p-Xylene | 8 | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| o-Xylene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| trans-1,2-Dichloroethene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| trans-1,3-Dichloropropene | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Xylenes,Total | 8 | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| 1,2-Dichloroethene (total) | ND | | 5.7 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Surr: 1,2-Dichloroethane-d4 | 102 | | % 64-130 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Surr: 4-Bromofluorobenzene | 92.0 | | % 62-130 | 1 | 08/21/08 14:42 | TLE | 4640315 |
| Surr: Toluene-d8 | 100 | | % 70-140 | 1 | 08/21/08 14:42 | TLE | 4640315 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW5030B | 08/20/2008 17:20 | AG | 1.00 |

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TNTC - Too numerous to count
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-4 (53-54.5) **Collected:** 08/15/2008 16:30 **SPL Sample ID:** 08080983-03

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **DIESEL RANGE ORGANICS** | | | | **MCL** | **SW8015B** | **Units: mg/kg-dry** | |
| Diesel Range Organics (C10-C28) | ND | | 6.3 | 1 | 08/22/08 14:18 | NW | 4642633 |
| Surr: n-Pentacosane | 28.4 | | % 20-154 | 1 | 08/22/08 14:18 | NW | 4642633 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3550B | 08/21/2008 13:04 | QMT | 1.00 |

| GASOLINE RANGE ORGANICS | | | | MCL | SW8015B | Units: mg/kg-dry | |
|---|---|---|---|---|---|---|---|
| Gasoline Range Organics | 0.18 | | 0.13 | 1 | 08/21/08 20:47 | SFE | 4640513 |
| Surr: 1,4-Difluorobenzene | 100 | | % 63-142 | 1 | 08/21/08 20:47 | SFE | 4640513 |
| Surr: 4-Bromofluorobenzene | 107 | | % 50-159 | 1 | 08/21/08 20:47 | SFE | 4640513 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW5030B | 08/21/2008 11:35 | XML | 1.00 |

| MERCURY, TOTAL | | | | MCL | SW7471A | Units: mg/kg-dry | |
|---|---|---|---|---|---|---|---|
| Mercury | ND | | 0.0377 | 1 | 08/25/08 15:49 | CMC | 4644303 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW7471A | 08/25/2008 12:15 | CMC | 1.00 |

| METALS BY METHOD 6010B, TOTAL | | | | MCL | SW6010B | Units: mg/kg-dry | |
|---|---|---|---|---|---|---|---|
| Aluminum | 8000 | | 12.6 | 1 | 09/01/08 17:08 | BDG | 4656271 |
| Boron | ND | | 62.9 | 5 | 09/02/08 19:15 | BDG | 4659242 |
| Calcium | 5030 | | 12.6 | 1 | 09/01/08 17:08 | BDG | 4656271 |
| Iron | 11000 | | 2.52 | 1 | 09/01/08 17:08 | BDG | 4656271 |
| Magnesium | 2190 | | 12.6 | 1 | 09/01/08 17:08 | BDG | 4656271 |
| Potassium | 1400 | | 252 | 1 | 09/01/08 17:08 | BDG | 4656271 |
| Sodium | 132 | | 62.9 | 1 | 09/01/08 17:08 | BDG | 4656271 |
| Strontium | 65.5 | | 2.52 | 1 | 09/01/08 17:08 | BDG | 4656271 |
| Tin | ND | | 6.29 | 1 | 09/01/08 17:08 | BDG | 4656271 |
| Titanium | 48.4 | | 2.52 | 1 | 09/01/08 17:08 | BDG | 4656271 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3050B | 08/21/2008 11:40 | DDW | 1.00 |

**Qualifiers:**

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E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-4 (53-54.5) **Collected:** 08/15/2008 16:30 **SPL Sample ID:** 08080983-03

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **METALS BY METHOD 6020, TOTAL** | | | | **MCL** | **SW6020A** | **Units: mg/kg-dry** | |
| Antimony | ND | | 0.629 | 1 | 08/25/08 19:16 | PG | 4645637 |
| Arsenic | 2 | | 0.629 | 1 | 08/25/08 19:16 | PG | 4645637 |
| Barium | 161 | | 0.629 | 1 | 08/25/08 19:16 | PG | 4645637 |
| Beryllium | 0.583 | | 0.00503 | 1 | 08/26/08 20:46 | AL_H | 4647850 |
| Cadmium | ND | | 0.629 | 1 | 08/25/08 19:16 | PG | 4645637 |
| Chromium | 9.65 | | 0.00629 | 1 | 08/26/08 20:46 | AL_H | 4647850 |
| Cobalt | 4.12 | | 0.629 | 1 | 08/25/08 19:16 | PG | 4645637 |
| Copper | 7.26 | | 0.00629 | 1 | 08/26/08 20:46 | AL_H | 4647850 |
| Lead | 6.43 | | 0.629 | 1 | 08/25/08 19:16 | PG | 4645637 |
| Manganese | 159 | | 0.629 | 1 | 08/25/08 19:16 | PG | 4645637 |
| Molybdenum | ND | | 0.629 | 1 | 08/25/08 19:16 | PG | 4645637 |
| Nickel | 5.67 | | 0.629 | 1 | 08/25/08 19:16 | PG | 4645637 |
| Selenium | ND | | 0.629 | 1 | 08/25/08 19:16 | PG | 4645637 |
| Silver | ND | | 0.629 | 1 | 08/25/08 19:16 | PG | 4645637 |
| Thallium | 0.117 | | 0.00629 | 1 | 08/26/08 20:46 | AL_H | 4647850 |
| Tungsten | 3.05 | | 0.629 | 1 | 08/28/08 14:52 | PG | 4651672 |
| Vanadium | 11.4 | | 0.629 | 1 | 08/25/08 19:16 | PG | 4645637 |
| Zinc | 24.1 | | 1.26 | 1 | 08/25/08 19:16 | PG | 4645637 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3050B | 08/21/2008 11:40 | DDW | 1.00 |

| PERCENT MOISTURE | | | | MCL | D2216 | Units: wt% | |
|---|---|---|---|---|---|---|---|
| Percent Moisture | 20.5 | | 0 | 1 | 08/21/08 18:25 | IAB | 4638957 |

**Qualifiers:**

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TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-4 (53-54.5) **Collected:** 08/15/2008 16:30 **SPL Sample ID:** 08080983-03

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **SEMIVOLATILE ORGANICS BY METHOD 8270C** | | | **MCL** | **SW8270C** | **Units: ug/kg-dry** | | |
| 1,2,4-Trichlorobenzene | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 1,2-Dichlorobenzene | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 1,2-Diphenylhydrazine | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 1,3-Dichlorobenzene | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 1,4-Dichlorobenzene | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 2,4,5-Trichlorophenol | ND | | 1000 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 2,4,6-Trichlorophenol | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 2,4-Dichlorophenol | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 2,4-Dimethylphenol | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 2,4-Dinitrophenol | ND | | 1000 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 2,4-Dinitrotoluene | ND | | 1000 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 2,6-Dinitrotoluene | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 2-Chloronaphthalene | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 2-Chlorophenol | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 2-Methylnaphthalene | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 2-Nitroaniline | ND | | 1000 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 2-Nitrophenol | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 3,3'-Dichlorobenzidine | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 3-Nitroaniline | ND | | 1000 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 4,6-Dinitro-2-methylphenol | ND | | 1000 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 4-Bromophenyl phenyl ether | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 4-Chloro-3-methylphenol | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 4-Chloroaniline | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 4-Chlorophenyl phenyl ether | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 4-Nitroaniline | ND | | 1000 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 4-Nitrophenol | ND | | 1000 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Acenaphthene | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Acenaphthylene | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Aniline | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Anthracene | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Benz(a)anthracene | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Benzo(a)pyrene | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Benzo(b)fluoranthene | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Benzo(g,h,i)perylene | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Benzo(k)fluoranthene | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Benzoic acid | ND | | 2000 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Benzyl alcohol | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Bis(2-chloroethoxy)methane | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Bis(2-chloroethyl)ether | ND | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
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* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-4 (53-54.5) **Collected:** 08/15/2008 16:30 **SPL Sample ID:** 08080983-03

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|---|
| Bis(2-chloroisopropyl)ether | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Bis(2-ethylhexyl)phthalate | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Butyl benzyl phthalate | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Carbazole | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Chrysene | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Dibenz(a,h)anthracene | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Dibenzofuran | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Diethyl phthalate | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Dimethyl phthalate | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Di-n-butyl phthalate | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Di-n-octyl phthalate | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Fluoranthene | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Fluorene | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Hexachlorobenzene | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Hexachlorobutadiene | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Hexachlorocyclopentadiene | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Hexachloroethane | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Indeno(1,2,3-cd)pyrene | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Isophorone | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Naphthalene | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Nitrobenzene | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| N-Nitrosodi-n-propylamine | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| N-Nitrosodiphenylamine | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Pentachlorophenol | ND | | | 1000 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Phenanthrene | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Phenol | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Pyrene | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Pyridine | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 2-Methylphenol | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| 3 & 4-Methylphenol | ND | | | 420 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Surr: 2,4,6-Tribromophenol | 72.0 | | % | 19-135 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Surr: 2-Fluorobiphenyl | 76.5 | | % | 15-140 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Surr: 2-Fluorophenol | 72.0 | | % | 15-122 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Surr: Nitrobenzene-d5 | 64.7 | | % | 10-134 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Surr: Phenol-d5 | 72.0 | | % | 10-123 | 1 | 08/27/08 17:33 | GY | 4651388 |
| Surr: Terphenyl-d14 | 76.5 | | % | 18-166 | 1 | 08/27/08 17:33 | GY | 4651388 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3550B | 08/21/2008 13:34 | QMT | 1.00 |

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TNTC - Too numerous to count
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HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-4 (53-54.5) **Collected:** 08/15/2008 16:30 **SPL Sample ID:** 08080983-03

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANICS BY METHOD 8260B** | | | | **MCL** | **SW8260B** | **Units: ug/kg-dry** | |
| 1,1,1,2-Tetrachloroethane | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 1,1,1-Trichloroethane | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 1,1,2,2-Tetrachloroethane | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 1,1,2-Trichloroethane | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 1,1-Dichloroethane | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 1,1-Dichloroethene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 1,1-Dichloropropene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 1,2,3-Trichlorobenzene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 1,2,3-Trichloropropane | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 1,2,4-Trichlorobenzene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 1,2,4-Trimethylbenzene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 1,2-Dibromo-3-chloropropane | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 1,2-Dibromoethane | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 1,2-Dichlorobenzene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 1,2-Dichloroethane | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 1,2-Dichloropropane | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 1,3,5-Trimethylbenzene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 1,3-Dichlorobenzene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 1,3-Dichloropropane | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 1,4-Dichlorobenzene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 2,2-Dichloropropane | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 2-Butanone | ND | | 25 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 2-Chloroethyl vinyl ether | ND | | 13 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 2-Chlorotoluene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 2-Hexanone | ND | | 13 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 4-Chlorotoluene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 4-Isopropyltoluene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 4-Methyl-2-pentanone | ND | | 13 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Acetone | ND | | 130 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Acrylonitrile | ND | | 63 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Benzene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Bromobenzene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Bromochloromethane | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Bromodichloromethane | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Bromoform | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Bromomethane | ND | | 13 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Carbon disulfide | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Carbon tetrachloride | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Chlorobenzene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-4 (53-54.5) **Collected:** 08/15/2008 16:30 **SPL Sample ID:** 08080983-03

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| Chloroethane | ND | | 13 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Chloroform | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Chloromethane | ND | | 13 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Dibromochloromethane | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Dibromomethane | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Dichlorodifluoromethane | ND | | 13 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Ethylbenzene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Hexachlorobutadiene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Isopropylbenzene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Methyl tert-butyl ether | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Methylene chloride | 11 | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Naphthalene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| n-Butylbenzene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| n-Propylbenzene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| sec-Butylbenzene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Styrene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| tert-Butylbenzene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Tetrachloroethene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Toluene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Trichloroethene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Trichlorofluoromethane | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Vinyl acetate | ND | | 13 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Vinyl chloride | ND | | 13 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| cis-1,2-Dichloroethene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| cis-1,3-Dichloropropene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| m,p-Xylene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| o-Xylene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| trans-1,2-Dichloroethene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| trans-1,3-Dichloropropene | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Xylenes,Total | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| 1,2-Dichloroethene (total) | ND | | 6.3 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Surr: 1,2-Dichloroethane-d4 | 104 | | % 64-130 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Surr: 4-Bromofluorobenzene | 92.0 | | % 62-130 | 1 | 08/21/08 14:15 | TLE | 4640314 |
| Surr: Toluene-d8 | 100 | | % 70-140 | 1 | 08/21/08 14:15 | TLE | 4640314 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW5030B | 08/20/2008 17:23 | AG | 1.00 |

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TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
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# *Quality Control Documentation*

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Diesel Range Organics
**Method:** SW8015B

**WorkOrder:** 08080983
**Lab Batch ID:** 82928

### Method Blank

RunID: HP_Z_080821A-4640300 Units: mg/kg
Analysis Date: 08/21/2008 15:24 Analyst: NW
Preparation Date: 08/21/2008 11:25 Prep By: QMT Method SW3550B

| Analyte | Result | Rep Limit |
|---|---|---|
| Diesel Range Organics (C10-C28) | ND | 5.0 |
| Surr: n-Pentacosane | 79.8 | 20-154 |

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08080983-01B | MW-2 (58.0-59.5) |
| 08080983-02B | MW-3 (57-58.5) |
| 08080983-03B | MW-4 (53-54.5) |

### Laboratory Control Sample (LCS)

RunID: HP_Z_080821A-4640301 Units: mg/kg
Analysis Date: 08/21/2008 15:46 Analyst: NW
Preparation Date: 08/21/2008 11:25 Prep By: QMT Method SW3550B

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Diesel Range Organics (C10-C28) | 66.6 | 58.5 | 87.9 | 57 | 150 |
| Surr: n-Pentacosane | 1.66 | 1.43 | 86.3 | 20 | 154 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08081052-02
RunID: HP_Z_080821A-4640304 Units: mg/kg
Analysis Date: 08/21/2008 16:50 Analyst: NW
Preparation Date: 08/21/2008 11:25 Prep By: QMT Method SW3550B

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (C10-C28) | 5.03 | 66.6 | 58.2 | 79.9 | 66.6 | 73.8 | 103 | 23.5 | 50 | 21 | 175 |
| Surr: n-Pentacosane | ND | 1.66 | 1.08 | 65.0 | 1.66 | 1.35 | 81.6 | 22.6 | 30 | 20 | 154 |

**Qualifiers:**

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E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
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QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Gasoline Range Organics
**Method:** SW8015B
**WorkOrder:** 08080983
**Lab Batch ID:** R249116

### Method Blank

RunID: HP_O_080821A-4640502 Units: mg/kg
Analysis Date: 08/21/2008 14:59 Analyst: SFE
Preparation Date: 08/21/2008 14:59 Prep By: Method

| Analyte | Result | Rep Limit |
|---|---|---|
| Gasoline Range Organics | ND | 0.10 |
| Surr: 1,4-Difluorobenzene | 101.9 | 63-142 |
| Surr: 4-Bromofluorobenzene | 92.9 | 50-159 |

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08080983-01B | MW-2 (58.0-59.5) |
| 08080983-02B | MW-3 (57-58.5) |
| 08080983-03B | MW-4 (53-54.5) |

### Laboratory Control Sample (LCS)

RunID: HP_O_080821A-4640501 Units: mg/kg
Analysis Date: 08/21/2008 14:30 Analyst: SFE
Preparation Date: 08/21/2008 14:30 Prep By: Method SW5030B

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Gasoline Range Organics | 1.00 | 1.03 | 103 | 70 | 130 |
| Surr: 1,4-Difluorobenzene | 0.100 | 0.102 | 102 | 63 | 142 |
| Surr: 4-Bromofluorobenzene | 0.100 | 0.0941 | 94.1 | 50 | 159 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08080981-01
RunID: HP_O_080821A-4640505 Units: mg/kg-dry
Analysis Date: 08/21/2008 16:27 Analyst: SFE
Preparation Date: 08/21/2008 11:21 Prep By: XML Method SW5030B

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics | ND | 1.15 | 0.952 | 83.1 | 1.15 | 0.785 | 68.6 | 19.2 | 50 | 26 | 147 |
| Surr: 1,4-Difluorobenzene | ND | 0.115 | 0.118 | 103 | 0.115 | 0.117 | 102 | 0.195 | 30 | 63 | 142 |
| Surr: 4-Bromofluorobenzene | ND | 0.115 | 0.109 | 95.2 | 0.115 | 0.111 | 96.6 | 1.46 | 30 | 50 | 159 |

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TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits



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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Metals by Method 6010B, Total
**Method:** SW6010B
**WorkOrder:** 08080983
**Lab Batch ID:** 82930

### Method Blank

RunID: TJA_080822A-4640867 Units: mg/kg
Analysis Date: 08/22/2008 14:13 Analyst: BDG
Preparation Date: 08/21/2008 11:40 Prep By: DD Method SW3050B

| Analyte | Result | Rep Limit |
|---|---|---|
| Boron | ND | 10 |

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08080983-01B | MW-2 (58.0-59.5) |
| 08080983-02B | MW-3 (57-58.5) |
| 08080983-03B | MW-4 (53-54.5) |

### Laboratory Control Sample (LCS)

RunID: TJA_080822A-4640868 Units: mg/kg
Analysis Date: 08/22/2008 14:17 Analyst: BDG
Preparation Date: 08/21/2008 11:40 Prep By: DD Method SW3050B

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Boron | 96.60 | 72.33 | 74.88 | 56 | 144 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08080929-01
RunID: TJA_080822A-4640870 Units: mg/kg
Analysis Date: 08/22/2008 14:27 Analyst: BDG
Preparation Date: 08/21/2008 11:40 Prep By: DD Method SW3050B

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Boron | ND | 100 | 82.06 | 78.54 | 100 | 83.44 | 79.92 | 1.664 | 20 | 75 | 125 |

**Qualifiers:**

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J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Metals by Method 6020, Total
**Method:** SW6020A
**WorkOrder:** 08080983
**Lab Batch ID:** 82930A-I

### Method Blank

RunID: ICPMS_080825B-4644562 Units: mg/kg
Analysis Date: 08/25/2008 17:55 Analyst: PG
Preparation Date: 08/21/2008 11:40 Prep By: DD Method SW3050B

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08080983-01B | MW-2 (58.0-59.5) |
| 08080983-02B | MW-3 (57-58.5) |
| 08080983-03B | MW-4 (53-54.5) |

| Analyte | Result | Rep Limit |
|---|---|---|
| Antimony | ND | 0.5 |
| Arsenic | ND | 0.5 |
| Barium | ND | 0.5 |
| Cadmium | ND | 0.5 |
| Cobalt | ND | 0.5 |
| Lead | ND | 0.5 |
| Manganese | ND | 0.5 |
| Molybdenum | ND | 0.5 |
| Nickel | ND | 0.5 |
| Selenium | ND | 0.5 |
| Silver | ND | 0.5 |
| Vanadium | ND | 0.5 |
| Zinc | ND | 1 |

### Laboratory Control Sample (LCS)

RunID: ICPMS_080825B-4644556 Units: mg/kg
Analysis Date: 08/25/2008 17:22 Analyst: PG
Preparation Date: 08/21/2008 11:40 Prep By: DD Method SW3050B

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Antimony | 77.50 | 79.25 | 102.3 | 30 | 223 |
| Arsenic | 80.90 | 75.64 | 93.50 | 79 | 121 |
| Barium | 156.0 | 142.4 | 91.28 | 82 | 119 |
| Cadmium | 233.0 | 219.3 | 94.12 | 81 | 119 |
| Cobalt | 68.60 | 68.43 | 99.75 | 82 | 118 |
| Lead | 76.80 | 71.56 | 93.18 | 81 | 120 |
| Manganese | 304.0 | 304.3 | 100.1 | 80 | 120 |
| Molybdenum | 58.40 | 55.12 | 94.38 | 79 | 121 |
| Nickel | 49.60 | 50.78 | 102.4 | 81 | 119 |
| Selenium | 82.90 | 85.89 | 103.6 | 76 | 124 |
| Silver | 80.00 | 83.76 | 104.7 | 61 | 139 |
| Vanadium | 72.40 | 68.00 | 93.92 | 71 | 128 |
| Zinc | 116.0 | 117.4 | 101.2 | 78 | 122 |

### Post Digestion Spike (PDS) / Post Digestion Spike Duplicate (PDSD)

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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## Quality Control Report

### Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Metals by Method 6020, Total
**Method:** SW6020A
**WorkOrder:** 08080983
**Lab Batch ID:** 82930A-I

Sample Spiked: 08080929-01
RunID: ICPMS_080825B-4644565 Units: mg/kg
Analysis Date: 08/25/2008 18:11 Analyst: PG

| Analyte | Sample Result | PDS Spike Added | PDS Result | PDS % Recovery | PDSD Spike Added | PDSD Result | PDSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 2.77 | 10 | 12.03 | 92.58 | 10 | 12.06 | 92.88 | 0.2491 | 20 | 75 | 125 |
| Nickel | 12.8 | 10 | 32.9 | 201.3 * | 10 | 32.73 | 199.6 * | 0.5181 | 20 | 75 | 125 |

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: 08080929-01
RunID: ICPMS_080825B-4644558 Units: mg/kg
Analysis Date: 08/25/2008 17:33 Analyst: PG
Preparation Date: 08/21/2008 11:40 Prep By: DD Method SW3050B

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 2.772 | 10 | 6.389 | 36.17 * | 10 | 5.873 | 31.01 * | 8.416 | 20 | 75 | 125 |
| Arsenic | 2.670 | 10 | 11.58 | 89.10 | 10 | 11.10 | 84.30 | 4.233 | 20 | 75 | 125 |
| Barium | 66.03 | 10 | 72.53 | N/C | 10 | 73.46 | N/C | N/C | 20 | 75 | 125 |
| Cadmium | ND | 10 | 9.258 | 89.64 | 10 | 8.714 | 84.20 | 6.054 | 20 | 75 | 125 |
| Cobalt | 2.241 | 10 | 11.33 | 90.89 | 10 | 10.83 | 85.89 | 4.513 | 20 | 75 | 125 |
| Lead | 396.9 | 10 | 32.31 | N/C | 10 | 33.18 | N/C | N/C | 20 | 75 | 125 |
| Manganese | 97.24 | 10 | 99.89 | N/C | 10 | 102.3 | N/C | N/C | 20 | 75 | 125 |
| Molybdenum | 2.930 | 10 | 12.35 | 94.20 | 10 | 10.88 | 79.50 | 12.66 | 20 | 75 | 125 |
| Nickel | 12.77 | 10 | 19.79 | 70.20 * | 10 | 22.91 | 101.4 | 14.61 | 20 | 75 | 125 |
| Selenium | ND | 10 | 9.245 | 89.96 | 10 | 9.030 | 87.80 | 2.353 | 20 | 75 | 125 |
| Silver | ND | 10 | 9.925 | 97.23 | 10 | 9.210 | 90.08 | 7.473 | 20 | 75 | 125 |
| Vanadium | 10.51 | 10 | 20.57 | 100.6 | 10 | 19.58 | 90.70 | 4.932 | 20 | 75 | 125 |
| Zinc | 196.1 | 10 | 211.6 | N/C | 10 | 207.5 | N/C | N/C | 20 | 75 | 125 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Metals by Method 6020, Total
**Method:** SW6020A
**WorkOrder:** 08080983
**Lab Batch ID:** 82930B-I

### Method Blank

RunID: ICPMS_080826A-4647835 Units: mg/kg
Analysis Date: 08/26/2008 19:33 Analyst: AL_H
Preparation Date: 08/21/2008 11:40 Prep By: DD Method SW3050B

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08080983-01B | MW-2 (58.0-59.5) |
| 08080983-02B | MW-3 (57-58.5) |
| 08080983-03B | MW-4 (53-54.5) |

| Analyte | Result | Rep Limit |
|---|---|---|
| Beryllium | ND | 0.4 |
| Chromium | ND | 0.5 |
| Copper | ND | 0.5 |
| Thallium | ND | 0.5 |

### Laboratory Control Sample (LCS)

RunID: ICPMS_080826A-4647836 Units: mg/kg
Analysis Date: 08/26/2008 19:38 Analyst: AL_H
Preparation Date: 08/21/2008 11:40 Prep By: DD Method SW3050B

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Beryllium | 143.0 | 146.6 | 102.5 | 82 | 118 |
| Chromium | 60.80 | 64.46 | 106.0 | 78 | 121 |
| Copper | 131.0 | 135.9 | 103.7 | 79 | 118 |
| Thallium | 158.0 | 154.6 | 97.85 | 76 | 125 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08080929-01
RunID: ICPMS_080826A-4647838 Units: mg/kg
Analysis Date: 08/26/2008 19:48 Analyst: AL_H
Preparation Date: 08/21/2008 11:40 Prep By: DD Method SW3050B

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Beryllium | ND | 10 | 9.719 | 94.98 | 10 | 9.394 | 91.73 | 3.401 | 20 | 75 | 125 |
| Chromium | 79.15 | 10 | 31.64 | N/C | 10 | 29.66 | N/C | N/C | 20 | 75 | 125 |
| Copper | 48.61 | 10 | 237.5 | N/C | 10 | 56.07 | N/C | N/C | 20 | 75 | 125 |
| Thallium | ND | 10 | 10.08 | 97.57 | 10 | 9.582 | 92.59 | 5.066 | 20 | 75 | 125 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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## Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Metals by Method 6020, Total
**Method:** SW6020A
**WorkOrder:** 08080983
**Lab Batch ID:** 82930C-I

### Method Blank

RunID: ICPMS_080828A-4651657 Units: mg/kg
Analysis Date: 08/28/2008 13:19 Analyst: PG
Preparation Date: 08/21/2008 11:40 Prep By: DD Method SW3050B

| Analyte | Result | Rep Limit |
|---|---|---|
| Tungsten | ND | 0.5 |

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08080983-01B | MW-2 (58.0-59.5) |
| 08080983-02B | MW-3 (57-58.5) |
| 08080983-03B | MW-4 (53-54.5) |

### Post Digestion Spike (PDS) / Post Digestion Spike Duplicate (PDSD)

Sample Spiked: 08080929-01
RunID: ICPMS_080828A-4651669 Units: mg/kg
Analysis Date: 08/28/2008 14:37 Analyst: PG

| Analyte | Sample Result | PDS Spike Added | PDS Result | PDS % Recovery | PDSD Spike Added | PDSD Result | PDSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Tungsten | ND | 10 | 7.946 | 79.46 | 10 | 8.266 | 82.66 | 3.948 | 20 | 75 | 125 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08080929-01
RunID: ICPMS_080828A-4651660 Units: mg/kg
Analysis Date: 08/28/2008 13:34 Analyst: PG
Preparation Date: 08/21/2008 11:40 Prep By: DD Method SW3050B

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Tungsten | ND | 10 | D | D | 10 | D | D | D | 20 | 75 | 125 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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## Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** *Metals by Method 6010B, Total* **WorkOrder:** 08080983
**Method:** SW6010B **Lab Batch ID:** 82930d

### Method Blank

RunID: TJA_080901A-4656783 Units: mg/kg
Analysis Date: 09/01/2008 19:45 Analyst: BDG
Preparation Date: 08/21/2008 11:40 Prep By: DD Method SW3050B

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08080983-01B | MW-2 (58.0-59.5) |
| 08080983-02B | MW-3 (57-58.5) |
| 08080983-03B | MW-4 (53-54.5) |

| Analyte | Result | Rep Limit |
|---|---|---|
| Aluminum | ND | 10 |
| Calcium | ND | 10 |
| Iron | ND | 2 |
| Magnesium | ND | 10 |
| Potassium | ND | 200 |
| Sodium | ND | 50 |
| Strontium | ND | 2 |
| Tin | ND | 5 |
| Titanium | ND | 2 |

### Laboratory Control Sample (LCS)

RunID: TJA_080901A-4656773 Units: mg/kg
Analysis Date: 09/01/2008 16:04 Analyst: BDG
Preparation Date: 08/21/2008 11:40 Prep By: DD Method SW3050B

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Aluminum | 7590 | 7306 | 96.26 | 58 | 142 |
| Calcium | 4320 | 4269 | 98.83 | 79 | 121 |
| Iron | 14400 | 15930 | 110.6 | 52 | 149 |
| Magnesium | 2220 | 2256 | 101.6 | 77 | 123 |
| Potassium | 2380 | 2327 | 97.76 | 71 | 129 |
| Sodium | 456.0 | 371.7 | 81.51 | 56 | 144 |
| Strontium | 113.0 | 110.0 | 97.35 | 80 | 120 |
| Tin | 175.0 | 168.9 | 96.51 | 70 | 130 |
| Titanium | 281.0 | 297.1 | 105.7 | 40 | 160 |

### Post Digestion Spike (PDS) / Post Digestion Spike Duplicate (PDSD)

Sample Spiked: 08080929-01
RunID: TJA_080901A-4656780 Units: mg/kg
Analysis Date: 09/01/2008 16:27 Analyst: BDG

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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**Quality Control Report**

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Metals by Method 6010B, Total **WorkOrder:** 08080983
**Method:** SW6010B **Lab Batch ID:** 82930d

| Analyte | Sample Result | PDS Spike Added | PDS Result | PDS % Recovery | PDSD Spike Added | PDSD Result | PDSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Potassium | 747 | 1000 | 1763 | 101.7 | 1000 | 1765 | 101.9 | 0.1127 | 20 | 75 | 125 |
| Titanium | 76 | 100 | 173.3 | 97.36 | 100 | 169.8 | 93.85 | 2.044 | 20 | 75 | 125 |

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: 08080929-01
RunID: TJA_080901A-4656776 Units: mg/kg
Analysis Date: 09/01/2008 16:13 Analyst: BDG
Preparation Date: 08/21/2008 11:40 Prep By: DD Method SW3050B

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 4385 | 100 | 6513 | N/C | 100 | 7805 | N/C | N/C | 20 | 75 | 125 |
| Iron | 7090 | 100 | 7452 | N/C | 100 | 7854 | N/C | N/C | 20 | 75 | 125 |
| Magnesium | 4376 | 100 | 4025 | N/C | 100 | 4651 | N/C | N/C | 20 | 75 | 125 |
| Potassium | 746.6 | 1000 | 2024 | 127.7 * | 1000 | 2202 | 145.5 * | 8.404 | 20 | 75 | 125 |
| Sodium | 221.5 | 100 | 337.5 | 116.0 | 100 | 346.3 | 124.8 | 2.574 | 20 | 75 | 125 |
| Strontium | 144.2 | 100 | 244.3 | 100.1 | 100 | 257.6 | 113.5 | 5.306 | 20 | 75 | 125 |
| Tin | ND | 100 | 93.46 | 92.37 | 100 | 92.91 | 91.83 | 0.5806 | 20 | 75 | 125 |
| Titanium | 75.95 | 100 | 200.7 | 124.7 | 100 | 219.4 | 143.4 * | 8.903 | 20 | 75 | 125 |

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: 08080929-01
RunID: TJA_080901A-4656785 Units: mg/kg
Analysis Date: 09/01/2008 19:59 Analyst: BDG
Preparation Date: 08/21/2008 11:40 Prep By: DD Method SW3050B

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | 41530 | 100 | 38560 | N/C | 100 | 39050 | N/C | N/C | 20 | 75 | 125 |

**Qualifiers:**

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B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits



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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Mercury, Total **WorkOrder:** 08080983
**Method:** SW7471A **Lab Batch ID:** 83035

### Method Blank

RunID: HGLC_080825A-4644295 Units: mg/kg
Analysis Date: 08/25/2008 15:26 Analyst: CMC
Preparation Date: 08/25/2008 12:15 Prep By: CMC Method SW7471A

| Analyte | Result | Rep Limit |
|---|---|---|
| Mercury | ND | 0.03 |

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08080983-01B | MW-2 (58.0-59.5) |
| 08080983-02B | MW-3 (57-58.5) |
| 08080983-03B | MW-4 (53-54.5) |

### Laboratory Control Sample (LCS)

RunID: HGLC_080825A-4644314 Units: mg/kg
Analysis Date: 08/25/2008 16:17 Analyst: CMC
Preparation Date: 08/25/2008 12:15 Prep By: CMC Method SW7471A

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Mercury | 3.600 | 4.234 | 117.6 | 68 | 132 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08080981-01
RunID: HGLC_080825A-4644297 Units: mg/kg-dry
Analysis Date: 08/25/2008 15:34 Analyst: CMC
Preparation Date: 08/25/2008 12:15 Prep By: CMC Method SW7471A

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | ND | 0.3436 | 0.3188 | 88.28 | 0.3436 | 0.3348 | 92.95 | 4.904 | 20 | 75 | 125 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits



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## Quality Control Report

**Conoco Phillips**
**COP Johnson Fed4**

**Analysis:** Semivolatile Organics by Method 8270C
**Method:** SW8270C
**WorkOrder:** 08080983
**Lab Batch ID:** 82934

**Method Blank**

RunID: H_080827F-4651381
Units: ug/kg
Analysis Date: 08/27/2008 11:03
Analyst: GY
Preparation Date: 08/21/2008 13:34
Prep By: QMT Method SW3550B

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08080983-01B | MW-2 (58.0-59.5) |
| 08080983-02B | MW-3 (57-58.5) |
| 08080983-03B | MW-4 (53-54.5) |

| Analyte | Result | Rep Limit |
|---|---|---|
| 1,2,4-Trichlorobenzene | ND | 330 |
| 1,2-Dichlorobenzene | ND | 330 |
| 1,2-Diphenylhydrazine | ND | 330 |
| 1,3-Dichlorobenzene | ND | 330 |
| 1,4-Dichlorobenzene | ND | 330 |
| 2,4,5-Trichlorophenol | ND | 800 |
| 2,4,6-Trichlorophenol | ND | 330 |
| 2,4-Dichlorophenol | ND | 330 |
| 2,4-Dimethylphenol | ND | 330 |
| 2,4-Dinitrophenol | ND | 800 |
| 2,4-Dinitrotoluene | ND | 800 |
| 2,6-Dinitrotoluene | ND | 330 |
| 2-Chloronaphthalene | ND | 330 |
| 2-Chlorophenol | ND | 330 |
| 2-Methylnaphthalene | ND | 330 |
| 2-Nitroaniline | ND | 800 |
| 2-Nitrophenol | ND | 330 |
| 3,3'-Dichlorobenzidine | ND | 330 |
| 3-Nitroaniline | ND | 800 |
| 4,6-Dinitro-2-methylphenol | ND | 800 |
| 4-Bromophenyl phenyl ether | ND | 330 |
| 4-Chloro-3-methylphenol | ND | 330 |
| 4-Chloroaniline | ND | 330 |
| 4-Chlorophenyl phenyl ether | ND | 330 |
| 4-Nitroaniline | ND | 800 |
| 4-Nitrophenol | ND | 800 |
| Acenaphthene | ND | 330 |
| Acenaphthylene | ND | 330 |
| Aniline | ND | 330 |
| Anthracene | ND | 330 |
| Benz(a)anthracene | ND | 330 |
| Benzo(a)pyrene | ND | 330 |
| Benzo(b)fluoranthene | ND | 330 |
| Benzo(g,h,i)perylene | ND | 330 |
| Benzo(k)fluoranthene | ND | 330 |
| Benzoic acid | ND | 1600 |
| Benzyl alcohol | ND | 330 |
| Bis(2-chloroethoxy)methane | ND | 330 |
| Bis(2-chloroethyl)ether | ND | 330 |
| Bis(2-chloroisopropyl)ether | ND | 330 |
| Bis(2-ethylhexyl)phthalate | ND | 330 |
| Butyl benzyl phthalate | ND | 330 |
| Carbazole | ND | 330 |
| Chrysene | ND | 330 |
| Dibenz(a,h)anthracene | ND | 330 |
| Dibenzofuran | ND | 330 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Semivolatile Organics by Method 8270C
**Method:** SW8270C
**WorkOrder:** 08080983
**Lab Batch ID:** 82934

### Method Blank

RunID: H_080827F-4651381 Units: ug/kg
Analysis Date: 08/27/2008 11:03 Analyst: GY
Preparation Date: 08/21/2008 13:34 Prep By: QMT Method SW3550B

| Analyte | Result | Rep Limit |
|---|---|---|
| Diethyl phthalate | ND | 330 |
| Dimethyl phthalate | ND | 330 |
| Di-n-butyl phthalate | ND | 330 |
| Di-n-octyl phthalate | ND | 330 |
| Fluoranthene | ND | 330 |
| Fluorene | ND | 330 |
| Hexachlorobenzene | ND | 330 |
| Hexachlorobutadiene | ND | 330 |
| Hexachlorocyclopentadiene | ND | 330 |
| Hexachloroethane | ND | 330 |
| Indeno(1,2,3-cd)pyrene | ND | 330 |
| Isophorone | ND | 330 |
| Naphthalene | ND | 330 |
| Nitrobenzene | ND | 330 |
| N-Nitrosodi-n-propylamine | ND | 330 |
| N-Nitrosodiphenylamine | ND | 330 |
| Pentachlorophenol | ND | 800 |
| Phenanthrene | ND | 330 |
| Phenol | ND | 330 |
| Pyrene | ND | 330 |
| Pyridine | ND | 330 |
| 2-Methylphenol | ND | 330 |
| 3 & 4-Methylphenol | ND | 330 |
| Surr: 2,4,6-Tribromophenol | 92.0 | 19-135 |
| Surr: 2-Fluorobiphenyl | 94.1 | 15-140 |
| Surr: 2-Fluorophenol | 88.0 | 15-122 |
| Surr: Nitrobenzene-d5 | 82.4 | 10-134 |
| Surr: Phenol-d5 | 92.0 | 10-123 |
| Surr: Terphenyl-d14 | 88.2 | 18-166 |

### Laboratory Control Sample (LCS)

RunID: H_080827F-4651386 Units: ug/kg
Analysis Date: 08/27/2008 16:28 Analyst: GY
Preparation Date: 08/21/2008 13:34 Prep By: QMT Method SW3550B

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 850 | 460 | 54.1 | 34 | 116 |
| 1,2-Dichlorobenzene | 850 | 450 | 52.9 | 32 | 129 |
| 1,2-Diphenylhydrazine | 850 | 430 | 50.6 | 10 | 256 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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## Quality Control Report

### Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Semivolatile Organics by Method 8270C **WorkOrder:** 08080983
**Method:** SW8270C **Lab Batch ID:** 82934

**Laboratory Control Sample (LCS)**

RunID: H_080827F-4651386 Units: ug/kg
Analysis Date: 08/27/2008 16:28 Analyst: GY
Preparation Date: 08/21/2008 13:34 Prep By: QMT Method SW3550B

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| 1,3-Dichlorobenzene | 850 | 450 | 52.9 | 10 | 172 |
| 1,4-Dichlorobenzene | 850 | 440 | 51.8 | 20 | 124 |
| 2,4,5-Trichlorophenol | 850 | 500 | 58.8 | 40 | 150 |
| 2,4,6-Trichlorophenol | 850 | 490 | 57.6 | 37 | 144 |
| 2,4-Dichlorophenol | 850 | 480 | 56.5 | 39 | 135 |
| 2,4-Dimethylphenol | 850 | 460 | 54.1 | 32 | 119 |
| 2,4-Dinitrophenol | 850 | 580 | 68.2 | 10 | 191 |
| 2,4-Dinitrotoluene | 850 | 500 | 58.8 | 30 | 150 |
| 2,6-Dinitrotoluene | 850 | 480 | 56.5 | 30 | 150 |
| 2-Chloronaphthalene | 850 | 500 | 58.8 | 20 | 175 |
| 2-Chlorophenol | 850 | 480 | 56.5 | 23 | 134 |
| 2-Methylnaphthalene | 850 | 490 | 57.6 | 30 | 135 |
| 2-Nitroaniline | 850 | 450 | 52.9 | 20 | 175 |
| 2-Nitrophenol | 850 | 480 | 56.5 | 29 | 182 |
| 3,3'-Dichlorobenzidine | 850 | 460 | 54.1 | 10 | 261 |
| 3-Nitroaniline | 850 | 480 | 56.5 | 20 | 175 |
| 4,6-Dinitro-2-methylphenol | 850 | 570 | 67.1 | 10 | 181 |
| 4-Bromophenyl phenyl ether | 850 | 540 | 63.5 | 20 | 175 |
| 4-Chloro-3-methylphenol | 850 | 510 | 60.0 | 22 | 147 |
| 4-Chloroaniline | 850 | 480 | 56.5 | 20 | 175 |
| 4-Chlorophenyl phenyl ether | 850 | 580 | 68.2 | 25 | 158 |
| 4-Nitroaniline | 850 | 490 | 57.6 | 20 | 175 |
| 4-Nitrophenol | 850 | 500 | 58.8 | 10 | 132 |
| Acenaphthene | 850 | 480 | 56.5 | 30 | 160 |
| Acenaphthylene | 850 | 480 | 56.5 | 10 | 150 |
| Aniline | 1700 | 850 | 50.0 | 10 | 160 |
| Anthracene | 850 | 500 | 58.8 | 27 | 133 |
| Benz(a)anthracene | 850 | 500 | 58.8 | 33 | 143 |
| Benzo(a)pyrene | 850 | 490 | 57.6 | 17 | 163 |
| Benzo(b)fluoranthene | 850 | 500 | 58.8 | 24 | 159 |
| Benzo(g,h,i)perylene | 850 | 450 | 52.9 | 10 | 219 |
| Benzo(k)fluoranthene | 850 | 480 | 56.5 | 11 | 162 |
| Benzoic acid | 850 | 540 | 63.5 | 10 | 450 |
| Benzyl alcohol | 850 | 340 | 40.0 | 30 | 160 |

**Qualifiers:**

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## Quality Control Report

**Conoco Phillips**
**COP Johnson Fed4**

**Analysis:** Semivolatile Organics by Method 8270C
**Method:** SW8270C
**WorkOrder:** 08080983
**Lab Batch ID:** 82934

**Laboratory Control Sample (LCS)**

RunID: H_080827F-4651386
Analysis Date: 08/27/2008 16:28
Preparation Date: 08/21/2008 13:34
Units: ug/kg
Analyst: GY
Prep By: QMT Method SW3550B

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Bis(2-chloroethoxy)methane | 850 | 830 | 97.6 | 33 | 184 |
| Bis(2-chloroethyl)ether | 850 | 520 | 61.2 | 28 | 158 |
| Bis(2-chloroisopropyl)ether | 850 | 510 | 60.0 | 36 | 166 |
| Bis(2-ethylhexyl)phthalate | 850 | 550 | 64.7 | 10 | 158 |
| Butyl benzyl phthalate | 850 | 580 | 68.2 | 10 | 152 |
| Carbazole | 850 | 510 | 60.0 | 45 | 135 |
| Chrysene | 850 | 500 | 58.8 | 17 | 168 |
| Dibenz(a,h)anthracene | 850 | 470 | 55.3 | 10 | 227 |
| Dibenzofuran | 850 | 500 | 58.8 | 30 | 160 |
| Diethyl phthalate | 850 | 530 | 62.4 | 10 | 160 |
| Dimethyl phthalate | 850 | 540 | 63.5 | 10 | 112 |
| Di-n-butyl phthalate | 850 | 570 | 67.1 | 10 | 118 |
| Di-n-octyl phthalate | 850 | 540 | 63.5 | 10 | 146 |
| Fluoranthene | 850 | 510 | 60.0 | 26 | 137 |
| Fluorene | 850 | 490 | 57.6 | 35 | 135 |
| Hexachlorobenzene | 850 | 500 | 58.8 | 10 | 152 |
| Hexachlorobutadiene | 850 | 460 | 54.1 | 20 | 140 |
| Hexachlorocyclopentadiene | 850 | 310 | 36.5 | 10 | 152 |
| Hexachloroethane | 850 | 430 | 50.6 | 25 | 118 |
| Indeno(1,2,3-cd)pyrene | 850 | 480 | 56.5 | 10 | 171 |
| Isophorone | 850 | 480 | 56.5 | 21 | 196 |
| Naphthalene | 850 | 470 | 55.3 | 21 | 133 |
| Nitrobenzene | 850 | 420 | 49.4 | 35 | 180 |
| N-Nitrosodi-n-propylamine | 850 | 470 | 55.3 | 10 | 230 |
| N-Nitrosodiphenylamine | 1700 | 1400 | 82.4 | 30 | 160 |
| Pentachlorophenol | 850 | 520 | 61.2 | 14 | 176 |
| Phenanthrene | 850 | 500 | 58.8 | 35 | 135 |
| Phenol | 850 | 500 | 58.8 | 44 | 120 |
| Pyrene | 850 | 510 | 60.0 | 34 | 138 |
| Pyridine | 1700 | 740 | 43.5 | 10 | 150 |
| 2-Methylphenol | 850 | 470 | 55.3 | 40 | 160 |
| 3 & 4-Methylphenol | 850 | 550 | 64.7 | 40 | 160 |
| Surr: 2,4,6-Tribromophenol | 2500 | 1600 | 64.0 | 19 | 135 |
| Surr: 2-Fluorobiphenyl | 1700 | 1000 | 58.8 | 15 | 140 |

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MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Semivolatile Organics by Method 8270C
**Method:** SW8270C
**WorkOrder:** 08080983
**Lab Batch ID:** 82934

### Laboratory Control Sample (LCS)

RunID: H_080827F-4651386
Analysis Date: 08/27/2008 16:28
Preparation Date: 08/21/2008 13:34
Units: ug/kg
Analyst: GY
Prep By: QMT Method SW3550B

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Surr: 2-Fluorophenol | 2500 | 1400 | 56.0 | 15 | 122 |
| Surr: Nitrobenzene-d5 | 1700 | 930 | 54.7 | 32 | 153 |
| Surr: Phenol-d5 | 2500 | 1500 | 60.0 | 10 | 123 |
| Surr: Terphenyl-d14 | 1700 | 1000 | 58.8 | 18 | 166 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08080981-01
RunID: H_080827F-4651392
Analysis Date: 08/27/2008 19:43
Preparation Date: 08/21/2008 13:34
Units: ug/kg-dry
Analyst: GY
Prep By: QMT Method SW3550B

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND | 974 | 699 | 71.8 | 974 | 710 | 72.9 | 1.63 | 28 | 34 | 116 |
| 1,2-Dichlorobenzene | ND | 974 | 710 | 72.9 | 974 | 710 | 72.9 | 0 | 60 | 32 | 129 |
| 1,2-Diphenylhydrazine | ND | 974 | 653 | 67.1 | 974 | 641 | 65.9 | 1.77 | 60 | 10 | 256 |
| 1,3-Dichlorobenzene | ND | 974 | 687 | 70.6 | 974 | 687 | 70.6 | 0 | 60 | 10 | 172 |
| 1,4-Dichlorobenzene | ND | 974 | 676 | 69.4 | 974 | 687 | 70.6 | 1.68 | 28 | 20 | 124 |
| 2,4,5-Trichlorophenol | ND | 974 | 767 | 78.8 | 974 | 767 | 78.8 | 0 | 60 | 40 | 150 |
| 2,4,6-Trichlorophenol | ND | 974 | 733 | 75.3 | 974 | 745 | 76.5 | 1.55 | 60 | 37 | 144 |
| 2,4-Dichlorophenol | ND | 974 | 745 | 76.5 | 974 | 745 | 76.5 | 0 | 60 | 39 | 135 |
| 2,4-Dimethylphenol | ND | 974 | 722 | 74.1 | 974 | 699 | 71.8 | 3.23 | 60 | 32 | 119 |
| 2,4-Dinitrophenol | ND | 974 | 825 | 84.7 | 974 | 756 | 77.6 | 8.70 | 60 | 10 | 191 |
| 2,4-Dinitrotoluene | ND | 974 | 779 | 80.0 | 974 | 779 | 80.0 | 0 | 50 | 30 | 150 |
| 2,6-Dinitrotoluene | ND | 974 | 733 | 75.3 | 974 | 767 | 78.8 | 4.58 | 60 | 30 | 150 |
| 2-Chloronaphthalene | ND | 974 | 745 | 76.5 | 974 | 779 | 80.0 | 4.51 | 60 | 20 | 175 |
| 2-Chlorophenol | ND | 974 | 722 | 74.1 | 974 | 733 | 75.3 | 1.57 | 40 | 23 | 134 |
| 2-Methylnaphthalene | ND | 974 | 745 | 76.5 | 974 | 756 | 77.6 | 1.53 | 60 | 30 | 135 |
| 2-Nitroaniline | ND | 974 | 699 | 71.8 | 974 | 722 | 74.1 | 3.23 | 60 | 20 | 175 |
| 2-Nitrophenol | ND | 974 | 745 | 76.5 | 974 | 767 | 78.8 | 3.03 | 60 | 29 | 182 |
| 3,3'-Dichlorobenzidine | ND | 974 | 733 | 75.3 | 974 | 722 | 74.1 | 1.57 | 60 | 10 | 261 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
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## Quality Control Report

### Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Semivolatile Organics by Method 8270C **WorkOrder:** 08080983
**Method:** SW8270C **Lab Batch ID:** 82934

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: 08080981-01
RunID: H_080827F-4651392 Units: ug/kg-dry
Analysis Date: 08/27/2008 19:43 Analyst: GY
Preparation Date: 08/21/2008 13:34 Prep By: QMT Method SW3550B

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3-Nitroaniline | ND | 974 | 767 | 78.8 | 974 | 767 | 78.8 | 0 | 60 | 20 | 175 |
| 4,6-Dinitro-2-methylphenol | ND | 974 | 825 | 84.7 | 974 | 779 | 80.0 | 5.71 | 60 | 10 | 181 |
| 4-Bromophenyl phenyl ether | ND | 974 | 802 | 82.4 | 974 | 825 | 84.7 | 2.82 | 60 | 20 | 175 |
| 4-Chloro-3-methylphenol | ND | 974 | 779 | 80.0 | 974 | 779 | 80.0 | 0 | 42 | 22 | 147 |
| 4-Chloroaniline | ND | 974 | 733 | 75.3 | 974 | 745 | 76.5 | 1.55 | 60 | 20 | 175 |
| 4-Chlorophenyl phenyl ether | ND | 974 | 882 | 90.6 | 974 | 905 | 92.9 | 2.56 | 60 | 25 | 158 |
| 4-Nitroaniline | ND | 974 | 756 | 77.6 | 974 | 767 | 78.8 | 1.50 | 60 | 20 | 175 |
| 4-Nitrophenol | ND | 974 | 722 | 74.1 | 974 | 733 | 75.3 | 1.57 | 50 | 10 | 132 |
| Acenaphthene | ND | 974 | 733 | 75.3 | 974 | 756 | 77.6 | 3.08 | 31 | 30 | 160 |
| Acenaphthylene | ND | 974 | 745 | 76.5 | 974 | 767 | 78.8 | 3.03 | 50 | 10 | 150 |
| Aniline | ND | 1950 | 1260 | 64.7 | 1950 | 1260 | 64.7 | 0 | 60 | 10 | 160 |
| Anthracene | ND | 974 | 767 | 78.8 | 974 | 767 | 78.8 | 0 | 50 | 27 | 133 |
| Benz(a)anthracene | ND | 974 | 767 | 78.8 | 974 | 767 | 78.8 | 0 | 50 | 33 | 143 |
| Benzo(a)pyrene | ND | 974 | 756 | 77.6 | 974 | 756 | 77.6 | 0 | 60 | 17 | 163 |
| Benzo(b)fluoranthene | ND | 974 | 767 | 78.8 | 974 | 733 | 75.3 | 4.58 | 60 | 24 | 159 |
| Benzo(g,h,i)perylene | ND | 974 | 722 | 74.1 | 974 | 722 | 74.1 | 0 | 60 | 10 | 219 |
| Benzo(k)fluoranthene | ND | 974 | 710 | 72.9 | 974 | 745 | 76.5 | 4.72 | 60 | 11 | 162 |
| Benzoic acid | ND | 974 | 607 | 62.4 | 974 | 607 | 62.4 | 0 | 60 | 10 | 450 |
| Benzyl alcohol | ND | 974 | 515 | 52.9 | 974 | 493 | 50.6 | 4.55 | 60 | 30 | 160 |
| Bis(2-chloroethoxy)methane | ND | 974 | 1260 | 129 | 974 | 1260 | 129 | 0 | 60 | 33 | 184 |
| Bis(2-chloroethyl)ether | ND | 974 | 802 | 82.4 | 974 | 790 | 81.2 | 1.44 | 60 | 28 | 158 |
| Bis(2-chloroisopropyl)ether | ND | 974 | 779 | 80.0 | 974 | 779 | 80.0 | 0 | 60 | 36 | 166 |
| Bis(2-ethylhexyl)phthalate | ND | 974 | 871 | 89.4 | 974 | 871 | 89.4 | 0 | 60 | 10 | 158 |
| Butyl benzyl phthalate | ND | 974 | 893 | 91.8 | 974 | 871 | 89.4 | 2.60 | 60 | 10 | 152 |
| Carbazole | ND | 974 | 790 | 81.2 | 974 | 779 | 80.0 | 1.46 | 60 | 45 | 135 |
| Chrysene | ND | 974 | 767 | 78.8 | 974 | 767 | 78.8 | 0 | 60 | 17 | 168 |
| Dibenz(a,h)anthracene | ND | 974 | 745 | 76.5 | 974 | 745 | 76.5 | 0 | 60 | 10 | 227 |
| Dibenzofuran | ND | 974 | 756 | 77.6 | 974 | 779 | 80.0 | 2.99 | 60 | 45 | 135 |
| Diethyl phthalate | ND | 974 | 802 | 82.4 | 974 | 825 | 84.7 | 2.82 | 60 | 10 | 160 |
| Dimethyl phthalate | ND | 974 | 802 | 82.4 | 974 | 825 | 84.7 | 2.82 | 60 | 10 | 112 |
| Di-n-butyl phthalate | ND | 974 | 871 | 89.4 | 974 | 871 | 89.4 | 0 | 60 | 10 | 118 |
| Di-n-octyl phthalate | ND | 974 | 848 | 87.1 | 974 | 848 | 87.1 | 0 | 60 | 10 | 146 |

**Qualifiers:**
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
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## Quality Control Report

**Conoco Phillips**
**COP Johnson Fed4**

**Analysis:** Semivolatile Organics by Method 8270C
**Method:** SW8270C
**WorkOrder:** 08080983
**Lab Batch ID:** 82934

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: 08080981-01
RunID: H_080827F-4651392
Analysis Date: 08/27/2008 19:43
Preparation Date: 08/21/2008 13:34
Units: ug/kg-dry
Analyst: GY
Prep By: QMT Method SW3550B

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluoranthene | ND | 974 | 779 | 80.0 | 974 | 779 | 80.0 | 0 | 60 | 26 | 137 |
| Fluorene | ND | 974 | 756 | 77.6 | 974 | 779 | 80.0 | 2.99 | 60 | 45 | 135 |
| Hexachlorobenzene | ND | 974 | 767 | 78.8 | 974 | 767 | 78.8 | 0 | 60 | 10 | 152 |
| Hexachlorobutadiene | ND | 974 | 710 | 72.9 | 974 | 710 | 72.9 | 0 | 60 | 20 | 140 |
| Hexachlorocyclopentadiene | ND | 974 | 458 | 47.1 | 974 | 401 | 41.2 | 13.3 | 60 | 10 | 152 |
| Hexachloroethane | ND | 974 | 664 | 68.2 | 974 | 664 | 68.2 | 0 | 60 | 25 | 118 |
| Indeno(1,2,3-cd)pyrene | ND | 974 | 756 | 77.6 | 974 | 767 | 78.8 | 1.50 | 60 | 10 | 171 |
| Isophorone | ND | 974 | 733 | 75.3 | 974 | 756 | 77.6 | 3.08 | 60 | 21 | 196 |
| Naphthalene | ND | 974 | 710 | 72.9 | 974 | 722 | 74.1 | 1.60 | 60 | 21 | 133 |
| Nitrobenzene | ND | 974 | 641 | 65.9 | 974 | 653 | 67.1 | 1.77 | 60 | 35 | 180 |
| N-Nitrosodi-n-propylamine | ND | 974 | 767 | 78.8 | 974 | 733 | 75.3 | 4.58 | 38 | 10 | 230 |
| N-Nitrosodiphenylamine | ND | 1950 | 2060 | 106 | 1950 | 2060 | 106 | 0 | 60 | 30 | 160 |
| Pentachlorophenol | ND | 974 | 550 | 56.5 | 974 | 538 | 55.3 | 2.11 | 50 | 14 | 176 |
| Phenanthrene | ND | 974 | 756 | 77.6 | 974 | 767 | 78.8 | 1.50 | 60 | 45 | 135 |
| Phenol | ND | 974 | 779 | 80.0 | 974 | 767 | 78.8 | 1.48 | 42 | 44 | 120 |
| Pyrene | ND | 974 | 779 | 80.0 | 974 | 790 | 81.2 | 1.46 | 31 | 26 | 127 |
| Pyridine | ND | 1950 | 1150 | 58.8 | 1950 | 1150 | 58.8 | 0 | 60 | 10 | 150 |
| 2-Methylphenol | ND | 974 | 745 | 76.5 | 974 | 710 | 72.9 | 4.72 | 60 | 40 | 160 |
| 3 & 4-Methylphenol | ND | 974 | 836 | 85.9 | 974 | 836 | 85.9 | 0 | 60 | 40 | 160 |
| Surr: 2,4,6-Tribromophenol | ND | 2860 | 2290 | 80.0 | 2860 | 2410 | 84.0 | 4.88 | 30 | 19 | 135 |
| Surr: 2-Fluorobiphenyl | ND | 1950 | 1490 | 76.5 | 1950 | 1600 | 82.4 | 7.41 | 30 | 15 | 140 |
| Surr: 2-Fluorophenol | ND | 2860 | 2060 | 72.0 | 2860 | 2060 | 72.0 | 0 | 30 | 15 | 122 |
| Surr: Nitrobenzene-d5 | ND | 1950 | 1370 | 70.6 | 1950 | 1370 | 70.6 | 0 | 30 | 10 | 134 |
| Surr: Phenol-d5 | ND | 2860 | 2180 | 76.0 | 2860 | 2290 | 80.0 | 5.13 | 30 | 10 | 123 |
| Surr: Terphenyl-d14 | ND | 1950 | 1490 | 76.5 | 1950 | 1600 | 82.4 | 7.41 | 30 | 18 | 166 |

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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Volatile Organics by Method 8260B
**Method:** SW8260B

**WorkOrder:** 08080983
**Lab Batch ID:** R249104

**Method Blank**

RunID: M_080821A-4640312 Units: ug/kg
Analysis Date: 08/21/2008 13:20 Analyst: TLE

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08080983-01A | MW-2 (58.0-59.5) |
| 08080983-02A | MW-3 (57-58.5) |
| 08080983-03A | MW-4 (53-54.5) |

| Analyte | Result | Rep Limit |
|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND | 5.0 |
| 1,1,1-Trichloroethane | ND | 5.0 |
| 1,1,2,2-Tetrachloroethane | ND | 5.0 |
| 1,1,2-Trichloroethane | ND | 5.0 |
| 1,1-Dichloroethane | ND | 5.0 |
| 1,1-Dichloroethene | ND | 5.0 |
| 1,1-Dichloropropene | ND | 5.0 |
| 1,2,3-Trichlorobenzene | ND | 5.0 |
| 1,2,3-Trichloropropane | ND | 5.0 |
| 1,2,4-Trichlorobenzene | ND | 5.0 |
| 1,2,4-Trimethylbenzene | ND | 5.0 |
| 1,2-Dibromo-3-chloropropane | ND | 5.0 |
| 1,2-Dibromoethane | ND | 5.0 |
| 1,2-Dichlorobenzene | ND | 5.0 |
| 1,2-Dichloroethane | ND | 5.0 |
| 1,2-Dichloropropane | ND | 5.0 |
| 1,3,5-Trimethylbenzene | ND | 5.0 |
| 1,3-Dichlorobenzene | ND | 5.0 |
| 1,3-Dichloropropane | ND | 5.0 |
| 1,4-Dichlorobenzene | ND | 5.0 |
| 2,2-Dichloropropane | ND | 5.0 |
| 2-Butanone | ND | 20 |
| 2-Chloroethyl vinyl ether | ND | 10 |
| 2-Chlorotoluene | ND | 5.0 |
| 2-Hexanone | ND | 10 |
| 4-Chlorotoluene | ND | 5.0 |
| 4-Isopropyltoluene | ND | 5.0 |
| 4-Methyl-2-pentanone | ND | 10 |
| Acetone | ND | 100 |
| Acrylonitrile | ND | 50 |
| Benzene | ND | 5.0 |
| Bromobenzene | ND | 5.0 |
| Bromochloromethane | ND | 5.0 |
| Bromodichloromethane | ND | 5.0 |
| Bromoform | ND | 5.0 |
| Bromomethane | ND | 10 |
| Carbon disulfide | ND | 5.0 |
| Carbon tetrachloride | ND | 5.0 |
| Chlorobenzene | ND | 5.0 |
| Chloroethane | ND | 10 |
| Chloroform | ND | 5.0 |
| Chloromethane | ND | 10 |
| Dibromochloromethane | ND | 5.0 |
| Dibromomethane | ND | 5.0 |
| Dichlorodifluoromethane | ND | 10 |
| Ethylbenzene | ND | 5.0 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Volatile Organics by Method 8260B **WorkOrder:** 08080983
**Method:** SW8260B **Lab Batch ID:** R249104

### Method Blank

RunID: M_080821A-4640312 Units: ug/kg
Analysis Date: 08/21/2008 13:20 Analyst: TLE

| Analyte | Result | Rep Limit |
|---|---|---|
| Hexachlorobutadiene | ND | 5.0 |
| Isopropylbenzene | ND | 5.0 |
| Methyl tert-butyl ether | ND | 5.0 |
| Methylene chloride | ND | 5.0 |
| Naphthalene | ND | 5.0 |
| n-Butylbenzene | ND | 5.0 |
| n-Propylbenzene | ND | 5.0 |
| sec-Butylbenzene | ND | 5.0 |
| Styrene | ND | 5.0 |
| tert-Butylbenzene | ND | 5.0 |
| Tetrachloroethene | ND | 5.0 |
| Toluene | ND | 5.0 |
| Trichloroethene | ND | 5.0 |
| Trichlorofluoromethane | ND | 5.0 |
| Vinyl acetate | ND | 10 |
| Vinyl chloride | ND | 10 |
| cis-1,2-Dichloroethene | ND | 5.0 |
| cis-1,3-Dichloropropene | ND | 5.0 |
| m,p-Xylene | ND | 5.0 |
| o-Xylene | ND | 5.0 |
| trans-1,2-Dichloroethene | ND | 5.0 |
| trans-1,3-Dichloropropene | ND | 5.0 |
| 1,2-Dichloroethene (total) | ND | 5.0 |
| Xylenes, Total | ND | 5.0 |
| Surr: 1,2-Dichloroethane-d4 | 100.0 | 64-130 |
| Surr: 4-Bromofluorobenzene | 86.0 | 62-130 |
| Surr: Toluene-d8 | 104.0 | 70-140 |

### Laboratory Control Sample (LCS)

RunID: M_080821A-4640311 Units: ug/kg
Analysis Date: 08/21/2008 12:25 Analyst: TLE

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 20.0 | 17.0 | 85.0 | 35 | 175 |
| 1,1,1-Trichloroethane | 20.0 | 20.0 | 100 | 35 | 175 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 20.0 | 100 | 35 | 175 |
| 1,1,2-Trichloroethane | 20.0 | 21.0 | 105 | 35 | 175 |
| 1,1-Dichloroethane | 20.0 | 23.0 | 115 | 35 | 175 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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## Quality Control Report

**Conoco Phillips**
**COP Johnson Fed4**

**Analysis:** Volatile Organics by Method 8260B
**Method:** SW8260B
**WorkOrder:** 08080983
**Lab Batch ID:** R249104

**Laboratory Control Sample (LCS)**

RunID: M_080821A-4640311 Units: ug/kg
Analysis Date: 08/21/2008 12:25 Analyst: TLE

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| 1,1-Dichloroethene | 20.0 | 21.0 | 105 | 59 | 172 |
| 1,1-Dichloropropene | 20.0 | 20.0 | 100 | 35 | 175 |
| 1,2,3-Trichlorobenzene | 20.0 | 17.0 | 85.0 | 20 | 200 |
| 1,2,3-Trichloropropane | 20.0 | 22.0 | 110 | 35 | 175 |
| 1,2,4-Trichlorobenzene | 20.0 | 16.0 | 80.0 | 40 | 200 |
| 1,2,4-Trimethylbenzene | 20.0 | 20.0 | 100 | 35 | 175 |
| 1,2-Dibromo-3-chloropropane | 20.0 | 19.0 | 95.0 | 15 | 175 |
| 1,2-Dibromoethane | 20.0 | 19.0 | 95.0 | 35 | 175 |
| 1,2-Dichlorobenzene | 20.0 | 19.0 | 95.0 | 35 | 175 |
| 1,2-Dichloroethane | 20.0 | 23.0 | 115 | 35 | 175 |
| 1,2-Dichloropropane | 20.0 | 21.0 | 105 | 35 | 175 |
| 1,3,5-Trimethylbenzene | 20.0 | 19.0 | 95.0 | 35 | 175 |
| 1,3-Dichlorobenzene | 20.0 | 20.0 | 100 | 35 | 175 |
| 1,3-Dichloropropane | 20.0 | 21.0 | 105 | 35 | 175 |
| 1,4-Dichlorobenzene | 20.0 | 20.0 | 100 | 35 | 175 |
| 2,2-Dichloropropane | 20.0 | 19.0 | 95.0 | 35 | 175 |
| 2-Butanone | 120 | 200 | 167 | 20 | 235 |
| 2-Chloroethyl vinyl ether | 20.0 | 18.0 | 90.0 | 10 | 250 |
| 2-Chlorotoluene | 20.0 | 20.0 | 100 | 31 | 175 |
| 2-Hexanone | 20.0 | 25.0 | 125 | 10 | 250 |
| 4-Chlorotoluene | 20.0 | 20.0 | 100 | 35 | 175 |
| 4-Isopropyltoluene | 20.0 | 19.0 | 95.0 | 35 | 175 |
| 4-Methyl-2-pentanone | 20.0 | 19.0 | 95.0 | 10 | 170 |
| Acetone | 200 | 520 | 260 | 10 | 350 |
| Acrylonitrile | 100 | 130 | 130 | 20 | 200 |
| Benzene | 20.0 | 21.0 | 105 | 66 | 142 |
| Bromobenzene | 20.0 | 19.0 | 95.0 | 35 | 175 |
| Bromochloromethane | 20.0 | 21.0 | 105 | 35 | 175 |
| Bromodichloromethane | 20.0 | 20.0 | 100 | 35 | 175 |
| Bromoform | 20.0 | 18.0 | 90.0 | 35 | 175 |
| Bromomethane | 20.0 | 20.0 | 100 | 35 | 175 |
| Carbon disulfide | 20.0 | 17.0 | 85.0 | 30 | 220 |
| Carbon tetrachloride | 20.0 | 18.0 | 90.0 | 35 | 175 |
| Chlorobenzene | 20.0 | 19.0 | 95.0 | 60 | 133 |

**Qualifiers:**
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MI - Matrix Interference
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## Quality Control Report

### Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Volatile Organics by Method 8260B **WorkOrder:** 08080983
**Method:** SW8260B **Lab Batch ID:** R249104

**Laboratory Control Sample (LCS)**

RunID: M_080821A-4640311 Units: ug/kg
Analysis Date: 08/21/2008 12:25 Analyst: TLE

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Chloroethane | 20.0 | 21.0 | 105 | 35 | 175 |
| Chloroform | 20.0 | 22.0 | 110 | 35 | 175 |
| Chloromethane | 20.0 | 21.0 | 105 | 35 | 175 |
| Dibromochloromethane | 20.0 | 19.0 | 95.0 | 35 | 175 |
| Dibromomethane | 20.0 | 20.0 | 100 | 35 | 175 |
| Dichlorodifluoromethane | 20.0 | 14.0 | 70.0 | 30 | 175 |
| Ethylbenzene | 20.0 | 18.0 | 90.0 | 35 | 175 |
| Hexachlorobutadiene | 20.0 | 16.0 | 80.0 | 35 | 175 |
| Isopropylbenzene | 20.0 | 14.0 | 70.0 | 35 | 175 |
| Methyl tert-butyl ether | 40.0 | 39.0 | 97.5 | 35 | 175 |
| Methylene chloride | 20.0 | 23.0 | 115 | 35 | 175 |
| Naphthalene | 20.0 | 17.0 | 85.0 | 20 | 175 |
| n-Butylbenzene | 20.0 | 20.0 | 100 | 35 | 175 |
| n-Propylbenzene | 20.0 | 19.0 | 95.0 | 35 | 175 |
| sec-Butylbenzene | 20.0 | 20.0 | 100 | 35 | 175 |
| Styrene | 20.0 | 16.0 | 80.0 | 35 | 175 |
| tert-Butylbenzene | 20.0 | 20.0 | 100 | 35 | 175 |
| Tetrachloroethene | 20.0 | 18.0 | 90.0 | 30 | 250 |
| Toluene | 20.0 | 20.0 | 100 | 59 | 139 |
| Trichloroethene | 20.0 | 19.0 | 95.0 | 60 | 140 |
| Trichlorofluoromethane | 20.0 | 18.0 | 90.0 | 17 | 250 |
| Vinyl acetate | 20.0 | 25.0 | 125 | 10 | 250 |
| Vinyl chloride | 20.0 | 25.0 | 125 | 30 | 175 |
| cis-1,2-Dichloroethene | 20.0 | 22.0 | 110 | 35 | 175 |
| cis-1,3-Dichloropropene | 20.0 | 20.0 | 100 | 35 | 175 |
| m,p-Xylene | 40.0 | 41.0 | 102 | 35 | 175 |
| o-Xylene | 20.0 | 19.0 | 95.0 | 35 | 175 |
| trans-1,2-Dichloroethene | 20.0 | 22.0 | 110 | 35 | 175 |
| trans-1,3-Dichloropropene | 20.0 | 20.0 | 100 | 35 | 175 |
| 1,2-Dichloroethene (total) | 40 | 44 | 110 | 35 | 175 |
| Xylenes,Total | 60 | 60 | 100 | 35 | 175 |
| Surr: 1,2-Dichloroethane-d4 | 50.0 | 47 | 94.0 | 64 | 130 |
| Surr: 4-Bromofluorobenzene | 50.0 | 49 | 98.0 | 62 | 130 |
| Surr: Toluene-d8 | 50.0 | 53 | 106 | 70 | 140 |

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## Quality Control Report

**Conoco Phillips**
**COP Johnson Fed4**

**Analysis:** Volatile Organics by Method 8260B
**Method:** SW8260B
**WorkOrder:** 08080983
**Lab Batch ID:** R249104

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: 08080983-02
RunID: M_080821A-4640316 Units: ug/kg-dry
Analysis Date: 08/21/2008 15:09 Analyst: TLE
Preparation Date: 08/20/2008 17:20 Prep By: AG Method SW5030B

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND | 22.9 | 17.2 | 75.0 | 22.9 | 16.0 | 70.0 | 6.90 | 30 | 35 | 175 |
| 1,1,1-Trichloroethane | ND | 22.9 | 27.5 | 120 | 22.9 | 27.5 | 120 | 0 | 30 | 35 | 175 |
| 1,1,2,2-Tetrachloroethane | ND | 22.9 | 18.3 | 80.0 | 22.9 | 18.3 | 80.0 | 0 | 30 | 35 | 175 |
| 1,1,2-Trichloroethane | ND | 22.9 | 19.5 | 85.0 | 22.9 | 19.5 | 85.0 | 0 | 30 | 35 | 175 |
| 1,1-Dichloroethane | ND | 22.9 | 30.9 | 135 | 22.9 | 32.0 | 140 | 3.64 | 30 | 35 | 175 |
| 1,1-Dichloroethene | ND | 22.9 | 29.7 | 130 | 22.9 | 30.9 | 135 | 3.77 | 22 | 59 | 172 |
| 1,1-Dichloropropene | ND | 22.9 | 25.2 | 110 | 22.9 | 26.3 | 115 | 4.44 | 30 | 35 | 175 |
| 1,2,3-Trichlorobenzene | ND | 22.9 | 10.3 | 45.0 | 22.9 | 9.15 | 40.0 | 11.8 | 30 | 20 | 200 |
| 1,2,3-Trichloropropane | ND | 22.9 | 18.3 | 80.0 | 22.9 | 17.2 | 75.0 | 6.45 | 30 | 35 | 175 |
| 1,2,4-Trichlorobenzene | ND | 22.9 | 10.3 | 45.0 | 22.9 | 9.15 | 40.0 | 11.8 | 30 | 40 | 200 |
| 1,2,4-Trimethylbenzene | ND | 22.9 | 20.6 | 75.0 | 22.9 | 20.6 | 75.0 | 0 | 30 | 35 | 175 |
| 1,2-Dibromo-3-chloropropane | ND | 22.9 | 16.0 | 70.0 | 22.9 | 16.0 | 70.0 | 0 | 30 | 15 | 175 |
| 1,2-Dibromoethane | ND | 22.9 | 16.0 | 70.0 | 22.9 | 16.0 | 70.0 | 0 | 30 | 35 | 175 |
| 1,2-Dichlorobenzene | ND | 22.9 | 14.9 | 65.0 | 22.9 | 13.7 | 60.0 | 8.00 | 30 | 35 | 175 |
| 1,2-Dichloroethane | ND | 22.9 | 26.3 | 115 | 22.9 | 25.2 | 110 | 4.44 | 30 | 35 | 175 |
| 1,2-Dichloropropane | ND | 22.9 | 21.7 | 95.0 | 22.9 | 22.9 | 100 | 5.13 | 30 | 35 | 175 |
| 1,3,5-Trimethylbenzene | ND | 22.9 | 19.5 | 75.0 | 22.9 | 18.3 | 70.0 | 6.06 | 30 | 35 | 175 |
| 1,3-Dichlorobenzene | ND | 22.9 | 16.0 | 70.0 | 22.9 | 14.9 | 65.0 | 7.41 | 30 | 35 | 175 |
| 1,3-Dichloropropane | ND | 22.9 | 19.5 | 85.0 | 22.9 | 19.5 | 85.0 | 0 | 30 | 35 | 175 |
| 1,4-Dichlorobenzene | ND | 22.9 | 16.0 | 70.0 | 22.9 | 14.9 | 65.0 | 7.41 | 30 | 35 | 175 |
| 2,2-Dichloropropane | ND | 22.9 | 26.3 | 115 | 22.9 | 26.3 | 115 | 0 | 30 | 35 | 175 |
| 2-Butanone | ND | 22.9 | 46.9 | 205 | 22.9 | 46.9 | 205 | 0 | 30 | 10 | 230 |
| 2-Chloroethyl vinyl ether | ND | 22.9 | 11.4 | 50.0 | 22.9 | 13.7 | 60.0 | 18.2 | 30 | 10 | 250 |
| 2-Chlorotoluene | ND | 22.9 | 18.3 | 80.0 | 22.9 | 17.2 | 75.0 | 6.45 | 30 | 31 | 175 |
| 2-Hexanone | ND | 22.9 | 21.7 | 95.0 | 22.9 | 21.7 | 95.0 | 0 | 30 | 10 | 250 |
| 4-Chlorotoluene | ND | 22.9 | 17.2 | 75.0 | 22.9 | 16.0 | 70.0 | 6.90 | 30 | 35 | 175 |
| 4-Isopropyltoluene | ND | 22.9 | 16.0 | 70.0 | 22.9 | 14.9 | 65.0 | 7.41 | 30 | 35 | 175 |
| 4-Methyl-2-pentanone | ND | 22.9 | 16.0 | 70.0 | 22.9 | 17.2 | 75.0 | 6.90 | 30 | 10 | 170 |
| Acetone | ND | 114 | 481 | 398 * | 114 | 492 | 408 * | 2.35 | 30 | 10 | 350 |
| Acrylonitrile | ND | 229 | 286 | 125 | 133 | 286 | 216 * | 0 | 30 | 20 | 200 |

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## Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Volatile Organics by Method 8260B **WorkOrder:** 08080983
**Method:** SW8260B **Lab Batch ID:** R249104

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: 08080983-02
RunID: M_080821A-4640316 Units: ug/kg-dry
Analysis Date: 08/21/2008 15:09 Analyst: TLE
Preparation Date: 08/20/2008 17:20 Prep By: AG Method SW5030B

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 22.9 | 22.9 | 100 | 22.9 | 24.0 | 105 | 4.88 | 21 | 66 | 142 |
| Bromobenzene | ND | 22.9 | 16.0 | 70.0 | 22.9 | 16.0 | 70.0 | 0 | 30 | 35 | 175 |
| Bromochloromethane | ND | 22.9 | 25.2 | 110 | 22.9 | 24.0 | 105 | 4.65 | 30 | 35 | 175 |
| Bromodichloromethane | ND | 22.9 | 20.6 | 90.0 | 22.9 | 20.6 | 90.0 | 0 | 30 | 35 | 175 |
| Bromoform | ND | 22.9 | 17.2 | 75.0 | 22.9 | 16.0 | 70.0 | 6.90 | 30 | 35 | 175 |
| Bromomethane | ND | 22.9 | 27.5 | 120 | 22.9 | 28.6 | 125 | 4.08 | 30 | 35 | 175 |
| Carbon disulfide | ND | 22.9 | 27.5 | 120 | 22.9 | 28.6 | 125 | 4.08 | 30 | 30 | 220 |
| Carbon tetrachloride | ND | 22.9 | 22.9 | 100 | 22.9 | 22.9 | 100 | 0 | 30 | 35 | 175 |
| Chlorobenzene | ND | 22.9 | 18.3 | 80.0 | 22.9 | 17.2 | 75.0 | 6.45 | 21 | 60 | 133 |
| Chloroethane | ND | 22.9 | 30.9 | 135 | 22.9 | 35.5 | 155 | 13.8 | 30 | 35 | 175 |
| Chloroform | ND | 22.9 | 28.6 | 125 | 22.9 | 28.6 | 125 | 0 | 30 | 35 | 175 |
| Chloromethane | ND | 22.9 | 28.6 | 125 | 22.9 | 33.2 | 145 | 14.8 | 30 | 35 | 175 |
| Dibromochloromethane | ND | 22.9 | 17.2 | 75.0 | 22.9 | 17.2 | 75.0 | 0 | 30 | 35 | 175 |
| Dibromomethane | ND | 22.9 | 19.5 | 85.0 | 22.9 | 19.5 | 85.0 | 0 | 30 | 35 | 175 |
| Dichlorodifluoromethane | ND | 22.9 | 24.0 | 105 | 22.9 | 24.0 | 105 | 0 | 30 | 30 | 175 |
| Ethylbenzene | ND | 22.9 | 17.2 | 75.0 | 22.9 | 17.2 | 75.0 | 0 | 30 | 35 | 175 |
| Hexachlorobutadiene | ND | 22.9 | 11.4 | 50.0 | 22.9 | 11.4 | 50.0 | 0 | 30 | 35 | 175 |
| Isopropylbenzene | ND | 22.9 | 17.2 | 75.0 | 22.9 | 16.0 | 70.0 | 6.90 | 30 | 35 | 175 |
| Methyl tert-butyl ether | ND | 22.9 | 20.6 | 90.0 | 22.9 | 20.6 | 90.0 | 0 | 30 | 35 | 175 |
| Methylene chloride | 10.3 | 22.9 | 33.2 | 100 | 22.9 | 32.0 | 95.0 | 3.51 | 30 | 35 | 175 |
| Naphthalene | ND | 22.9 | 12.6 | 55.0 | 22.9 | 11.4 | 50.0 | 9.52 | 30 | 20 | 175 |
| n-Butylbenzene | ND | 22.9 | 16.0 | 70.0 | 22.9 | 14.9 | 65.0 | 7.41 | 30 | 35 | 175 |
| n-Propylbenzene | ND | 22.9 | 18.3 | 75.0 | 22.9 | 17.2 | 70.0 | 6.45 | 30 | 35 | 175 |
| sec-Butylbenzene | ND | 22.9 | 17.2 | 75.0 | 22.9 | 17.2 | 75.0 | 0 | 30 | 35 | 175 |
| Styrene | ND | 22.9 | 14.9 | 65.0 | 22.9 | 14.9 | 65.0 | 0 | 30 | 35 | 175 |
| tert-Butylbenzene | ND | 22.9 | 19.5 | 85.0 | 22.9 | 18.3 | 80.0 | 6.06 | 30 | 35 | 175 |
| Tetrachloroethene | ND | 22.9 | 19.5 | 85.0 | 22.9 | 19.5 | 85.0 | 0 | 30 | 30 | 250 |
| Toluene | ND | 22.9 | 19.5 | 85.0 | 22.9 | 19.5 | 85.0 | 0 | 21 | 59 | 139 |
| Trichloroethene | ND | 22.9 | 20.6 | 90.0 | 22.9 | 21.7 | 95.0 | 5.41 | 24 | 60 | 140 |
| Trichlorofluoromethane | ND | 22.9 | 28.6 | 125 | 22.9 | 30.9 | 135 | 7.69 | 30 | 17 | 250 |
| Vinyl acetate | ND | 22.9 | 20.6 | 90.0 | 22.9 | 19.5 | 85.0 | 5.71 | 30 | 10 | 250 |
| Vinyl chloride | ND | 22.9 | 38.9 | 170 | 22.9 | 41.2 | 180 * | 5.71 | 30 | 30 | 175 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
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## Quality Control Report

### Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Volatile Organics by Method 8260B **WorkOrder:** 08080983
**Method:** SW8260B **Lab Batch ID:** R249104

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: 08080983-02
RunID: M_080821A-4640316 Units: ug/kg-dry
Analysis Date: 08/21/2008 15:09 Analyst: TLE
Preparation Date: 08/20/2008 17:20 Prep By: AG Method SW5030B

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | ND | 22.9 | 26.3 | 115 | 22.9 | 26.3 | 115 | 0 | 30 | 35 | 175 |
| cis-1,3-Dichloropropene | ND | 22.9 | 19.5 | 85.0 | 22.9 | 19.5 | 85.0 | 0 | 30 | 35 | 175 |
| m,p-Xylene | 8.01 | 45.8 | 46.9 | 85.0 | 45.8 | 45.8 | 82.5 | 2.47 | 30 | 35 | 175 |
| o-Xylene | ND | 22.9 | 18.3 | 80.0 | 22.9 | 17.2 | 75.0 | 6.45 | 30 | 35 | 175 |
| trans-1,2-Dichloroethene | ND | 22.9 | 28.6 | 125 | 22.9 | 28.6 | 125 | 0 | 30 | 35 | 175 |
| trans-1,3-Dichloropropene | ND | 22.9 | 19.5 | 85.0 | 22.9 | 19.5 | 85.0 | 0 | 30 | 35 | 175 |
| 1,2-Dichloroethene (total) | ND | 45.8 | 54.9 | 120 | 45.8 | 54.9 | 120 | 0 | 30 | 35 | 175 |
| Xylenes,Total | 8.01 | 68.6 | 65.2 | 83.3 | 68.6 | 63.0 | 80.0 | 3.57 | 30 | 35 | 175 |
| Surr: 1,2-Dichloroethane-d4 | ND | 57.2 | 56.1 | 98.0 | 57.2 | 57.2 | 100 | 2.02 | 30 | 64 | 130 |
| Surr: 4-Bromofluorobenzene | ND | 57.2 | 59.5 | 104 | 57.2 | 58.4 | 102 | 1.94 | 30 | 62 | 130 |
| Surr: Toluene-d8 | ND | 57.2 | 59.5 | 104 | 57.2 | 58.4 | 102 | 1.94 | 30 | 70 | 140 |

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ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
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N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** PERCENT MOISTURE
**Method:** D2216

**WorkOrder:** 08080983
**Lab Batch ID:** R249041B

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08080983-01B | MW-2 (58.0-59.5) |
| 08080983-02B | MW-3 (57-58.5) |
| 08080983-03B | MW-4 (53-54.5) |

**Sample Duplicate**

Original Sample: 08081095-01
RunID: WET_080821X-4638965 Units: wt%
Analysis Date: 08/21/2008 18:25 Analyst: IAB

| Analyte | Sample Result | DUP Result | RPD | RPD Limit |
|---|---|---|---|---|
| Percent Moisture | 6.93 | 6.954 | 0.331 | 20 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

# *Sample Receipt Checklist*

# *And*

# *Chain of Custody*

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

# Sample Receipt Checklist

| | | | |
|---|---|---|---|
| Workorder: | 08080983 | Received By: | L_C |
| Date and Time Received: | 8/19/2008 9:30:00 AM | Carrier name: | Fedex-Priority |
| Temperature: | 4.0°C | Chilled by: | Water Ice |

| | | | | |
|---|---|---|---|---|
| 1. | Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| 2. | Custody seals intact on shippping container/cooler? | Yes ☑ | No ☐ | Not Present ☐ |
| 3. | Custody seals intact on sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| 4. | Chain of custody present? | Yes ☑ | No ☐ | |
| 5. | Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | |
| 6. | Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| 7. | Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| 8. | Sample containers intact? | Yes ☑ | No ☐ | |
| 9. | Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| 10. | All samples received within holding time? | Yes ☑ | No ☐ | |
| 11. | Container/Temp Blank temperature in compliance? | Yes ☑ | No ☐ | |
| 12. | Water - VOA vials have zero headspace? | Yes ☐ | No ☐ | VOA Vials Not Present ☑ |
| 13. | Water - Preservation checked upon receipt (except VOA*)? | Yes ☐ | No ☐ | Not Applicable ☑ |

*VOA Preservation Checked After Sample Analysis

SPL Representative: _____ Contact Date & Time: _____

Client Name Contacted: _____

Non Conformance Issues: _____

Client Instructions: _____

# Chain of Custody Record

**Client: Tetra Tech/ Conoco Phillips** | **SPL Workorder Number:** 0808093

**Attention: Kelly Blanchard/Tetra Tech**

Phone: 505-237-8440 | email: kelly.blanchard@tetratech.c

Address: 6121 Indian School Road, NE Ste. 200

City: Albuquerque | State: NM | Zip Code: 87110

Project Name: Johnson Federal #4

P.O. Number:

**Sampled By:** signature — Christine Matthews / Ana Moreno

| Sample ID | Collected Date | Time | Sample Type Comp | Grab | Matrix Water | Soil | Bottle Type | Preservative Type | # of Containers | Requested Analysis: 8260-voc | TPH-418.1 | SEMI-8270 | Full Metal List (See Below) | RCRA 8 METALS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-2 (58-59.5) | 8/15 | 1330 | | X | | X | 6 | 1 | 1 | X | | | | |
| " | 8/15 | 1330 | | X | | X | 7 | 1 | 2 | | X | X | X | |
| MW-3 (57-58.5) | 8/15 | 945 | | X | | X | 6 | 1 | 1 | X | | | | |
| " | 8/15 | 945 | | X | | X | 7 | 1 | 2 | | X | X | X | |
| MW-4 (53-54.5) | 8/15 | 1630 | | X | | X | 6 | 1 | 1 | X | | | | |
| " | 8/15 | 1630 | | X | | X | 7 | 1 | 2 | | X | X | X | |
| | | | | | | X | | | | | | | | |
| | | | | | | X | | | | | | | | |
| | | | | | | X | | | | | | | | |
| | | | | | | X | | | | | | | | |

Turnaround Time Requirements
24 hr( ) 48 hr( )
72 hr( ) 5 wday( )
10 wday - Standard(X)

**Remarks:** LOGIN FULL METALS LIST: 6010/6020/7470

**Intact?** Y or N

**Temperature:** 4.0

**Bottle Types:** 1: 3/40ml Vials 2. 1L Glass 3. 1L Plastic 4. 1L Amber Glass 5. 8oz Plastic 7. 8oz Glass 6. 4oz Glass

**Preservative Types:** 1: NONE 2. HNO3 3. HCL 4. H2SO4

| | Date | Time | |
|---|---|---|---|
| Relinquished by Sampler: | 8/18/08 | 11:00 | Received by: |
| Relinquished by: | Date | Time | Received by: |
| Relinquished by: | 8/19/08 | 9:30 | Received by SPL, Inc. |

Page of

# APPENDIX C

Groundwater Sampling Field Forms

TETRA TECH, INC.

# WATER SAMPLING FIELD FORM

Project Name Johnston Federal #4 Page 1 of 1

Project No.

Site Location Horse wash Canyon Rd. near Hwy 173 near Aztec, NM

Site/Well No. MW-1 Coded/ Replicate No. Date 7-23-08

Weather hot, sunny Time Sampling Began 10:10 Time Sampling Completed

## EVACUATION DATA

Description of Measuring Point (MP) Top of Casing

Height of MP Above/Below Land Surface MP Elevation

Total Sounded Depth of Well Below MP ~~51.9~~ 51.7 Water-Level Elevation

Held Depth to Water Below MP 46.63 Diameter of Casing

Wet Water Column in Well 5.07 Gallons Pumped/Bailed Prior to Sampling

Gallons per Foot .16 .81 (1 vol) X 3 = 2.43

Gallons in Well .81 Sampling Pump Intake Setting (feet below land surface)

Purging Equipment

## SAMPLING DATA/FIELD PARAMETERS TDS

| Time | Temperature | pH | Conductivity | Turbidity ppm | Other |
|---|---|---|---|---|---|
| 10:35 | 60.5 | 7.36 | 1340 | 696 | |
| 10:38 | 60.0 | 7.35 | 1337 | 697 | |
| | | | | | |
| | | | | | |
| | | | | | |

Sampling Equipment Bailer

| Constituents Sampled | Container Description | Preservative |
|---|---|---|
| BTEX | 3 VOAs | HCl |
| | | |
| | | |

Remarks strong hydrocarbon odor, light continuous sheen on bailed water. Bailed almost dry, given recharge through

Sampling Personnel Kelly Blanchard and Christine Mathews

**Well Casing Volumes**

| Gal./ft. | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1 ¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1 ½" = 0.10 | 2 ½" = 0.24 | 3" ½ = 0.50 | 6" = 1.46 |

TETRA TECH, INC.

# WATER SAMPLING FIELD FORM

Project Name Johnston Federal #4 Page ____ of 4

Project No. 1158690105

Site Location San Juan County, Hwy 173 near Aztec, NM

Site/Well No. MW-1 Coded/ Replicate No. ____ Date ____

Weather ____ Time Sampling Began ____ Time Sampling Completed 1450

## EVACUATION DATA

duplicate @ 1500

Description of Measuring Point (MP) Top of Casing

Height of MP Above/Below Land Surface ____ MP Elevation ____

Total Sounded Depth of Well Below MP 51.9 Water-Level Elevation ____

Held ____ Depth to Water Below MP 46.60 Diameter of Casing ____

Wet ____ Water Column in Well 5.3 Gallons Pumped/Bailed Prior to Sampling ____

Gallons per Foot 0.16

Gallons in Well 0.848 x 3 = 2.5 Sampling Pump Intake Setting (feet below land surface) ____

Purging Equipment Disposable polyethylene bailer/ Purge Pump

## SAMPLING DATA/FIELD PARAMETERS

| Time | Temperature (C°) | pH | Conductivity | TDS in g/L | ORP (mV) | DO |
|---|---|---|---|---|---|---|
| 1441 | 16.85 | 6.76 | 2.150 | 1.397 | -296.9 | 5.37 |
| 1444 | 15.57 | 6.85 | 2.109 | 1.371 | -307.3 | 2.81 |
| 1447 | 15.48 | 6.84 | 2.112 | 1.373 | -318.7 | 2.20 |
| | | | | | | |
| | | | | | | |

Sampling Equipment Disposable polyethylene bailer

| Constituents Sampled | Container Description | Preservative |
|---|---|---|
| BTEX | 3 - 40 mL glass VOAs | HCL |
| | | |
| | | |

Remarks ____

Sampling Personnel Christine Mathews, Ana Moreno

**Well Casing Volumes**

| Gal./ft. | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1 ¼" = 0.077 | | 2" = 0.16 | | 3" = 0.37 | | 4" = 0.65 |
| | 1 ½" = 0.10 | | 2 ½" = 0.24 | | 3" ½ = 0.50 | | 6" = 1.46 |

TETRA TECH, INC.

# WATER SAMPLING FIELD FORM

Project Name: Johnston Federal #4 — Page ____ of 4

Project No.: 1158690105

Site Location: San Juan County, Hwy 173 near Aztec, NM

Site/Well No.: MW-3 — Coded/ Replicate No.: ____ — Date: 10/24/08

Weather: ____ — Time Sampling Began: 1300 — Time Sampling Completed: 1315

## EVACUATION DATA

Description of Measuring Point (MP): Top of Casing

Height of MP Above/Below Land Surface: 0 — MP Elevation: ____

Total Sounded Depth of Well Below MP: 59.45 — Water-Level Elevation: ____

Held: ____ — Depth to Water Below MP: 43.91 — Diameter of Casing: ____

Wet: ____ — Water Column in Well: 15.54 — Gallons Pumped/Bailed Prior to Sampling: 7.5 gallons

Gallons per Foot: .16

Gallons in Well: 2.48 — Sampling Pump Intake Setting (feet below land surface): ____

Purging Equipment: Disposable polyethylene bailer/Purge Pump

## SAMPLING DATA/FIELD PARAMETERS

| Time | Temperature (C°) | pH | Conductivity | TDS in g/L | ORP (mV) | DO |
|---|---|---|---|---|---|---|
| 1304 | 15.88 | 7.00 | 2.194 | 1.426 | 9.0 | 6.98 |
| 1308 | 15.63 | 6.91 | 2.211 | 1.437 | 5.1 | 2.04 |
| 1310 | 15.44 | 6.92 | 2.218 | 1.442 | 5.1 | 1.49 |
| | | | | | | |
| | | | | | | |

Sampling Equipment: Disposable polyethylene bailer

| Constituents Sampled | Container Description | Preservative |
|---|---|---|
| BTEX | 3 - 40 mL glass VOAs | HCL |
| baseline | | |
| | | |

Remarks: ____

Sampling Personnel: Christine Mathews, Ana Moreno

**Well Casing Volumes**

| Gal./ft. | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1 ¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1 ½" = 0.10 | 2 ½" = 0.24 | 3" ½ = 0.50 | 6" = 1.46 |

TETRA TECH, INC.

# WATER SAMPLING FIELD FORM

Project Name Johnston Federal #4 Page ____ of 4

Project No. 1158690105

Site Location San Juan County, Hwy 173 near Aztec, NM

Site/Well No. MW-4 Coded/ Replicate No. ____ Date 10/24/08

Weather Sunny Time Sampling Began 11:20 Time Sampling Completed 11:45

## EVACUATION DATA

Description of Measuring Point (MP) Top of Casing

Height of MP Above/Below Land Surface ____ MP Elevation ____

Total Sounded Depth of Well Below MP ~~60.2~~ 61.2 Water-Level Elevation ____

Held ____ Depth to Water Below MP 43.11 Diameter of Casing ____

Wet ____ Water Column in Well ____ Gallons Pumped/Bailed Prior to Sampling 8 3/4 gallons

Gallons per Foot ____

Gallons in Well ____ Sampling Pump Intake Setting (feet below land surface) ____

Purging Equipment Disposable polyethylene bailer/ Purge Pump

## SAMPLING DATA/FIELD PARAMETERS

| Time | Temperature (C°) | pH | Conductivity | TDS in g/L | ORP (mV) | DO | |
|---|---|---|---|---|---|---|---|
| | 15.48 | 7.27 | 2.034 | 1.322 | -232.0 | 2.15 | 21.5 |
| | 15.39 | 7.06 | 3.038 | 1.324 | -209.2 | 2.10 | 21.0 |
| | 15.30 | 7.01 | 2.035 | 1.323 | -204.8 | 1.82 | 17.0 |
| | | | | | | | |
| | | | | | | | |

Sampling Equipment Disposable polyethylene bailer

| Constituents Sampled | Container Description | Preservative |
|---|---|---|
| BTEX | 3 - 40 mL glass VOAs | HCL |
| | | |
| | | |

Remarks ____

Sampling Personnel Christine Mathews, Ana Moreno

**Well Casing Volumes**

| | | | | |
|---|---|---|---|---|
| Gal./ft. | 1 ¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1 ½" = 0.10 | 2 ½" = 0.24 | 3" ½ = 0.50 | 6" = 1.46 |

TETRA TECH, INC.

# WATER SAMPLING FIELD FORM

Project Name Johnston Federal #4 Page ____ of 4

Project No. 1158690105

Site Location San Juan County, Hwy 173 near Aztec, NM

Site/Well No. MW-2 Coded/ Replicate No. ____ Date ~~10-24-08~~ 10-24-08

Weather Sunny, warm Time Sampling Began 12:10 Time Sampling Completed 12:35

## EVACUATION DATA

Description of Measuring Point (MP) Top of Casing

Height of MP Above/Below Land Surface ____ MP Elevation ____

Total Sounded Depth of Well Below MP 66.0 Water-Level Elevation ____

Held ____ Depth to Water Below MP ~~42.77~~ 42.86 Diameter of Casing ____

Wet ____ Water Column in Well ~~23.23~~ 23.13 Gallons Pumped/Bailed Prior to Sampling ____

Gallons per Foot 0.14

Gallons in Well 3.71 x 3 = 11.15 Sampling Pump Intake Setting (feet below land surface) ____

Purging Equipment Disposable polyethylene bailer/ Purge Pump

## SAMPLING DATA/FIELD PARAMETERS

| Time | Temperature (C°) | pH | Conductivity | TDS in g/L | ORP (mV) | DO | DO% |
|---|---|---|---|---|---|---|---|
| 1227 ~~12:11~~ | 13.74 | 6.92 | 2.25 | 1.464 | 46.4 | 5.02 | 48.6 |
| 1228 | 13.74 | 7.02 | 2.30 | 1.495 | 38.3 | 4.24 | 41.0% |
| 1230 | 13:77 | 7.05 | 2.302 | 1.497 | 36.0 | 4.17 | 40.3 |
| | | | | | | | |
| | | | | | | | |

Sampling Equipment Disposable polyethylene bailer

| Constituents Sampled | Container Description | Preservative |
|---|---|---|
| ~~BTEX~~ Baseline | 3 - 40 mL glass VOAs | HCL |
| | | |
| | | |

Remarks Brownish color water, no odor

Sampling Personnel Christine Mathews, Ana Moreno

**Well Casing Volumes**

| Gal./ft. | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1 ¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1 ½" = 0.10 | 2 ½" = 0.24 | 3" ½ = 0.50 | 6" = 1.46 |

# WATER SAMPLING FIELD FORM

Project No. Johnston Fed 4 — 1 of 4

Site Location

Site/Well No. MW-2 — Coded/ Replicate No. — Date 1/29/09

Weather Sunny/cold — Time Sampling Began — Time Sampling Completed 1015

## EVACUATION DATA

Description of Measuring Pt (MP)

Height of MP Above/Below Land Surface — MP Elevation

Total Sounded Depth of Well Below MP 64.6 — Water-Level Elevation

Held ____ — Depth to Water Below MP 42.83 — Diameter of Casing (2 inch / 4 inch)

Wet ____ — Water Column in Well 21.77 — Gallons Pumped/Bailed Prior to Sampling 7.5 gallons

Gallons per Foot 0.16

Gallons in Well 3.48 10.44 — Sampling Pump Intake (feet below land surface)

Purging Equipment

## SAMPLING DATA/FIELD PARAMETERS

| Time | Temperature | pH | Conductivity | TDS | DO | DO% | ORP | Other |
|---|---|---|---|---|---|---|---|---|
| 1007 | 13.17 | 7.19 | 1,788 | 1,500 | 6.41 | 60.4 | 194.5 | |
| 1009 | 13.16 | 7.23 | 1,800 | 1,513 | 4.65 | 44.1 | 188.3 | |
| 1010 | 13.35 | 7.21 | 1,796 | 1,501 | 4.81 | 46.3 | 184.2 | |
| | | | | | | | | |
| | | | | | | | | |

Sampling Equipment — Low Flow Pump / Disposable Bailer

| Constituents Sampled | Container Description | Preservative |
|---|---|---|
| BTEX | 3 VOAs | HCl |
| | | |
| | | |

Remarks

Sampling Personnel CM, CB

**Well Casing Volumes**

| Gal./ft. | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1 ¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1 ½" = 0.10 | 2 ½" = 0.24 | 3" ½ = 0.50 | 6" = 1.46 |

# WATER SAMPLING FIELD FORM

Project No. Johnston Fed 4 — 2 of 4

Site Location

Site/Well No. MW- 3 — Coded/ Replicate No. — Date 1/29/09

Weather Sunny/Cold — Time Sampling Began 10:23 — Time Sampling Completed 10:30

## EVACUATION DATA

Description of Measuring Pt (MP)

Height of MP Above/Below Land Surface — MP Elevation

Total Sounded Depth of Well Below MP ~~59~~ 57.5 — Water-Level Elevation

Held ____ — Depth to Water Below MP 41.97 — Diameter of Casing (2 inch / 4 inch)

Wet ____ — Water Column in Well 15.53 — Gallons Pumped/Bailed Prior to Sampling 7 gallons

Gallons per Foot ~~2.48~~ .16

Gallons in Well 2.48 x3 = 7.45 — Sampling Pump Intake (feet below land surface)

Purging Equipment

## SAMPLING DATA/FIELD PARAMETERS

| Time | Temperature | pH | Conductivity | TDS | DO | DO% | ORP | Other |
|---|---|---|---|---|---|---|---|---|
| 10:23 | 14.61 | 7.16 | 1.721 | 1.395 | 5.36 | 48.1 | -66 | |
| 10:24 | 14.64 | 7.08 | 1.722 | 1.394 | 3.15 | 30.9 | -41.3 | |
| 10:26 | 14.88 | 7.05 | 1.730 | 1.394 | 2.17 | 21.8 | -40.5 | |

Sampling Equipment — Low Flow Pump / Disposable Bailer

| Constituents Sampled | Container Description | Preservative |
|---|---|---|
| BTEX | 3 VOAs | HCL |
| | | |
| | | |

Remarks — Slight hydrocarbon odor, water is very light tan, Noshleen

Sampling Personnel CM, CB

**Well Casing Volumes**

| Gal./ft. | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1 ¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1 ½" = 0.10 | 2 ½" = 0.24 | 3" ½ = 0.50 | 6" = 1.46 |

# WATER SAMPLING FIELD FORM

Project No. Johnston Fed 4 — 3 of 4

Site Location

Site/Well No. MW- 1 — Coded/ Replicate No. — Date 1/29/09

Weather Sunny/cold — Time Sampling Began — Time Sampling Completed 1050

## EVACUATION DATA

Description of Measuring Pt (MP)

Height of MP Above/Below Land Surface — MP Elevation

Total Sounded Depth of Well Below MP 51.71 — Water-Level Elevation

Held ____ — Depth to Water Below MP 46.57 — Diameter of Casing (2 inch / 4 inch)

Wet ____ — Water Column in Well 5.14 — Gallons Pumped/Bailed Prior to Sampling 3 gallons

Gallons per Foot .16

Gallons in Well .82 — Sampling Pump Intake (feet below land surface)

Purging Equipment — X3 = 2.48

## SAMPLING DATA/FIELD PARAMETERS

| Time | Temperature | pH | Conductivity | TDS | DO | DO% | ORP | Other |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Sampling Equipment — Low Flow Pump / Disposable Bailer

| Constituents Sampled | Container Description | Preservative |
|---|---|---|
| VOCs, SVOCs, GRO, DRO, Gen Chem, Metals, Sulfate & Nitrate | 6 VOAs HCl, 2 32oz Plastic, 1 32 oz Plastic HNO3, 2 60ml Ambers HCl | HCl & $HNO_3$ |

Remarks — Bailed 3 volumes, no parameters collected due to road conditions, became warm & muddy had to leave site

Sampling Personnel — CM, CB

### Well Casing Volumes

| Gal./ft. | | | | |
|---|---|---|---|---|
| | 1 ¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1 ½" = 0.10 | 2 ½" = 0.24 | 3" ½ = 0.50 | 6" = 1.46 |

# WATER SAMPLING FIELD FORM

Project No. Johnston Fed 4 — 4 of 4

Site Location

Site/Well No. MW- 4 — Coded/ Replicate No. — Date 1/29/09

Weather — Time Sampling Began — Time Sampling Completed 11:05

## EVACUATION DATA

Description of Measuring Pt (MP)

Height of MP Above/Below Land Surface — MP Elevation

Total Sounded Depth of Well Below MP 60.11 — Water-Level Elevation

Held — Depth to Water Below MP 43.11 — Diameter of Casing 2 inch / 4 inch

Wet — Water Column in Well 17 — Gallons Pumped/Bailed Prior to Sampling

Gallons per Foot 0.16

Gallons in Well 2.72 / 8.16 — Sampling Pump Intake (feet below land surface)

Purging Equipment

## SAMPLING DATA/FIELD PARAMETERS

| Time | Temperature | pH | Conductivity | TDS | DO | DO% | ORP | Other |
|---|---|---|---|---|---|---|---|---|
| 10:54 | 14.39 | 7.12 | 1.376 | 1.116 | 2.81 | 27.3 | 101.9 | |
| 10:56 | 14.32 | 7.00 | 1.285 | 1.047 | 2.64 | 26.9 | -72.6 | |
| 11:00 | 14.63 | 6.95 | 1.243 | 1.007 | 2.34 | 22.9 | -66.9 | |
| 11:81 | 14.89 | 6.93 | 1.311 | 1.057 | 1.96 | 19.3 | -67.3 | |
| | | | | | | | | |

Sampling Equipment: Low Flow Pump / Disposable Bailer

| Constituents Sampled | Container Description | Preservative |
|---|---|---|
| BTEX | 3 VOAs | HCL |
| | | |
| | | |

Remarks: water is grayish tan with strong petroleum odor

Sampling Personnel: CM, CB

### Well Casing Volumes

| Gal./ft. | | | | |
|---|---|---|---|---|
| | 1 ¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1 ½" = 0.10 | 2 ½" = 0.24 | 3" ½ = 0.50 | 6" = 1.46 |

# APPENDIX D

Groundwater Laboratory Analysis Reports

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

## Conoco Phillips

**Certificate of Analysis Number:**

**08050162**

| Report To: | | Project Name: | Johnston Federal #4 |
|---|---|---|---|
| Tetra Tech EM, Inc. | | Site: | San Juan City,NM |
| Kelly Blanchard | | Site Address: | |
| 6121 Indian School Road, N.E. | | | |
| Suite 200 | | PO Number: | |
| Albuquerque | | State: | New Mexico |
| NM | | State Cert. No.: | |
| 87110- | | Date Reported: | 5/12/2008 |
| ph: (505) 881-3188 | fax: | | |

This Report Contains A Total Of 12 Pages

Excluding This Page, Chain Of Custody

And

Any Attachments

5/14/2008

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

## Case Narrative for:

# Conoco Phillips

## Certificate of Analysis Number:

## 08050162

| Report To: | | Project Name: | Johnston Federal #4 |
|---|---|---|---|
| Tetra Tech EM, Inc.<br>Kelly Blanchard<br>6121 Indian School Road, N.E.<br>Suite 200<br>Albuquerque<br>NM<br>87110-<br>ph: (505) 881-3188 fax: | | Site: | San Juan City,NM |
| | | Site Address: | |
| | | PO Number: | |
| | | State: | New Mexico |
| | | State Cert. No.: | |
| | | Date Reported: | 5/12/2008 |

Per the Conoco Phillips TSM Revision 0, a copy of the internal chain of custody is to be included in final data package. However, due to LIMS limitations, this cannot be provided at this time.

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Some of the percent recoveries and RPD's on the QC report for the MS/MSD may be different than the calculated recoveries and RPD's using the sample result and the MS/MSD results that appear on the report because, the actual raw result is used to perform the calculations for percent recovery and RPD.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.



SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Bethany Agarwal



Bethany A. Agarwal
Senior Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

# Conoco Phillips

## Certificate of Analysis Number:

## 08050162

**Report To:** Tetra Tech EM, Inc.
Kelly Blanchard
6121 Indian School Road, N.E.
Suite 200
Albuquerque
NM
87110-
ph: (505) 881-3188 fax: (505) 881-3283

**Fax To:**

**Project Name:** Johnston Federal #4
**Site:** San Juan City,NM
**Site Address:**
**PO Number:**
**State:** New Mexico
**State Cert. No.:**
**Date Reported:** 5/12/2008

| Client Sample ID | Lab Sample ID | Matrix | Date Collected | Date Received | COC ID | HOLD |
|---|---|---|---|---|---|---|
| MW-1 | 08050162-01 | Water | 4/30/2008 3:20:00 PM | 5/2/2008 10:00:00 AM | 297485 | ☐ |
| Duplicate | 08050162-02 | Water | 4/30/2008 3:25:00 PM | 5/2/2008 10:00:00 AM | 297485 | ☐ |
| Trip Blank | 08050162-03 | Water | 4/30/2008 3:30:00 PM | 5/2/2008 10:00:00 AM | 297485 | ☐ |

Bethany Agarwal 5/14/2008

Bethany A. Agarwal
Senior Project Manager

Date

Richard R. Reed
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-1 **Collected:** 04/30/2008 15:20 **SPL Sample ID:** 08050162-01

**Site: San Juan City,NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANICS BY METHOD 8260B** | | | **MCL** | **SW8260B** | **Units: ug/L** | | |
| Benzene | 6300 | | 500 | 100 | 05/07/08 18:48 | LT | 4424598 |
| Ethylbenzene | 280 J | | 500 | 100 | 05/07/08 18:48 | LT | 4424598 |
| Toluene | 1800 | | 500 | 100 | 05/07/08 18:48 | LT | 4424598 |
| m,p-Xylene | 7000 | | 500 | 100 | 05/07/08 18:48 | LT | 4424598 |
| o-Xylene | 1600 | | 500 | 100 | 05/07/08 18:48 | LT | 4424598 |
| Xylenes,Total | 8600 | | 500 | 100 | 05/07/08 18:48 | LT | 4424598 |
| Surr: 1,2-Dichloroethane-d4 | 98.0 | | % 62-130 | 100 | 05/07/08 18:48 | LT | 4424598 |
| Surr: 4-Bromofluorobenzene | 92.0 | | % 70-130 | 100 | 05/07/08 18:48 | LT | 4424598 |
| Surr: Toluene-d8 | 96.0 | | % 74-122 | 100 | 05/07/08 18:48 | LT | 4424598 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** Duplicate **Collected:** 04/30/2008 15:25 **SPL Sample ID:** 08050162-02

**Site: San Juan City,NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANICS BY METHOD 8260B** | | | **MCL** | **SW8260B** | **Units: ug/L** | | |
| Benzene | 6700 | | 500 | 100 | 05/07/08 19:14 | LT | 4424599 |
| Ethylbenzene | 310 J | | 500 | 100 | 05/07/08 19:14 | LT | 4424599 |
| Toluene | 2000 | | 500 | 100 | 05/07/08 19:14 | LT | 4424599 |
| m,p-Xylene | 7600 | | 500 | 100 | 05/07/08 19:14 | LT | 4424599 |
| o-Xylene | 1800 | | 500 | 100 | 05/07/08 19:14 | LT | 4424599 |
| Xylenes,Total | 9400 | | 500 | 100 | 05/07/08 19:14 | LT | 4424599 |
| Surr: 1,2-Dichloroethane-d4 | 100 | | % 62-130 | 100 | 05/07/08 19:14 | LT | 4424599 |
| Surr: 4-Bromofluorobenzene | 94.0 | | % 70-130 | 100 | 05/07/08 19:14 | LT | 4424599 |
| Surr: Toluene-d8 | 98.0 | | % 74-122 | 100 | 05/07/08 19:14 | LT | 4424599 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** Trip Blank **Collected:** 04/30/2008 15:30 **SPL Sample ID:** 08050162-03

**Site: San Juan City,NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANICS BY METHOD 8260B** | | | **MCL** | **SW8260B** | **Units: ug/L** | | |
| Benzene | ND | | 5 | 1 | 05/05/08 11:16 | LT | 4417286 |
| Ethylbenzene | ND | | 5 | 1 | 05/05/08 11:16 | LT | 4417286 |
| Toluene | ND | | 5 | 1 | 05/05/08 11:16 | LT | 4417286 |
| m,p-Xylene | ND | | 5 | 1 | 05/05/08 11:16 | LT | 4417286 |
| o-Xylene | ND | | 5 | 1 | 05/05/08 11:16 | LT | 4417286 |
| Xylenes,Total | ND | | 5 | 1 | 05/05/08 11:16 | LT | 4417286 |
| Surr: 1,2-Dichloroethane-d4 | 66.0 | | % 62-130 | 1 | 05/05/08 11:16 | LT | 4417286 |
| Surr: 4-Bromofluorobenzene | 78.0 | | % 70-130 | 1 | 05/05/08 11:16 | LT | 4417286 |
| Surr: Toluene-d8 | 102 | | % 74-122 | 1 | 05/05/08 11:16 | LT | 4417286 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

# *Quality Control Documentation*

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

# Quality Control Report

## Conoco Phillips

**Johnston Federal #4**

**Analysis:** Volatile Organics by Method 8260B
**Method:** SW8260B
**WorkOrder:** 08050162
**Lab Batch ID:** R236314

### Method Blank

RunID: N_080504D-4417267 Units: ug/L
Analysis Date: 05/05/2008 2:46 Analyst: LT
Preparation Date: 05/05/2008 2:46 Prep By: Method

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08050162-03A | Trip Blank |

| Analyte | Result | Rep Limit |
|---|---|---|
| Benzene | ND | 5.0 |
| Ethylbenzene | ND | 5.0 |
| Toluene | ND | 5.0 |
| m,p-Xylene | ND | 5.0 |
| o-Xylene | ND | 5.0 |
| Xylenes,Total | ND | 5.0 |
| Surr: 1,2-Dichloroethane-d4 | 90.0 | 62-130 |
| Surr: 4-Bromofluorobenzene | 86.0 | 70-130 |
| Surr: Toluene-d8 | 100.0 | 74-122 |

### Laboratory Control Sample (LCS)

RunID: N_080504D-4417266 Units: ug/L
Analysis Date: 05/05/2008 1:52 Analyst: LT
Preparation Date: 05/05/2008 1:52 Prep By: Method

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Benzene | 20.0 | 20.0 | 100 | 76 | 126 |
| Ethylbenzene | 20.0 | 18.0 | 90.0 | 67 | 122 |
| Toluene | 20.0 | 20.0 | 100 | 70 | 131 |
| m,p-Xylene | 40.0 | 37.0 | 92.5 | 72 | 150 |
| o-Xylene | 20.0 | 20.0 | 100 | 78 | 141 |
| Xylenes,Total | 60 | 57 | 95 | 72 | 150 |
| Surr: 1,2-Dichloroethane-d4 | 50.0 | 46 | 92.0 | 62 | 130 |
| Surr: 4-Bromofluorobenzene | 50.0 | 48 | 96.0 | 70 | 130 |
| Surr: Toluene-d8 | 50.0 | 50 | 100 | 74 | 122 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08050103-01
RunID: N_080504D-4417269 Units: ug/L
Analysis Date: 05/05/2008 3:39 Analyst: LT

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

## Quality Control Report

### Conoco Phillips

**Johnston Federal #4**

**Analysis:** Volatile Organics by Method 8260B **WorkOrder:** 08050162
**Method:** SW8260B **Lab Batch ID:** R236314

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 20 | 17.0 | 85.0 | 20 | 19.0 | 95.0 | 11.1 | 22 | 76 | 127 |
| Ethylbenzene | ND | 20 | 15.0 | 75.0 | 20 | 16.0 | 80.0 | 6.45 | 20 | 35 | 175 |
| Toluene | ND | 20 | 18.0 | 90.0 | 20 | 19.0 | 95.0 | 5.41 | 24 | 70 | 131 |
| m,p-Xylene | ND | 40 | 31.0 | 77.5 | 40 | 34.0 | 85.0 | 9.23 | 20 | 35 | 175 |
| o-Xylene | ND | 20 | 17.0 | 85.0 | 20 | 17.0 | 85.0 | 0 | 20 | 35 | 175 |
| Xylenes,Total | ND | 60 | 48 | 80 | 60 | 51 | 85 | 6.1 | 20 | 35 | 175 |
| Surr: 1,2-Dichloroethane-d4 | ND | 50 | 41 | 82.0 | 50 | 39.0 | 78.0 | 5.00 | 30 | 62 | 130 |
| Surr: 4-Bromofluorobenzene | ND | 50 | 49 | 98.0 | 50 | 48.0 | 96.0 | 2.06 | 30 | 70 | 130 |
| Surr: Toluene-d8 | ND | 50 | 53 | 106 | 50 | 52.0 | 104 | 1.90 | 30 | 74 | 122 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
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# Quality Control Report

## Conoco Phillips

**Johnston Federal #4**

**Analysis:** Volatile Organics by Method 8260B
**Method:** SW8260B

**WorkOrder:** 08050162
**Lab Batch ID:** R236741

### Method Blank

RunID: N_080507A-4424595 Units: ug/L
Analysis Date: 05/07/2008 16:38 Analyst: LT
Preparation Date: 05/07/2008 16:38 Prep By: Method

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08050162-01A | MW-1 |
| 08050162-02A | Duplicate |

| Analyte | Result | Rep Limit |
|---|---|---|
| Benzene | ND | 5.0 |
| Ethylbenzene | ND | 5.0 |
| Toluene | ND | 5.0 |
| m,p-Xylene | ND | 5.0 |
| o-Xylene | ND | 5.0 |
| Xylenes,Total | ND | 5.0 |
| Surr: 1,2-Dichloroethane-d4 | 96.0 | 62-130 |
| Surr: 4-Bromofluorobenzene | 88.0 | 70-130 |
| Surr: Toluene-d8 | 96.0 | 74-122 |

### Laboratory Control Sample (LCS)

RunID: N_080507A-4424594 Units: ug/L
Analysis Date: 05/07/2008 15:35 Analyst: LT
Preparation Date: 05/07/2008 15:35 Prep By: Method

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Benzene | 20.0 | 19.0 | 95.0 | 76 | 126 |
| Ethylbenzene | 20.0 | 16.0 | 80.0 | 67 | 122 |
| Toluene | 20.0 | 18.0 | 90.0 | 70 | 131 |
| m,p-Xylene | 40.0 | 33.0 | 82.5 | 72 | 150 |
| o-Xylene | 20.0 | 17.0 | 85.0 | 78 | 141 |
| Xylenes,Total | 60 | 50 | 83 | 72 | 150 |
| Surr: 1,2-Dichloroethane-d4 | 50.0 | 48 | 96.0 | 62 | 130 |
| Surr: 4-Bromofluorobenzene | 50.0 | 48 | 96.0 | 70 | 130 |
| Surr: Toluene-d8 | 50.0 | 48 | 96.0 | 74 | 122 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08050334-01
RunID: N_080507A-4424596 Units: ug/L
Analysis Date: 05/07/2008 17:04 Analyst: LT

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

## Quality Control Report

### Conoco Phillips

**Johnston Federal #4**

**Analysis:** Volatile Organics by Method 8260B **WorkOrder:** 08050162
**Method:** SW8260B **Lab Batch ID:** R236741

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 20 | 20.0 | 100 | 20 | 19.0 | 95.0 | 5.13 | 22 | 76 | 127 |
| Ethylbenzene | ND | 20 | 18.0 | 90.0 | 20 | 17.0 | 85.0 | 5.71 | 20 | 35 | 175 |
| Toluene | ND | 20 | 20.0 | 100 | 20 | 19.0 | 95.0 | 5.13 | 24 | 70 | 131 |
| m,p-Xylene | ND | 40 | 37.0 | 92.5 | 40 | 35.0 | 87.5 | 5.56 | 20 | 35 | 175 |
| o-Xylene | ND | 20 | 20.0 | 100 | 20 | 18.0 | 90.0 | 10.5 | 20 | 35 | 175 |
| Xylenes,Total | ND | 60 | 57 | 95 | 60 | 53 | 88 | 7.3 | 20 | 35 | 175 |
| Surr: 1,2-Dichloroethane-d4 | ND | 50 | 46 | 92.0 | 50 | 47.0 | 94.0 | 2.15 | 30 | 62 | 130 |
| Surr: 4-Bromofluorobenzene | ND | 50 | 51 | 102 | 50 | 50.0 | 100 | 1.98 | 30 | 70 | 130 |
| Surr: Toluene-d8 | ND | 50 | 51 | 102 | 50 | 50.0 | 100 | 1.98 | 30 | 74 | 122 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

*Sample Receipt Checklist*

*And*

*Chain of Custody*

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

## Sample Receipt Checklist

| | | | |
|---|---|---|---|
| Workorder: | 08050162 | Received By: | AE |
| Date and Time Received: | 5/2/2008 10:00:00 AM | Carrier name: | Fedex-Standard Overnight |
| Temperature: | 3.5°C | Chilled by: | Water Ice |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1. | Shipping container/cooler in good condition? | Yes | ☑ | No | ☐ | Not Present ☐ |
| 2. | Custody seals intact on shippping container/cooler? | Yes | ☑ | No | ☐ | Not Present ☐ |
| 3. | Custody seals intact on sample bottles? | Yes | ☐ | No | ☐ | Not Present ☑ |
| 4. | Chain of custody present? | Yes | ☑ | No | ☐ | |
| 5. | Chain of custody signed when relinquished and received? | Yes | ☑ | No | ☐ | |
| 6. | Chain of custody agrees with sample labels? | Yes | ☑ | No | ☐ | |
| 7. | Samples in proper container/bottle? | Yes | ☑ | No | ☐ | |
| 8. | Sample containers intact? | Yes | ☑ | No | ☐ | |
| 9. | Sufficient sample volume for indicated test? | Yes | ☑ | No | ☐ | |
| 10. | All samples received within holding time? | Yes | ☑ | No | ☐ | |
| 11. | Container/Temp Blank temperature in compliance? | Yes | ☑ | No | ☐ | |
| 12. | Water - VOA vials have zero headspace? | Yes | ☑ | No | ☐ | VOA Vials Not Present ☐ |
| 13. | Water - Preservation checked upon receipt (except VOA*)? | Yes | ☐ | No | ☐ | Not Applicable ☑ |

*VOA Preservation Checked After Sample Analysis

SPL Representative: _____ Contact Date & Time: _____

Client Name Contacted: _____

Non Conformance Issues: _____

Client Instructions: _____

# SPL, Inc.

**Analysis Request & Chain of Custody Record**

SPL Workorder No.: 297485 (C8050162) page ___ of ___

Client Name: Tetra Tech
Address: 6121 Indian School Rd. NE Suite 200
Phone/Fax: 505-237-8440
Client Contact: Kelly Blanchard Email: Kelly.blanchard@tetratech.com
Project Name/No.: Johnston Federal #4
Site Name: Same
Site Location: San Juan County, NM
Invoice To: Ph:

| SAMPLE ID | DATE | TIME | comp | grab | matrix (W=water SL=sludge O=oil S=soil X=other) | bottle (P=plastic G=glass A=amber glass V=vial X=other) | size (1=1 liter 8=8oz 4=4oz 16=16oz 40=vial X=other) | pres. (1=HCl 3=H2SO4 2=HNO3 X=other) | Number of Containers | Requested Analysis: BTEX |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 4/30/08 | 15:20 | | X | W | V | 40 | 1 | 3 | X |
| Duplicate | 4/30/08 | 15:25 | | X | W | V | 40 | 1 | 3 | X |
| Trip Blank | 4/30/08 | 15:30 | | X | W | V | 40 | 1 | 2 | X |

Client/Consultant Remarks:

Laboratory remarks:

Intact? Y N
Ice? Y N
Temp: 3.5c

**Requested TAT**
Contract ☐ 72hr ☐
24hr ☐ Standard ☒
48hr ☐
Other ☐ _____

Special Reporting Requirements Results: Fax ☐ Email ☐ PDF ☐
Standard QC ☒ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial): BA

| | date | time | |
|---|---|---|---|
| 1. Relinquished by Sampler: | 5/1/08 | 11:00 | 2. Received by: |
| 3. Relinquished by: | date | time | 4. Received by: |
| 5. Relinquished by: | 5/2/8 | 1000 | 6. Received by Laboratory: |

☒ 8880 Interchange Drive, Houston, TX 77054 (713) 660-0901
☐ 500 Ambassador Caffery Parkway, Scott, LA 70583 (337) 237-4775
☐ 459 Hughes Drive, Traverse City, MI 49686 (231) 947-5777

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

## Conoco Phillips

**Certificate of Analysis Number:**

**08071475**

| Report To: | | Project Name: | COP Johnson Fed4 |
|---|---|---|---|
| Tetra Tech EM, Inc. | | Site: | Aztec,NM |
| Kelly Blanchard | | Site Address: | |
| 6121 Indian School Road, N.E. | | | |
| Suite 200 | | PO Number: | 4510016699 |
| Albuquerque | | State: | New Mexico |
| NM | | State Cert. No.: | |
| 87110- | | Date Reported: | 8/8/2008 |
| ph: (505) 881-3188 | fax: | | |

This Report Contains A Total Of 9 Pages

Excluding This Page, Chain Of Custody

And

Any Attachments

8/8/2008

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

## Case Narrative for:

# Conoco Phillips

## Certificate of Analysis Number:

## 08071475

| Report To: | | Project Name: | COP Johnson Fed4 |
|---|---|---|---|
| Tetra Tech EM, Inc. | | Site: | Aztec,NM |
| Kelly Blanchard | | Site Address: | |
| 6121 Indian School Road, N.E. | | | |
| Suite 200 | | PO Number: | 4510016699 |
| Albuquerque | | State: | New Mexico |
| NM | | State Cert. No.: | |
| 87110- | | Date Reported: | 8/8/2008 |
| ph: (505) 881-3188 | fax: | | |

Per the Conoco Phillips TSM Revision 0, a copy of the internal chain of custody is to be included in final data package. However, due to LIMS limitations, this cannot be provided at this time.

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Some of the percent recoveries and RPD's on the QC report for the MS/MSD may be different than the calculated recoveries and RPD's using the sample result and the MS/MSD results that appear on the report because, the actual raw result is used to perform the calculations for percent recovery and RPD.

*Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).*

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.



SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Bethany Agarwal

Bethany A. Agarwal
Senior Project Manager


8/8/2008
Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

# Conoco Phillips

## Certificate of Analysis Number:

## 08071475

**Report To:** Tetra Tech EM, Inc.
Kelly Blanchard
6121 Indian School Road, N.E.
Suite 200
Albuquerque
NM
87110-
ph: (505) 881-3188 fax: (505) 881-3283

**Fax To:**

**Project Name:** COP Johnson Fed4
**Site:** Aztec,NM
**Site Address:**
**PO Number:** 4510016699
**State:** New Mexico
**State Cert. No.:**
**Date Reported:** 8/8/2008

| Client Sample ID | Lab Sample ID | Matrix | Date Collected | Date Received | COC ID | HOLD |
|---|---|---|---|---|---|---|
| MW-1 | 08071475-01 | Water | 7/23/2008 10:40:00 AM | 7/24/2008 9:30:00 AM | | ☐ |
| Duplicate | 08071475-02 | Water | 7/23/2008 10:45:00 AM | 7/24/2008 9:30:00 AM | | ☐ |

Bethany A. Agarwal
Senior Project Manager

8/8/2008
Date

Richard R. Reed
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-1 **Collected:** 07/23/2008 10:40 **SPL Sample ID:** 08071475-01

**Site: Aztec,NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANICS BY METHOD 8260B** | | | **MCL** | **SW8260B** | **Units: ug/L** | | |
| Benzene | 7100 | | 250 | 50 | 08/01/08 17:32 | JC | 4606078 |
| Ethylbenzene | 450 | | 250 | 50 | 08/01/08 17:32 | JC | 4606078 |
| Toluene | 2200 | | 250 | 50 | 08/01/08 17:32 | JC | 4606078 |
| m,p-Xylene | 8500 | | 250 | 50 | 08/01/08 17:32 | JC | 4606078 |
| o-Xylene | 2100 | | 250 | 50 | 08/01/08 17:32 | JC | 4606078 |
| Xylenes,Total | 10600 | | 250 | 50 | 08/01/08 17:32 | JC | 4606078 |
| Surr: 1,2-Dichloroethane-d4 | 104 | | % 62-130 | 50 | 08/01/08 17:32 | JC | 4606078 |
| Surr: 4-Bromofluorobenzene | 100 | | % 70-130 | 50 | 08/01/08 17:32 | JC | 4606078 |
| Surr: Toluene-d8 | 104 | | % 74-122 | 50 | 08/01/08 17:32 | JC | 4606078 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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(713) 660-0901

**Client Sample ID:** Duplicate **Collected:** 07/23/2008 10:45 **SPL Sample ID:** 08071475-02

**Site: Aztec,NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANICS BY METHOD 8260B** | | | **MCL** | **SW8260B** | **Units: ug/L** | | |
| Benzene | 7000 | | 250 | 50 | 08/01/08 18:01 | JC | 4606080 |
| Ethylbenzene | 470 | | 250 | 50 | 08/01/08 18:01 | JC | 4606080 |
| Toluene | 2100 | | 250 | 50 | 08/01/08 18:01 | JC | 4606080 |
| m,p-Xylene | 8500 | | 250 | 50 | 08/01/08 18:01 | JC | 4606080 |
| o-Xylene | 2100 | | 250 | 50 | 08/01/08 18:01 | JC | 4606080 |
| Xylenes,Total | 10600 | | 250 | 50 | 08/01/08 18:01 | JC | 4606080 |
| Surr: 1,2-Dichloroethane-d4 | 104 | | % 62-130 | 50 | 08/01/08 18:01 | JC | 4606080 |
| Surr: 4-Bromofluorobenzene | 100 | | % 70-130 | 50 | 08/01/08 18:01 | JC | 4606080 |
| Surr: Toluene-d8 | 104 | | % 74-122 | 50 | 08/01/08 18:01 | JC | 4606080 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

# *Quality Control Documentation*

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Volatile Organics by Method 8260B
**Method:** SW8260B
**WorkOrder:** 08071475
**Lab Batch ID:** R247074

### Method Blank

RunID: Q_080801B-4606067 Units: ug/L
Analysis Date: 08/01/2008 14:40 Analyst: JC
Preparation Date: 08/01/2008 14:40 Prep By: Method

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08071475-01A | MW-1 |
| 08071475-02A | Duplicate |

| Analyte | Result | Rep Limit |
|---|---|---|
| Benzene | ND | 5.0 |
| Ethylbenzene | ND | 5.0 |
| Toluene | ND | 5.0 |
| m,p-Xylene | ND | 5.0 |
| o-Xylene | ND | 5.0 |
| Xylenes,Total | ND | 5.0 |
| Surr: 1,2-Dichloroethane-d4 | 106.0 | 62-130 |
| Surr: 4-Bromofluorobenzene | 100.0 | 70-130 |
| Surr: Toluene-d8 | 104.0 | 74-122 |

### Laboratory Control Sample (LCS)

RunID: Q_080801B-4606066 Units: ug/L
Analysis Date: 08/01/2008 14:11 Analyst: JC
Preparation Date: 08/01/2008 14:11 Prep By: Method

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Benzene | 20.0 | 20.0 | 100 | 76 | 126 |
| Ethylbenzene | 20.0 | 20.0 | 100 | 67 | 122 |
| Toluene | 20.0 | 20.0 | 100 | 70 | 131 |
| m,p-Xylene | 40.0 | 42.0 | 105 | 72 | 150 |
| o-Xylene | 20.0 | 21.0 | 105 | 78 | 141 |
| Xylenes,Total | 60 | 63 | 100 | 72 | 150 |
| Surr: 1,2-Dichloroethane-d4 | 50.0 | 52 | 104 | 62 | 130 |
| Surr: 4-Bromofluorobenzene | 50.0 | 51 | 102 | 70 | 130 |
| Surr: Toluene-d8 | 50.0 | 53 | 106 | 74 | 122 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08071472-02
RunID: Q_080801B-4606084 Units: ug/L
Analysis Date: 08/01/2008 18:58 Analyst: JC

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

## Quality Control Report

### Conoco Phillips

**COP Johnson Fed4**

**Analysis:** *Volatile Organics by Method 8260B* **WorkOrder:** *08071475*
**Method:** **SW8260B** **Lab Batch ID:** **R247074**

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 20 | 18.0 | 85.5 | 20 | 18.0 | 85.5 | 0 | 22 | 76 | 127 |
| Ethylbenzene | ND | 20 | 17.0 | 85.0 | 20 | 16.0 | 80.0 | 6.06 | 20 | 35 | 175 |
| Toluene | ND | 20 | 17.0 | 85.0 | 20 | 15.0 | 75.0 | 12.5 | 24 | 70 | 131 |
| m,p-Xylene | ND | 40 | 31.0 | 77.5 | 40 | 29.0 | 72.5 | 6.67 | 20 | 35 | 175 |
| o-Xylene | ND | 20 | 16.0 | 80.0 | 20 | 15.0 | 75.0 | 6.45 | 20 | 35 | 175 |
| Xylenes,Total | ND | 60 | 47 | 78 | 60 | 44 | 73 | 6.6 | 20 | 35 | 175 |
| Surr: 1,2-Dichloroethane-d4 | ND | 50 | 53 | 106 | 50 | 56.0 | 112 | 5.50 | 30 | 62 | 130 |
| Surr: 4-Bromofluorobenzene | ND | 50 | 50 | 100 | 50 | 50.0 | 100 | 0 | 30 | 70 | 130 |
| Surr: Toluene-d8 | ND | 50 | 52 | 104 | 50 | 51.0 | 102 | 1.94 | 30 | 74 | 122 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

# *Sample Receipt Checklist*

# *And*

# *Chain of Custody*

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

# Sample Receipt Checklist

| | | | |
|---|---|---|---|
| Workorder: | **08071475** | Received By: | **BB** |
| Date and Time Received: | **7/24/2008 9:30:00 AM** | Carrier name: | **Fedex-Priority** |
| Temperature: | **3.5°C** | Chilled by: | **Water Ice** |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1. | **Shipping container/cooler in good condition?** | Yes | ☑ | No ☐ | Not Present | ☐ |
| 2. | **Custody seals intact on shippping container/cooler?** | Yes | ☑ | No ☐ | Not Present | ☐ |
| 3. | **Custody seals intact on sample bottles?** | Yes | ☐ | No ☐ | Not Present | ☑ |
| 4. | **Chain of custody present?** | Yes | ☑ | No ☐ | | |
| 5. | **Chain of custody signed when relinquished and received?** | Yes | ☑ | No ☐ | | |
| 6. | **Chain of custody agrees with sample labels?** 1.Client did not check analysis on chain of custody. | Yes | ☐ | No ☑ | | |
| 7. | **Samples in proper container/bottle?** | Yes | ☑ | No ☐ | | |
| 8. | **Sample containers intact?** | Yes | ☑ | No ☐ | | |
| 9. | **Sufficient sample volume for indicated test?** | Yes | ☑ | No ☐ | | |
| 10. | **All samples received within holding time?** | Yes | ☑ | No ☐ | | |
| 11. | **Container/Temp Blank temperature in compliance?** | Yes | ☑ | No ☐ | | |
| 12. | **Water - VOA vials have zero headspace?** | Yes | ☑ | No ☐ | VOA Vials Not Present | ☐ |
| 13. | **Water - Preservation checked upon receipt (except VOA*)?** | Yes | ☐ | No ☐ | Not Applicable | ☑ |

***VOA Preservation Checked After Sample Analysis**

**SPL Representative:** _____ **Contact Date & Time:** _____

**Client Name Contacted:** _____

**Non Conformance Issues:** 1.Logged for 8260-BTEX per bottle order request.

**Client Instructions:** _____

# Chain of Custody Record

**Client: Tetra Tech/ Conoco Phillips** — **SPL Workorder Number:** 0807 1475

**Attention: Kelly Blanchard/Tetra Tech**

Phone: 505-237-8440 | email: kelly.blanchard@tetratech.c

Address: 6121 Indian School Road, NE Ste. 200

City: Albuquerque | State: NM | Zip Code: 87110

Project Name: ~~Flora Vista~~ ~~Hopwell K~~ Johnston Federal #4

P.O. Number: ~~3959~~ 4927

Sampled By: Kelly E Blanchard / Christine Mathews

Signature

| Sample ID | Collected Date | Collected Time | Sample Type Comp | Sample Type Grab | Matrix Water | Matrix Soil | Bottle | Preservative Type | # of Containers | Requested Analysis: B260-BTEX |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 7/23 | 1040 | | X | X | | 1 | 3 | | |
| Duplicate | 7/23 | 1645 | | X | X | | 1 | 3 | | |

Turnaround Time Requirements
24 hr( ) 48 hr( )
72 hr( ) 5 wday( )
10 wday - Standard(X)

**Remarks:**

Intact? Y or N
Temperature: 3.5°C BA

**Bottle Types:** 1: 3/40ml Vials 2. 1L Glass 3. 1L Plastic 4. 1L Amber Glass 5. 8oz Plastic

**Preservative Types:** 1: NONE 2. HNO3 3. HCL 4. H2SO4

| Relinquished by Sampler: | Date | Time | Received by: |
|---|---|---|---|
| Kelly E Blanchard | 7/23/08 | 16:30 | |
| Relinquished by: | Date | Time | Received by: |
| | | | |
| Relinquished by: | Date | Time | Received by SPL, Inc. |
| | 7/24/08 | 9:30 | B Blanco |

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

## Conoco Phillips

**Certificate of Analysis Number:**

**08101602**

| Report To: | | Project Name: | COP Johnson Fed4 |
|---|---|---|---|
| Tetra Tech, Inc. | | Site: | Aztec, NM |
| Kelly Blanchard | | Site Address: | |
| 6121 Indian School Road, N.E. | | | |
| Suite 200 | | PO Number: | 4510016699 |
| Albuquerque | | State: | New Mexico |
| NM | | State Cert. No.: | |
| 87110- | | Date Reported: | 11/24/2008 |
| ph: (505) 237-8440 | fax: | | |

This Report Contains A Total Of 70 Pages

Excluding This Page, Chain Of Custody

And

Any Attachments

11/24/2008

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

## Case Narrative for:

# Conoco Phillips

## Certificate of Analysis Number:

## 08101602

| Report To: | | Project Name: | COP Johnson Fed4 |
|---|---|---|---|
| Tetra Tech, Inc. | | Site: | Aztec, NM |
| Kelly Blanchard | | Site Address: | |
| 6121 Indian School Road, N.E. | | | |
| Suite 200 | | PO Number: | 4510016699 |
| Albuquerque | | State: | New Mexico |
| NM | | State Cert. No.: | |
| 87110- | | Date Reported: | 11/24/2008 |
| ph: (505) 237-8440 | fax: | | |

Upon receipt of your samples, all samples were received expired for the Nitrate and Orthophoshate analysis. Per previous instructions, SPL continued with the analysis.

Per the Conoco Phillips TSM Revision 0, a copy of the internal chain of custody is to be included in final data package. However, due to LIMS limitations, this cannot be provided at this time.

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Due to limited sample volume, a Matrix Spike (MS) or Matrix Spike Duplicate (MSD) was not extracted with Batch ID: 84920 for the Diesel Range Organics analysis by SW846 Method 8015. A Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) were extracted with the analytical batch and serve as the batch quality control (QC). The LCS and LCSD recovered acceptably and precision criteria were met.

Your sample ID "MW-3" (SPL ID: 08101602-02) was randomly selected for use in SPL's quality control program for the Total Metals analysis by SW846 Method 6010. The MSD recovery was outside of the advisable quality control limits for Iron (Batch ID: 84958) due to matrix interference. A Post Digestion Spike (PDS) and Post Digestion Spike Duplicate (PDSD) was performed and all recoveries were within quality control limits. A Laboratory Control Sample (LCS) was analyzed as a quality control check for the analytical batch and all recoveries were within acceptable limits.

Your sample ID "MW-3" (SPL ID: 08101602-02) was randomly selected for use in SPL's quality control program for the Total Metals analysis by SW846 Method 6020. The MSD recovery was outside of the advisable quality control limits for Beryllium (Batch ID: 84958B-I) due to matrix interference. A Post Digestion Spike (PDS) and Post Digestion Spike Duplicate (PDSD) was performed and all recoveries were outside quality control limits. A Laboratory Control Sample (LCS) was analyzed as a quality control check for the analytical batch and all recoveries were within acceptable limits.

Due to limited sample volume, a Matrix Spike (MS) or Matrix Spike Duplicate (MSD) was not extracted with Batch ID: 84949 for the Semivolatile Organics analysis by SW846 Method 8270. A Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) were extracted with the analytical batch and serve as the batch quality control (QC). The LCS and LCSD recovered acceptably and precision criteria were met.

Some of the percent recoveries and RPD's on the QC report for the MS/MSD may be different than the calculated recoveries and RPD's using the sample result and the MS/MSD results that appear on the report because, the actual raw result is used to perform the calculations for percent recovery and RPD.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.



Erica Cardenas — Date

Project Manager

Test results meet all requirements of NELAC, unless specified in the narrative.

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HOUSTON, TX 77054
(713) 660-0901

**Case Narrative for:**

## Conoco Phillips

**Certificate of Analysis Number:**

## 08101602



SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.



11/24/2008

Erica Cardenas
Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

# Conoco Phillips

## Certificate of Analysis Number:

## 08101602

**Report To:** Tetra Tech, Inc.
Kelly Blanchard
6121 Indian School Road, N.E.
Suite 200
Albuquerque
NM
87110-
ph: (505) 237-8440 fax: (505) 881-3283

**Fax To:**

**Project Name:** COP Johnson Fed4
**Site:** Aztec, NM
**Site Address:**
**PO Number:** 4510016699
**State:** New Mexico
**State Cert. No.:**
**Date Reported:** 11/24/2008

| Client Sample ID | Lab Sample ID | Matrix | Date Collected | Date Received | COC ID | HOLD |
|---|---|---|---|---|---|---|
| MW-2 | 08101602-01 | Water | 10/24/2008 12:35:00 PM | 10/28/2008 9:30:00 AM | | ☐ |
| MW-3 | 08101602-02 | Water | 10/24/2008 1:15:00 PM | 10/28/2008 9:30:00 AM | 320232 | ☐ |
| MW-4 | 08101602-03 | Water | 10/24/2008 2:45:00 PM | 10/28/2008 9:30:00 AM | 320232 | ☐ |
| MW-1 | 08101602-04 | Water | 10/24/2008 3:50:00 PM | 10/28/2008 9:30:00 AM | 320232 | ☐ |
| Duplicate | 08101602-05 | Water | 10/24/2008 3:00:00 PM | 10/28/2008 9:30:00 AM | 320232 | ☐ |
| (Trip Blank) | 08101602-06 | Water | 10/27/2008 2:30:00 PM | 10/28/2008 9:30:00 AM | | ☐ |

E A Cardenas

11/24/2008

Erica Cardenas
Project Manager

Date

Richard R. Reed
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-2 **Collected:** 10/24/2008 12:35 **SPL Sample ID:** 08101602-01

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **DIESEL RANGE ORGANICS** | | | **MCL** | **SW8015B** | **Units: mg/L** | | |
| Diesel Range Organics (C10-C28) | ND | | 0.1 | 1 | 11/06/08 16:58 | NW | 4757253 |
| Surr: n-Pentacosane | 77.2 | | % 20-150 | 1 | 11/06/08 16:58 | NW | 4757253 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3510C | 10/29/2008 18:43 | N_M | 1.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **GASOLINE RANGE ORGANICS** | | | **MCL** | **SW8015B** | **Units: mg/L** | | |
| Gasoline Range Organics | ND | | 0.1 | 1 | 11/02/08 7:07 | WLV | 4747583 |
| Surr: 1,4-Difluorobenzene | 88.9 | | % 60-155 | 1 | 11/02/08 7:07 | WLV | 4747583 |
| Surr: 4-Bromofluorobenzene | 90.8 | | % 50-158 | 1 | 11/02/08 7:07 | WLV | 4747583 |
| **ION CHROMATOGRAPHY** | | | **MCL** | **E300.0** | **Units: mg/L** | | |
| Chloride | 15.6 | | 2 | 4 | 11/10/08 19:58 | TW | 4766026 |
| Fluoride | ND | | 2 | 4 | 11/10/08 19:58 | TW | 4766026 |
| Ortho-phosphate (As P) | ND | | 5 | 10 | 11/20/08 6:15 | TW | 4780771 |
| Sulfate | 974 | | 50 | 100 | 11/11/08 13:54 | TW | 4766443 |
| **MERCURY, TOTAL** | | | **MCL** | **SW7470A** | **Units: mg/L** | | |
| Mercury | ND | | 0.0002 | 1 | 11/06/08 14:11 | F_S | 4755687 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW7470A | 11/06/2008 13:18 | F_S | 1.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **METALS BY METHOD 6010B, TOTAL** | | | **MCL** | **SW6010B** | **Units: mg/L** | | |
| Boron | ND | | 0.1 | 1 | 10/31/08 13:26 | S_C | 4745442 |
| Calcium | 415 | | 0.1 | 1 | 10/31/08 13:26 | S_C | 4745442 |
| Iron | 2.08 | | 0.02 | 1 | 10/31/08 13:26 | S_C | 4745442 |
| Magnesium | 66.1 | | 0.1 | 1 | 10/31/08 13:26 | S_C | 4745442 |
| Manganese | 0.337 | | 0.005 | 1 | 10/31/08 13:26 | S_C | 4745442 |
| Sodium | 86.6 | | 0.5 | 1 | 10/31/08 13:26 | S_C | 4745442 |
| Tin | ND | | 0.05 | 1 | 10/31/08 13:26 | S_C | 4745442 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3010A | 10/30/2008 15:30 | BDG | 1.00 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-2 **Collected:** 10/24/2008 12:35 **SPL Sample ID:** 08101602-01

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **METALS BY METHOD 6020A, TOTAL** | | | **MCL** | **SW6020A** | **Units: mg/L** | | |
| Aluminum | 2.09 | | 0.01 | 1 | 10/31/08 16:53 | AL_H | 4746381 |
| Antimony | ND | | 0.005 | 1 | 10/31/08 16:53 | AL_H | 4746381 |
| Arsenic | ND | | 0.005 | 1 | 10/31/08 16:53 | AL_H | 4746381 |
| Barium | 0.049 | | 0.005 | 1 | 10/31/08 16:53 | AL_H | 4746381 |
| Beryllium | ND | | 0.004 | 1 | 11/06/08 15:51 | AL_H | 4756054 |
| Cadmium | ND | | 0.005 | 1 | 10/31/08 16:53 | AL_H | 4746381 |
| Chromium | 0.00523 | | 0.005 | 1 | 10/31/08 16:53 | AL_H | 4746381 |
| Cobalt | ND | | 0.005 | 1 | 10/31/08 16:53 | AL_H | 4746381 |
| Copper | ND | | 0.005 | 1 | 10/31/08 16:53 | AL_H | 4746381 |
| Lead | ND | | 0.005 | 1 | 10/31/08 16:53 | AL_H | 4746381 |
| Manganese | 0.308 | | 0.005 | 1 | 10/31/08 16:53 | AL_H | 4746381 |
| Molybdenum | ND | | 0.01 | 1 | 11/07/08 0:49 | AL_H | 4757063 |
| Nickel | ND | | 0.005 | 1 | 10/31/08 16:53 | AL_H | 4746381 |
| Selenium | ND | | 0.005 | 1 | 10/31/08 16:53 | AL_H | 4746381 |
| Silver | ND | | 0.005 | 1 | 10/31/08 16:53 | AL_H | 4746381 |
| Thallium | ND | | 0.005 | 1 | 10/31/08 16:53 | AL_H | 4746381 |
| Tungsten | ND | | 0.01 | 1 | 11/08/08 22:17 | BDG | 4759522 |
| Vanadium | 0.00899 | | 0.005 | 1 | 11/07/08 0:49 | AL_H | 4757063 |
| Zinc | 0.0136 | | 0.01 | 1 | 11/10/08 0:16 | BDG | 4759798 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3010A | 10/30/2008 15:30 | BDG | 1.00 |

| NITRATE NITROGEN (AS N), TOTAL | | | **MCL** | **E353.2** | **Units: mg/L** | | |
|---|---|---|---|---|---|---|---|
| Nitrogen,Nitrate (As N) | ND | | 0.5 | 1 | 11/03/08 15:17 | TW | 4757600 |

**Qualifiers:**

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B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-2 **Collected:** 10/24/2008 12:35 **SPL Sample ID:** 08101602-01

**Site:** Aztec, NM

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **SEMIVOLATILE ORGANICS BY METHOD 8270C** | | | **MCL** | **SW8270C** | **Units: ug/L** | | |
| 1,2,4-Trichlorobenzene | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 1,2-Dichlorobenzene | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 1,2-Diphenylhydrazine | ND | | 10 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 1,3-Dichlorobenzene | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 1,4-Dichlorobenzene | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 2,4,5-Trichlorophenol | ND | | 10 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 2,4,6-Trichlorophenol | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 2,4-Dichlorophenol | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 2,4-Dimethylphenol | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 2,4-Dinitrophenol | ND | | 25 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 2,4-Dinitrotoluene | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 2,6-Dinitrotoluene | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 2-Chloronaphthalene | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 2-Chlorophenol | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 2-Methylnaphthalene | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 2-Nitroaniline | ND | | 25 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 2-Nitrophenol | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 3,3'-Dichlorobenzidine | ND | | 10 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 3-Nitroaniline | ND | | 25 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 4,6-Dinitro-2-methylphenol | ND | | 25 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 4-Bromophenyl phenyl ether | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 4-Chloro-3-methylphenol | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 4-Chloroaniline | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 4-Chlorophenyl phenyl ether | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 4-Nitroaniline | ND | | 25 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 4-Nitrophenol | ND | | 25 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Acenaphthene | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Acenaphthylene | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Aniline | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Anthracene | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Benz(a)anthracene | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Benzo(a)pyrene | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Benzo(b)fluoranthene | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Benzo(g,h,i)perylene | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Benzo(k)fluoranthene | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Benzoic acid | ND | | 25 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Benzyl alcohol | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Bis(2-chloroethoxy)methane | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Bis(2-chloroethyl)ether | ND | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |

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J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
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MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-2 **Collected:** 10/24/2008 12:35 **SPL Sample ID:** 08101602-01

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|---|
| Bis(2-chloroisopropyl)ether | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Bis(2-ethylhexyl)phthalate | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Butyl benzyl phthalate | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Carbazole | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Chrysene | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Dibenz(a,h)anthracene | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Dibenzofuran | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Diethyl phthalate | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Dimethyl phthalate | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Di-n-butyl phthalate | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Di-n-octyl phthalate | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Fluoranthene | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Fluorene | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Hexachlorobenzene | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Hexachlorobutadiene | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Hexachlorocyclopentadiene | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Hexachloroethane | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Indeno(1,2,3-cd)pyrene | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Isophorone | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Naphthalene | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Nitrobenzene | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| N-Nitrosodi-n-propylamine | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| N-Nitrosodiphenylamine | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Pentachlorophenol | ND | | | 25 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Phenanthrene | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Phenol | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Pyrene | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Pyridine | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 2-Methylphenol | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| 3 & 4-Methylphenol | ND | | | 5 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Surr: 2,4,6-Tribromophenol | 70.7 | | % | 10-123 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Surr: 2-Fluorobiphenyl | 60.0 | | % | 23-116 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Surr: 2-Fluorophenol | 44.0 | | % | 16-110 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Surr: Nitrobenzene-d5 | 56.0 | | % | 21-114 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Surr: Phenol-d5 | 33.3 | | % | 10-110 | 1 | 11/06/08 14:27 | GY | 4755637 |
| Surr: Terphenyl-d14 | 68.0 | | % | 22-141 | 1 | 11/06/08 14:27 | GY | 4755637 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3510C | 10/30/2008 16:53 | LLL | 1.00 |

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TNTC - Too numerous to count
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MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-2 **Collected:** 10/24/2008 12:35 **SPL Sample ID:** 08101602-01

**Site:** Aztec, NM

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANICS BY METHOD 8260B** | | | **MCL** | **SW8260B** | **Units: ug/L** | | |
| 1,1,1,2-Tetrachloroethane | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 1,1,1-Trichloroethane | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 1,1,2,2-Tetrachloroethane | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 1,1,2-Trichloroethane | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 1,1-Dichloroethane | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 1,1-Dichloroethene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 1,1-Dichloropropene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 1,2,3-Trichlorobenzene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 1,2,3-Trichloropropane | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 1,2,4-Trichlorobenzene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 1,2,4-Trimethylbenzene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 1,2-Dibromo-3-chloropropane | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 1,2-Dibromoethane | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 1,2-Dichlorobenzene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 1,2-Dichloroethane | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 1,2-Dichloropropane | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 1,3,5-Trimethylbenzene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 1,3-Dichlorobenzene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 1,3-Dichloropropane | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 1,4-Dichlorobenzene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 2,2-Dichloropropane | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 2-Butanone | ND | | 20 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 2-Chloroethyl vinyl ether | ND | | 10 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 2-Chlorotoluene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 2-Hexanone | ND | | 10 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 4-Chlorotoluene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 4-Isopropyltoluene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 4-Methyl-2-pentanone | ND | | 10 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Acetone | ND | | 100 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Acrylonitrile | ND | | 50 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Benzene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Bromobenzene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Bromochloromethane | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Bromodichloromethane | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Bromoform | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Bromomethane | ND | | 10 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Carbon disulfide | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Carbon tetrachloride | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Chlorobenzene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |

**Qualifiers:**

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J - Estimated Value between MDL and PQL
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TNTC - Too numerous to count
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-2 **Collected:** 10/24/2008 12:35 **SPL Sample ID:** 08101602-01

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| Chloroethane | ND | | 10 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Chloroform | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Chloromethane | ND | | 10 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Dibromochloromethane | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Dibromomethane | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Dichlorodifluoromethane | ND | | 10 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Ethylbenzene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Hexachlorobutadiene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Isopropylbenzene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Methyl tert-butyl ether | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Methylene chloride | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Naphthalene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| n-Butylbenzene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| n-Propylbenzene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| sec-Butylbenzene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Styrene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| tert-Butylbenzene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Tetrachloroethene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Toluene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Trichloroethene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Trichlorofluoromethane | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Vinyl acetate | ND | | 10 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Vinyl chloride | ND | | 10 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| cis-1,2-Dichloroethene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| cis-1,3-Dichloropropene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| m,p-Xylene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| o-Xylene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| trans-1,2-Dichloroethene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| trans-1,3-Dichloropropene | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| 1,2-Dichloroethene (total) | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Xylenes,Total | ND | | 5 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Surr: 1,2-Dichloroethane-d4 | 102 | | % 62-130 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Surr: 4-Bromofluorobenzene | 100 | | % 70-130 | 1 | 11/01/08 21:15 | LU_L | 4749657 |
| Surr: Toluene-d8 | 104 | | % 74-122 | 1 | 11/01/08 21:15 | LU_L | 4749657 |

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-3 **Collected:** 10/24/2008 13:15 **SPL Sample ID:** 08101602-02

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **DIESEL RANGE ORGANICS** | | | **MCL** | **SW8015B** | **Units: mg/L** | | |
| Diesel Range Organics (C10-C28) | 0.33 | | 0.1 | 1 | 11/06/08 17:19 | NW | 4757254 |
| Surr: n-Pentacosane | 89.2 | | % 20-150 | 1 | 11/06/08 17:19 | NW | 4757254 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3510C | 10/29/2008 18:43 | N_M | 1.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **GASOLINE RANGE ORGANICS** | | | **MCL** | **SW8015B** | **Units: mg/L** | | |
| Gasoline Range Organics | 0.3 | | 0.1 | 1 | 11/02/08 7:35 | WLV | 4747584 |
| Surr: 1,4-Difluorobenzene | 101 | | % 60-155 | 1 | 11/02/08 7:35 | WLV | 4747584 |
| Surr: 4-Bromofluorobenzene | 95.2 | | % 50-158 | 1 | 11/02/08 7:35 | WLV | 4747584 |
| **ION CHROMATOGRAPHY** | | | **MCL** | **E300.0** | **Units: mg/L** | | |
| Chloride | 11.7 | | 2 | 4 | 11/10/08 20:15 | TW | 4766027 |
| Fluoride | ND | | 2 | 4 | 11/10/08 20:15 | TW | 4766027 |
| Ortho-phosphate (As P) | ND | | 5 | 10 | 11/20/08 6:31 | TW | 4780772 |
| Sulfate | 714 | | 50 | 100 | 11/11/08 14:11 | TW | 4766444 |
| **MERCURY, TOTAL** | | | **MCL** | **SW7470A** | **Units: mg/L** | | |
| Mercury | ND | | 0.0002 | 1 | 11/06/08 14:14 | F_S | 4755688 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW7470A | 11/06/2008 13:18 | F_S | 1.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **METALS BY METHOD 6010B, TOTAL** | | | **MCL** | **SW6010B** | **Units: mg/L** | | |
| Boron | ND | | 0.1 | 1 | 10/31/08 12:59 | S_C | 4745436 |
| Calcium | 406 | | 0.1 | 1 | 10/31/08 12:59 | S_C | 4745436 |
| Iron | 0.542 | | 0.02 | 1 | 10/31/08 12:59 | S_C | 4745436 |
| Magnesium | 45.3 | | 0.1 | 1 | 10/31/08 12:59 | S_C | 4745436 |
| Manganese | 1.43 | | 0.005 | 1 | 10/31/08 12:59 | S_C | 4745436 |
| Sodium | 81.3 | | 0.5 | 1 | 10/31/08 12:59 | S_C | 4745436 |
| Tin | ND | | 0.05 | 1 | 10/31/08 12:59 | S_C | 4745436 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3010A | 10/30/2008 15:30 | BDG | 1.00 |

**Qualifiers:**

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-3 **Collected:** 10/24/2008 13:15 **SPL Sample ID:** 08101602-02

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **METALS BY METHOD 6020A, TOTAL** | | | **MCL** | **SW6020A** | **Units: mg/L** | | |
| Aluminum | 0.381 | | 0.01 | 1 | 10/31/08 14:59 | AL_H | 4745593 |
| Antimony | ND | | 0.005 | 1 | 10/31/08 14:59 | AL_H | 4745593 |
| Arsenic | ND | | 0.005 | 1 | 10/31/08 14:59 | AL_H | 4745593 |
| Barium | 0.0515 | | 0.005 | 1 | 10/31/08 14:59 | AL_H | 4745593 |
| Beryllium | ND | | 0.004 | 1 | 11/05/08 18:01 | AL_H | 4754465 |
| Cadmium | ND | | 0.005 | 1 | 10/31/08 14:59 | AL_H | 4745593 |
| Chromium | ND | | 0.005 | 1 | 10/31/08 14:59 | AL_H | 4745593 |
| Cobalt | ND | | 0.005 | 1 | 10/31/08 14:59 | AL_H | 4745593 |
| Copper | ND | | 0.005 | 1 | 10/31/08 14:59 | AL_H | 4745593 |
| Lead | ND | | 0.005 | 1 | 10/31/08 14:59 | AL_H | 4745593 |
| Manganese | 1.3 | | 0.005 | 1 | 10/31/08 14:59 | AL_H | 4745593 |
| Molybdenum | 0.0159 | | 0.01 | 1 | 11/07/08 0:19 | AL_H | 4757057 |
| Nickel | ND | | 0.005 | 1 | 10/31/08 14:59 | AL_H | 4745593 |
| Selenium | ND | | 0.005 | 1 | 10/31/08 14:59 | AL_H | 4745593 |
| Silver | ND | | 0.005 | 1 | 10/31/08 14:59 | AL_H | 4745593 |
| Thallium | ND | | 0.005 | 1 | 10/31/08 14:59 | AL_H | 4745593 |
| Tungsten | 0.0133 | | 0.01 | 1 | 11/08/08 21:48 | BDG | 4759516 |
| Vanadium | 0.00807 | | 0.005 | 1 | 11/07/08 0:19 | AL_H | 4757057 |
| Zinc | ND | | 0.01 | 1 | 11/09/08 23:37 | BDG | 4759792 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3010A | 10/30/2008 15:30 | BDG | 1.00 |

| NITRATE NITROGEN (AS N), TOTAL | | | **MCL** | **E353.2** | **Units: mg/L** | | |
|---|---|---|---|---|---|---|---|
| Nitrogen,Nitrate (As N) | ND | | 0.5 | 1 | 11/03/08 15:17 | TW | 4757601 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-3 **Collected:** 10/24/2008 13:15 **SPL Sample ID:** 08101602-02

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **SEMIVOLATILE ORGANICS BY METHOD 8270C** | | | **MCL** | **SW8270C** | **Units: ug/L** | | |
| 1,2,4-Trichlorobenzene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 1,2-Dichlorobenzene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 1,2-Diphenylhydrazine | ND | | 10 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 1,3-Dichlorobenzene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 1,4-Dichlorobenzene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 2,4,5-Trichlorophenol | ND | | 10 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 2,4,6-Trichlorophenol | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 2,4-Dichlorophenol | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 2,4-Dimethylphenol | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 2,4-Dinitrophenol | ND | | 25 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 2,4-Dinitrotoluene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 2,6-Dinitrotoluene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 2-Chloronaphthalene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 2-Chlorophenol | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 2-Methylnaphthalene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 2-Nitroaniline | ND | | 25 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 2-Nitrophenol | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 3,3'-Dichlorobenzidine | ND | | 10 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 3-Nitroaniline | ND | | 25 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 4,6-Dinitro-2-methylphenol | ND | | 25 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 4-Bromophenyl phenyl ether | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 4-Chloro-3-methylphenol | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 4-Chloroaniline | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 4-Chlorophenyl phenyl ether | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 4-Nitroaniline | ND | | 25 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 4-Nitrophenol | ND | | 25 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Acenaphthene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Acenaphthylene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Aniline | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Anthracene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Benz(a)anthracene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Benzo(a)pyrene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Benzo(b)fluoranthene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Benzo(g,h,i)perylene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Benzo(k)fluoranthene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Benzoic acid | ND | | 25 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Benzyl alcohol | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Bis(2-chloroethoxy)methane | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Bis(2-chloroethyl)ether | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
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* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-3 **Collected:** 10/24/2008 13:15 **SPL Sample ID:** 08101602-02

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| Bis(2-chloroisopropyl)ether | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Bis(2-ethylhexyl)phthalate | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Butyl benzyl phthalate | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Carbazole | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Chrysene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Dibenz(a,h)anthracene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Dibenzofuran | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Diethyl phthalate | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Dimethyl phthalate | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Di-n-butyl phthalate | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Di-n-octyl phthalate | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Fluoranthene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Fluorene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Hexachlorobenzene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Hexachlorobutadiene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Hexachlorocyclopentadiene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Hexachloroethane | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Indeno(1,2,3-cd)pyrene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Isophorone | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Naphthalene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Nitrobenzene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| N-Nitrosodi-n-propylamine | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| N-Nitrosodiphenylamine | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Pentachlorophenol | ND | | 25 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Phenanthrene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Phenol | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Pyrene | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Pyridine | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 2-Methylphenol | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| 3 & 4-Methylphenol | ND | | 5 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Surr: 2,4,6-Tribromophenol | 70.7 | | % 10-123 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Surr: 2-Fluorobiphenyl | 68.0 | | % 23-116 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Surr: 2-Fluorophenol | 49.3 | | % 16-110 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Surr: Nitrobenzene-d5 | 66.0 | | % 21-114 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Surr: Phenol-d5 | 37.3 | | % 10-110 | 1 | 11/06/08 14:57 | GY | 4755638 |
| Surr: Terphenyl-d14 | 68.0 | | % 22-141 | 1 | 11/06/08 14:57 | GY | 4755638 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3510C | 10/30/2008 16:53 | LLL | 1.00 |

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* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-3 **Collected:** 10/24/2008 13:15 **SPL Sample ID:** 08101602-02

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANICS BY METHOD 8260B** | | | **MCL** | **SW8260B** | **Units: ug/L** | | |
| 1,1,1,2-Tetrachloroethane | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 1,1,1-Trichloroethane | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 1,1,2,2-Tetrachloroethane | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 1,1,2-Trichloroethane | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 1,1-Dichloroethane | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 1,1-Dichloroethene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 1,1-Dichloropropene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 1,2,3-Trichlorobenzene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 1,2,3-Trichloropropane | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 1,2,4-Trichlorobenzene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 1,2,4-Trimethylbenzene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 1,2-Dibromo-3-chloropropane | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 1,2-Dibromoethane | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 1,2-Dichlorobenzene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 1,2-Dichloroethane | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 1,2-Dichloropropane | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 1,3,5-Trimethylbenzene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 1,3-Dichlorobenzene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 1,3-Dichloropropane | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 1,4-Dichlorobenzene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 2,2-Dichloropropane | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 2-Butanone | ND | | 20 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 2-Chloroethyl vinyl ether | ND | | 10 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 2-Chlorotoluene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 2-Hexanone | ND | | 10 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 4-Chlorotoluene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 4-Isopropyltoluene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 4-Methyl-2-pentanone | ND | | 10 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Acetone | ND | | 100 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Acrylonitrile | ND | | 50 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Benzene | 20 | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Bromobenzene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Bromochloromethane | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Bromodichloromethane | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Bromoform | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Bromomethane | ND | | 10 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Carbon disulfide | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Carbon tetrachloride | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Chlorobenzene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |

**Qualifiers:**

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B/V - Analyte detected in the associated Method Blank
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J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

**HOUSTON LABORATORY**
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-3 **Collected:** 10/24/2008 13:15 **SPL Sample ID:** 08101602-02

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| Chloroethane | ND | | 10 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Chloroform | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Chloromethane | ND | | 10 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Dibromochloromethane | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Dibromomethane | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Dichlorodifluoromethane | ND | | 10 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Ethylbenzene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Hexachlorobutadiene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Isopropylbenzene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Methyl tert-butyl ether | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Methylene chloride | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Naphthalene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| n-Butylbenzene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| n-Propylbenzene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| sec-Butylbenzene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Styrene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| tert-Butylbenzene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Tetrachloroethene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Toluene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Trichloroethene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Trichlorofluoromethane | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Vinyl acetate | ND | | 10 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Vinyl chloride | ND | | 10 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| cis-1,2-Dichloroethene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| cis-1,3-Dichloropropene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| m,p-Xylene | 24 | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| o-Xylene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| trans-1,2-Dichloroethene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| trans-1,3-Dichloropropene | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| 1,2-Dichloroethene (total) | ND | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Xylenes,Total | 24 | | 5 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Surr: 1,2-Dichloroethane-d4 | 102 | | % 62-130 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Surr: 4-Bromofluorobenzene | 98.0 | | % 70-130 | 1 | 11/01/08 21:42 | LU_L | 4749658 |
| Surr: Toluene-d8 | 106 | | % 74-122 | 1 | 11/01/08 21:42 | LU_L | 4749658 |

**Qualifiers:**

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E - Estimated Value exceeds calibration curve
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>MCL - Result Over Maximum Contamination Limit(MCL)
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MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-4 **Collected:** 10/24/2008 14:45 **SPL Sample ID:** 08101602-03

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **DIESEL RANGE ORGANICS** | | | | **MCL** | **SW8015B** | **Units: mg/L** | |
| Diesel Range Organics (C10-C28) | 4.1 | | 0.2 | 2 | 11/07/08 9:08 | NW | 4757266 |
| Surr: n-Pentacosane | 133 | | % 20-150 | 2 | 11/07/08 9:08 | NW | 4757266 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3510C | 10/29/2008 18:43 | N_M | 1.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **GASOLINE RANGE ORGANICS** | | | | **MCL** | **SW8015B** | **Units: mg/L** | |
| Gasoline Range Organics | 0.38 | | 0.1 | 1 | 11/04/08 2:00 | WLV | 4749740 |
| Surr: 1,4-Difluorobenzene | 99.4 | | % 60-155 | 1 | 11/04/08 2:00 | WLV | 4749740 |
| Surr: 4-Bromofluorobenzene | 110 | | % 50-158 | 1 | 11/04/08 2:00 | WLV | 4749740 |
| **ION CHROMATOGRAPHY** | | | | **MCL** | **E300.0** | **Units: mg/L** | |
| Chloride | 14.2 | | 2 | 4 | 11/10/08 20:31 | TW | 4766028 |
| Fluoride | ND | | 2 | 4 | 11/10/08 20:31 | TW | 4766028 |
| Ortho-phosphate (As P) | ND | | 5 | 10 | 11/20/08 6:47 | TW | 4780773 |
| Sulfate | 678 | | 50 | 100 | 11/11/08 14:27 | TW | 4766445 |
| **MERCURY, TOTAL** | | | | **MCL** | **SW7470A** | **Units: mg/L** | |
| Mercury | ND | | 0.0002 | 1 | 11/06/08 14:16 | F_S | 4755689 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW7470A | 11/06/2008 13:18 | F_S | 1.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **METALS BY METHOD 6010B, TOTAL** | | | | **MCL** | **SW6010B** | **Units: mg/L** | |
| Boron | ND | | 0.1 | 1 | 10/31/08 13:30 | S_C | 4745443 |
| Calcium | 351 | | 0.1 | 1 | 10/31/08 13:30 | S_C | 4745443 |
| Iron | 1.16 | | 0.02 | 1 | 10/31/08 13:30 | S_C | 4745443 |
| Magnesium | 47.4 | | 0.1 | 1 | 10/31/08 13:30 | S_C | 4745443 |
| Manganese | 0.977 | | 0.005 | 1 | 10/31/08 13:30 | S_C | 4745443 |
| Sodium | 73.5 | | 0.5 | 1 | 10/31/08 13:30 | S_C | 4745443 |
| Tin | ND | | 0.05 | 1 | 10/31/08 13:30 | S_C | 4745443 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3010A | 10/30/2008 15:30 | BDG | 1.00 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-4 **Collected:** 10/24/2008 14:45 **SPL Sample ID:** 08101602-03

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **METALS BY METHOD 6020A, TOTAL** | | | **MCL** | **SW6020A** | **Units: mg/L** | | |
| Aluminum | 0.893 | | 0.01 | 1 | 10/31/08 17:00 | AL_H | 4746382 |
| Antimony | ND | | 0.005 | 1 | 10/31/08 17:00 | AL_H | 4746382 |
| Arsenic | ND | | 0.005 | 1 | 10/31/08 17:00 | AL_H | 4746382 |
| Barium | 0.0423 | | 0.005 | 1 | 10/31/08 17:00 | AL_H | 4746382 |
| Beryllium | ND | | 0.004 | 1 | 11/06/08 15:58 | AL_H | 4756055 |
| Cadmium | ND | | 0.005 | 1 | 10/31/08 17:00 | AL_H | 4746382 |
| Chromium | ND | | 0.005 | 1 | 10/31/08 17:00 | AL_H | 4746382 |
| Cobalt | ND | | 0.005 | 1 | 10/31/08 17:00 | AL_H | 4746382 |
| Copper | ND | | 0.005 | 1 | 10/31/08 17:00 | AL_H | 4746382 |
| Lead | ND | | 0.005 | 1 | 10/31/08 17:00 | AL_H | 4746382 |
| Manganese | 0.908 | | 0.005 | 1 | 10/31/08 17:00 | AL_H | 4746382 |
| Molybdenum | ND | | 0.01 | 1 | 11/07/08 0:53 | AL_H | 4757064 |
| Nickel | ND | | 0.005 | 1 | 10/31/08 17:00 | AL_H | 4746382 |
| Selenium | ND | | 0.005 | 1 | 10/31/08 17:00 | AL_H | 4746382 |
| Silver | ND | | 0.005 | 1 | 10/31/08 17:00 | AL_H | 4746382 |
| Thallium | ND | | 0.005 | 1 | 10/31/08 17:00 | AL_H | 4746382 |
| Tungsten | ND | | 0.01 | 1 | 11/08/08 22:22 | BDG | 4759523 |
| Vanadium | 0.00874 | | 0.005 | 1 | 11/07/08 0:53 | AL_H | 4757064 |
| Zinc | ND | | 0.01 | 1 | 11/10/08 0:22 | BDG | 4759799 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3010A | 10/30/2008 15:30 | BDG | 1.00 |

| **NITRATE NITROGEN (AS N), TOTAL** | | | **MCL** | **E353.2** | **Units: mg/L** | | |
|---|---|---|---|---|---|---|---|
| Nitrogen,Nitrate (As N) | ND | | 0.5 | 1 | 11/03/08 15:17 | TW | 4757602 |

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TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
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MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-4 **Collected:** 10/24/2008 14:45 **SPL Sample ID:** 08101602-03

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **SEMIVOLATILE ORGANICS BY METHOD 8270C** | | | **MCL** | **SW8270C** | **Units: ug/L** | | |
| 1,2,4-Trichlorobenzene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 1,2-Dichlorobenzene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 1,2-Diphenylhydrazine | ND | | 10 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 1,3-Dichlorobenzene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 1,4-Dichlorobenzene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 2,4,5-Trichlorophenol | ND | | 10 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 2,4,6-Trichlorophenol | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 2,4-Dichlorophenol | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 2,4-Dimethylphenol | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 2,4-Dinitrophenol | ND | | 25 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 2,4-Dinitrotoluene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 2,6-Dinitrotoluene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 2-Chloronaphthalene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 2-Chlorophenol | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 2-Methylnaphthalene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 2-Nitroaniline | ND | | 25 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 2-Nitrophenol | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 3,3'-Dichlorobenzidine | ND | | 10 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 3-Nitroaniline | ND | | 25 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 4,6-Dinitro-2-methylphenol | ND | | 25 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 4-Bromophenyl phenyl ether | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 4-Chloro-3-methylphenol | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 4-Chloroaniline | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 4-Chlorophenyl phenyl ether | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 4-Nitroaniline | ND | | 25 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 4-Nitrophenol | ND | | 25 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Acenaphthene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Acenaphthylene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Aniline | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Anthracene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Benz(a)anthracene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Benzo(a)pyrene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Benzo(b)fluoranthene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Benzo(g,h,i)perylene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Benzo(k)fluoranthene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Benzoic acid | ND | | 25 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Benzyl alcohol | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Bis(2-chloroethoxy)methane | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Bis(2-chloroethyl)ether | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-4 **Collected:** 10/24/2008 14:45 **SPL Sample ID:** 08101602-03

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| Bis(2-chloroisopropyl)ether | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Bis(2-ethylhexyl)phthalate | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Butyl benzyl phthalate | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Carbazole | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Chrysene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Dibenz(a,h)anthracene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Dibenzofuran | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Diethyl phthalate | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Dimethyl phthalate | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Di-n-butyl phthalate | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Di-n-octyl phthalate | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Fluoranthene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Fluorene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Hexachlorobenzene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Hexachlorobutadiene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Hexachlorocyclopentadiene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Hexachloroethane | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Indeno(1,2,3-cd)pyrene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Isophorone | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Naphthalene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Nitrobenzene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| N-Nitrosodi-n-propylamine | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| N-Nitrosodiphenylamine | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Pentachlorophenol | ND | | 25 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Phenanthrene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Phenol | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Pyrene | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Pyridine | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 2-Methylphenol | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| 3 & 4-Methylphenol | ND | | 5 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Surr: 2,4,6-Tribromophenol | 77.3 | | % 10-123 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Surr: 2-Fluorobiphenyl | 72.0 | | % 23-116 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Surr: 2-Fluorophenol | 50.7 | | % 16-110 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Surr: Nitrobenzene-d5 | 70.0 | | % 21-114 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Surr: Phenol-d5 | 36.0 | | % 10-110 | 1 | 11/06/08 15:27 | GY | 4755639 |
| Surr: Terphenyl-d14 | 72.0 | | % 22-141 | 1 | 11/06/08 15:27 | GY | 4755639 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3510C | 10/30/2008 16:53 | LLL | 1.00 |

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-4 **Collected:** 10/24/2008 14:45 **SPL Sample ID:** 08101602-03

**Site:** Aztec, NM

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANICS BY METHOD 8260B** | | | **MCL** | **SW8260B** | **Units: ug/L** | | |
| 1,1,1,2-Tetrachloroethane | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 1,1,1-Trichloroethane | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 1,1,2,2-Tetrachloroethane | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 1,1,2-Trichloroethane | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 1,1-Dichloroethane | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 1,1-Dichloroethene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 1,1-Dichloropropene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 1,2,3-Trichlorobenzene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 1,2,3-Trichloropropane | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 1,2,4-Trichlorobenzene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 1,2,4-Trimethylbenzene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 1,2-Dibromo-3-chloropropane | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 1,2-Dibromoethane | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 1,2-Dichlorobenzene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 1,2-Dichloroethane | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 1,2-Dichloropropane | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 1,3,5-Trimethylbenzene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 1,3-Dichlorobenzene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 1,3-Dichloropropane | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 1,4-Dichlorobenzene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 2,2-Dichloropropane | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 2-Butanone | ND | | 20 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 2-Chloroethyl vinyl ether | ND | | 10 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 2-Chlorotoluene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 2-Hexanone | ND | | 10 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 4-Chlorotoluene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 4-Isopropyltoluene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 4-Methyl-2-pentanone | ND | | 10 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Acetone | ND | | 100 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Acrylonitrile | ND | | 50 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Benzene | 24 | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Bromobenzene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Bromochloromethane | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Bromodichloromethane | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Bromoform | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Bromomethane | ND | | 10 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Carbon disulfide | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Carbon tetrachloride | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Chlorobenzene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-4 **Collected:** 10/24/2008 14:45 **SPL Sample ID:** 08101602-03

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| Chloroethane | ND | | 10 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Chloroform | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Chloromethane | ND | | 10 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Dibromochloromethane | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Dibromomethane | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Dichlorodifluoromethane | ND | | 10 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Ethylbenzene | 6 | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Hexachlorobutadiene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Isopropylbenzene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Methyl tert-butyl ether | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Methylene chloride | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Naphthalene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| n-Butylbenzene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| n-Propylbenzene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| sec-Butylbenzene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Styrene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| tert-Butylbenzene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Tetrachloroethene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Toluene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Trichloroethene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Trichlorofluoromethane | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Vinyl acetate | ND | | 10 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Vinyl chloride | ND | | 10 | 1 | 11/04/08 23:02 | JC | 4751431 |
| cis-1,2-Dichloroethene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| cis-1,3-Dichloropropene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| m,p-Xylene | 10 | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| o-Xylene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| trans-1,2-Dichloroethene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| trans-1,3-Dichloropropene | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| 1,2-Dichloroethene (total) | ND | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Xylenes,Total | 10 | | 5 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Surr: 1,2-Dichloroethane-d4 | 106 | | % 62-130 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Surr: 4-Bromofluorobenzene | 104 | | % 70-130 | 1 | 11/04/08 23:02 | JC | 4751431 |
| Surr: Toluene-d8 | 102 | | % 74-122 | 1 | 11/04/08 23:02 | JC | 4751431 |

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-1 **Collected:** 10/24/2008 15:50 **SPL Sample ID:** 08101602-04

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANICS BY METHOD 8260B** | | | **MCL** | **SW8260B** | **Units: ug/L** | | |
| 1,1,1,2-Tetrachloroethane | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| 1,1,1-Trichloroethane | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| 1,1,2,2-Tetrachloroethane | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| 1,1,2-Trichloroethane | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| 1,1-Dichloroethane | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| 1,1-Dichloroethene | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| 1,1-Dichloropropene | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| 1,2,3-Trichlorobenzene | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| 1,2,3-Trichloropropane | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| 1,2,4-Trichlorobenzene | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| 1,2,4-Trimethylbenzene | 590 | | 250 | 50 | 11/05/08 14:09 | JC | 4752970 |
| 1,2-Dibromo-3-chloropropane | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| 1,2-Dibromoethane | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| 1,2-Dichlorobenzene | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| 1,2-Dichloroethane | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| 1,2-Dichloropropane | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| 1,3,5-Trimethylbenzene | 320 | | 250 | 50 | 11/05/08 14:09 | JC | 4752970 |
| 1,3-Dichlorobenzene | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| 1,3-Dichloropropane | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| 1,4-Dichlorobenzene | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| 2,2-Dichloropropane | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| 2-Butanone | ND | | 1000 | 50 | 11/05/08 14:09 | JC | 4752970 |
| 2-Chloroethyl vinyl ether | ND | | 10 | 1 | 11/04/08 23:31 | JC | 4751432 |
| 2-Chlorotoluene | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| 2-Hexanone | ND | | 500 | 50 | 11/05/08 14:09 | JC | 4752970 |
| 4-Chlorotoluene | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| 4-Isopropyltoluene | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| 4-Methyl-2-pentanone | 130 | | 10 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Acetone | 940 | | 100 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Acrylonitrile | ND | | 50 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Benzene | 6000 | | 250 | 50 | 11/05/08 14:09 | JC | 4752970 |
| Bromobenzene | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Bromochloromethane | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Bromodichloromethane | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Bromoform | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Bromomethane | ND | | 10 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Carbon disulfide | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Carbon tetrachloride | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Chlorobenzene | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-1 **Collected:** 10/24/2008 15:50 **SPL Sample ID:** 08101602-04

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| Chloroethane | ND | | 10 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Chloroform | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Chloromethane | ND | | 10 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Dibromochloromethane | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Dibromomethane | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Dichlorodifluoromethane | ND | | 10 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Ethylbenzene | 400 | | 250 | 50 | 11/05/08 14:09 | JC | 4752970 |
| Hexachlorobutadiene | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Isopropylbenzene | 30 | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Methyl tert-butyl ether | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Methylene chloride | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Naphthalene | 44 | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| n-Butylbenzene | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| n-Propylbenzene | 26 | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| sec-Butylbenzene | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Styrene | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| tert-Butylbenzene | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Tetrachloroethene | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Toluene | 2100 | | 250 | 50 | 11/05/08 14:09 | JC | 4752970 |
| Trichloroethene | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Trichlorofluoromethane | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Vinyl acetate | ND | | 10 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Vinyl chloride | ND | | 10 | 1 | 11/04/08 23:31 | JC | 4751432 |
| cis-1,2-Dichloroethene | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| cis-1,3-Dichloropropene | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| m,p-Xylene | 7100 | | 250 | 50 | 11/05/08 14:09 | JC | 4752970 |
| o-Xylene | 1900 | | 250 | 50 | 11/05/08 14:09 | JC | 4752970 |
| trans-1,2-Dichloroethene | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| trans-1,3-Dichloropropene | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| 1,2-Dichloroethene (total) | ND | | 5 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Xylenes,Total | 9000 | | 250 | 50 | 11/05/08 14:09 | JC | 4752970 |
| Surr: 1,2-Dichloroethane-d4 | 106 | | % 62-130 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Surr: 1,2-Dichloroethane-d4 | 104 | | % 62-130 | 50 | 11/05/08 14:09 | JC | 4752970 |
| Surr: 4-Bromofluorobenzene | 98.0 | | % 70-130 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Surr: 4-Bromofluorobenzene | 108 | | % 70-130 | 50 | 11/05/08 14:09 | JC | 4752970 |
| Surr: Toluene-d8 | 112 | | % 74-122 | 1 | 11/04/08 23:31 | JC | 4751432 |
| Surr: Toluene-d8 | 108 | | % 74-122 | 50 | 11/05/08 14:09 | JC | 4752970 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** Duplicate **Collected:** 10/24/2008 15:00 **SPL Sample ID:** 08101602-05

**Site:** Aztec, NM

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANICS BY METHOD 8260B** | | | **MCL** | **SW8260B** | **Units: ug/L** | | |
| 1,1,1,2-Tetrachloroethane | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| 1,1,1-Trichloroethane | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| 1,1,2,2-Tetrachloroethane | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| 1,1,2-Trichloroethane | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| 1,1-Dichloroethane | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| 1,1-Dichloroethene | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| 1,1-Dichloropropene | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| 1,2,3-Trichlorobenzene | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| 1,2,3-Trichloropropane | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| 1,2,4-Trichlorobenzene | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| 1,2,4-Trimethylbenzene | 580 | | 250 | 50 | 11/05/08 14:38 | JC | 4752971 |
| 1,2-Dibromo-3-chloropropane | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| 1,2-Dibromoethane | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| 1,2-Dichlorobenzene | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| 1,2-Dichloroethane | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| 1,2-Dichloropropane | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| 1,3,5-Trimethylbenzene | 320 | | 250 | 50 | 11/05/08 14:38 | JC | 4752971 |
| 1,3-Dichlorobenzene | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| 1,3-Dichloropropane | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| 1,4-Dichlorobenzene | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| 2,2-Dichloropropane | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| 2-Butanone | ND | | 1000 | 50 | 11/05/08 14:38 | JC | 4752971 |
| 2-Chloroethyl vinyl ether | ND | | 10 | 1 | 11/05/08 0:00 | JC | 4751433 |
| 2-Chlorotoluene | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| 2-Hexanone | ND | | 500 | 50 | 11/05/08 14:38 | JC | 4752971 |
| 4-Chlorotoluene | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| 4-Isopropyltoluene | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| 4-Methyl-2-pentanone | 130 | | 10 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Acetone | 930 | | 100 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Acrylonitrile | ND | | 50 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Benzene | 5900 | | 250 | 50 | 11/05/08 14:38 | JC | 4752971 |
| Bromobenzene | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Bromochloromethane | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Bromodichloromethane | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Bromoform | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Bromomethane | ND | | 10 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Carbon disulfide | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Carbon tetrachloride | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Chlorobenzene | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** Duplicate **Collected:** 10/24/2008 15:00 **SPL Sample ID:** 08101602-05

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| Chloroethane | ND | | 10 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Chloroform | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Chloromethane | ND | | 10 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Dibromochloromethane | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Dibromomethane | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Dichlorodifluoromethane | ND | | 10 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Ethylbenzene | 390 | | 250 | 50 | 11/05/08 14:38 | JC | 4752971 |
| Hexachlorobutadiene | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Isopropylbenzene | 28 | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Methyl tert-butyl ether | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Methylene chloride | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Naphthalene | 44 | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| n-Butylbenzene | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| n-Propylbenzene | 27 | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| sec-Butylbenzene | 6 | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Styrene | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| tert-Butylbenzene | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Tetrachloroethene | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Toluene | 2000 | | 250 | 50 | 11/05/08 14:38 | JC | 4752971 |
| Trichloroethene | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Trichlorofluoromethane | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Vinyl acetate | ND | | 10 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Vinyl chloride | ND | | 10 | 1 | 11/05/08 0:00 | JC | 4751433 |
| cis-1,2-Dichloroethene | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| cis-1,3-Dichloropropene | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| m,p-Xylene | 7000 | | 250 | 50 | 11/05/08 14:38 | JC | 4752971 |
| o-Xylene | 1900 | | 250 | 50 | 11/05/08 14:38 | JC | 4752971 |
| trans-1,2-Dichloroethene | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| trans-1,3-Dichloropropene | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| 1,2-Dichloroethene (total) | ND | | 5 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Xylenes,Total | 8900 | | 250 | 50 | 11/05/08 14:38 | JC | 4752971 |
| Surr: 1,2-Dichloroethane-d4 | 104 | % | 62-130 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Surr: 1,2-Dichloroethane-d4 | 104 | % | 62-130 | 50 | 11/05/08 14:38 | JC | 4752971 |
| Surr: 4-Bromofluorobenzene | 96.0 | % | 70-130 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Surr: 4-Bromofluorobenzene | 108 | % | 70-130 | 50 | 11/05/08 14:38 | JC | 4752971 |
| Surr: Toluene-d8 | 110 | % | 74-122 | 1 | 11/05/08 0:00 | JC | 4751433 |
| Surr: Toluene-d8 | 104 | % | 74-122 | 50 | 11/05/08 14:38 | JC | 4752971 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** (Trip Blank) **Collected:** 10/27/2008 14:30 **SPL Sample ID:** 08101602-06

**Site:** Aztec, NM

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANICS BY METHOD 8260B** | | | **MCL** | **SW8260B** | **Units: ug/L** | | |
| 1,1,1,2-Tetrachloroethane | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 1,1,1-Trichloroethane | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 1,1,2,2-Tetrachloroethane | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 1,1,2-Trichloroethane | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 1,1-Dichloroethane | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 1,1-Dichloroethene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 1,1-Dichloropropene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 1,2,3-Trichlorobenzene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 1,2,3-Trichloropropane | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 1,2,4-Trichlorobenzene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 1,2,4-Trimethylbenzene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 1,2-Dibromo-3-chloropropane | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 1,2-Dibromoethane | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 1,2-Dichlorobenzene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 1,2-Dichloroethane | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 1,2-Dichloropropane | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 1,3,5-Trimethylbenzene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 1,3-Dichlorobenzene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 1,3-Dichloropropane | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 1,4-Dichlorobenzene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 2,2-Dichloropropane | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 2-Butanone | ND | | 20 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 2-Chloroethyl vinyl ether | ND | | 10 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 2-Chlorotoluene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 2-Hexanone | ND | | 10 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 4-Chlorotoluene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 4-Isopropyltoluene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 4-Methyl-2-pentanone | ND | | 10 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Acetone | ND | | 100 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Acrylonitrile | ND | | 50 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Benzene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Bromobenzene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Bromochloromethane | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Bromodichloromethane | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Bromoform | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Bromomethane | ND | | 10 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Carbon disulfide | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Carbon tetrachloride | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Chlorobenzene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** (Trip Blank) **Collected:** 10/27/2008 14:30 **SPL Sample ID:** 08101602-06

**Site: Aztec, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| Chloroethane | ND | | 10 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Chloroform | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Chloromethane | ND | | 10 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Dibromochloromethane | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Dibromomethane | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Dichlorodifluoromethane | ND | | 10 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Ethylbenzene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Hexachlorobutadiene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Isopropylbenzene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Methyl tert-butyl ether | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Methylene chloride | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Naphthalene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| n-Butylbenzene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| n-Propylbenzene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| sec-Butylbenzene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Styrene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| tert-Butylbenzene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Tetrachloroethene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Toluene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Trichloroethene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Trichlorofluoromethane | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Vinyl acetate | ND | | 10 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Vinyl chloride | ND | | 10 | 1 | 11/04/08 22:32 | JC | 4751430 |
| cis-1,2-Dichloroethene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| cis-1,3-Dichloropropene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| m,p-Xylene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| o-Xylene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| trans-1,2-Dichloroethene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| trans-1,3-Dichloropropene | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| 1,2-Dichloroethene (total) | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Xylenes,Total | ND | | 5 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Surr: 1,2-Dichloroethane-d4 | 104 | | % 62-130 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Surr: 4-Bromofluorobenzene | 108 | | % 70-130 | 1 | 11/04/08 22:32 | JC | 4751430 |
| Surr: Toluene-d8 | 104 | | % 74-122 | 1 | 11/04/08 22:32 | JC | 4751430 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

# *Quality Control Documentation*

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
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(713) 660-0901

# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Diesel Range Organics **WorkOrder:** 08101602
**Method:** SW8015B **Lab Batch ID:** 84920

**Method Blank**

RunID: HP_Z_081106A-4757246 Units: mg/L
Analysis Date: 11/06/2008 14:26 Analyst: NW
Preparation Date: 10/29/2008 18:43 Prep By: N_M Method: SW3510C

| Analyte | Result | Rep Limit |
|---|---|---|
| Diesel Range Organics (C10-C28) | ND | 0.10 |
| Surr: n-Pentacosane | 57.8 | 20-150 |

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08101602-01D | MW-2 |
| 08101602-02D | MW-3 |
| 08101602-03D | MW-4 |

**Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)**

RunID: HP_Z_081106A-4757247 Units: mg/L
Analysis Date: 11/06/2008 14:48 Analyst: NW
Preparation Date: 10/29/2008 18:43 Prep By: N_M Method: SW3510C

| Analyte | LCS Spike Added | LCS Result | LCS Percent Recovery | LCSD Spike Added | LCSD Result | LCSD Percent Recovery | RPD | RPD Limit | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (C10-C28) | 2.00 | 1.90 | 94.9 | 2.00 | 2.07 | 104 | 8.8 | 20 | 21 | 130 |
| Surr: n-Pentacosane | 0.0500 | 0.0443 | 88.6 | 0.0500 | 0.0478 | 95.6 | 7.6 | 30 | 20 | 150 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Gasoline Range Organics
**Method:** SW8015B
**WorkOrder:** 08101602
**Lab Batch ID:** R255738

### Method Blank

RunID: HP_P_081102A-4747577 Units: mg/L
Analysis Date: 11/02/2008 4:16 Analyst: WLV
Preparation Date: 11/02/2008 4:16 Prep By: Method: SW5030B

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08101602-01B | MW-2 |
| 08101602-02B | MW-3 |

| Analyte | Result | Rep Limit |
|---|---|---|
| Gasoline Range Organics | ND | 0.10 |
| Surr: 1,4-Difluorobenzene | 89.3 | 60-155 |
| Surr: 4-Bromofluorobenzene | 90.4 | 50-158 |

### Laboratory Control Sample (LCS)

RunID: HP_P_081102A-4747576 Units: mg/L
Analysis Date: 11/02/2008 3:19 Analyst: WLV
Preparation Date: 11/02/2008 3:19 Prep By: Method: SW5030B

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Gasoline Range Organics | 1.00 | 0.812 | 81.2 | 42 | 136 |
| Surr: 1,4-Difluorobenzene | 0.100 | 0.0932 | 93.2 | 60 | 155 |
| Surr: 4-Bromofluorobenzene | 0.100 | 0.104 | 104 | 50 | 158 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08101530-01
RunID: HP_P_081102A-4747588 Units: mg/L
Analysis Date: 11/02/2008 9:29 Analyst: WLV

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics | ND | 1 | 0.672 | 67.2 | 1 | 0.470 | 47.0 | 35.4 | 36 | 22 | 174 |
| Surr: 1,4-Difluorobenzene | ND | 0.1 | 0.0942 | 94.2 | 0.1 | 0.0927 | 92.7 | 1.61 | 30 | 60 | 155 |
| Surr: 4-Bromofluorobenzene | ND | 0.1 | 0.0907 | 90.7 | 0.1 | 0.0918 | 91.8 | 1.21 | 30 | 50 | 158 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Gasoline Range Organics
**Method:** SW8015B
**WorkOrder:** 08101602
**Lab Batch ID:** R255843

### Method Blank

RunID: HP_P_081103A-4749727 Units: mg/L
Analysis Date: 11/03/2008 17:55 Analyst: WLV
Preparation Date: 11/03/2008 17:55 Prep By: Method: SW5030B

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08101602-03B | MW-4 |

| Analyte | Result | Rep Limit |
|---|---|---|
| Gasoline Range Organics | ND | 0.10 |
| Surr: 1,4-Difluorobenzene | 90.8 | 60-155 |
| Surr: 4-Bromofluorobenzene | 103.7 | 50-158 |

### Laboratory Control Sample (LCS)

RunID: HP_P_081103A-4749736 Units: mg/L
Analysis Date: 11/03/2008 22:40 Analyst: WLV
Preparation Date: 11/03/2008 22:40 Prep By: Method: SW5030B

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Gasoline Range Organics | 1.00 | 1.05 | 105 | 42 | 136 |
| Surr: 1,4-Difluorobenzene | 0.100 | 0.0943 | 94.3 | 60 | 155 |
| Surr: 4-Bromofluorobenzene | 0.100 | 0.106 | 106 | 50 | 158 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08101530-02
RunID: HP_P_081103A-4749733 Units: mg/L
Analysis Date: 11/03/2008 21:15 Analyst: WLV

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics | 1.07 | 1 | 1.17 | 10.2 * | 1 | 1.17 | 10.6 * | 0.359 | 36 | 22 | 174 |
| Surr: 1,4-Difluorobenzene | ND | 0.1 | 0.0993 | 99.3 | 0.1 | 0.104 | 104 | 4.82 | 30 | 60 | 155 |
| Surr: 4-Bromofluorobenzene | ND | 0.1 | 0.112 | 112 | 0.1 | 0.112 | 112 | 0.268 | 30 | 50 | 158 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits



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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Metals by Method 6010B, Total **WorkOrder:** 08101602
**Method:** SW6010B **Lab Batch ID:** 84958

### Method Blank

RunID: TJA_081031A-4745434 Units: mg/L
Analysis Date: 10/31/2008 12:49 Analyst: S_C
Preparation Date: 10/30/2008 15:30 Prep By: BDG Method: SW3010A

| Analyte | Result | Rep Limit |
|---|---|---|
| Boron | ND | 0.1 |
| Calcium | ND | 0.1 |
| Iron | ND | 0.02 |
| Magnesium | ND | 0.1 |
| Manganese | ND | 0.005 |
| Sodium | ND | 0.5 |
| Tin | ND | 0.05 |

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08101602-01F | MW-2 |
| 08101602-02F | MW-3 |
| 08101602-03F | MW-4 |

### Laboratory Control Sample (LCS)

RunID: TJA_081031A-4745435 Units: mg/L
Analysis Date: 10/31/2008 12:54 Analyst: S_C
Preparation Date: 10/30/2008 15:30 Prep By: BDG Method: SW3010A

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Boron | 1.000 | 0.9278 | 92.79 | 80 | 120 |
| Calcium | 1.000 | 1.149 | 114.9 | 80 | 120 |
| Iron | 1.000 | 1.125 | 112.5 | 80 | 120 |
| Magnesium | 1.000 | 1.122 | 112.2 | 80 | 120 |
| Manganese | 1.000 | 1.121 | 112.1 | 80 | 120 |
| Sodium | 1.000 | 1.008 | 100.8 | 80 | 120 |
| Tin | 1.000 | 1.022 | 102.2 | 80 | 120 |

### Post Digestion Spike (PDS) / Post Digestion Spike Duplicate (PDSD)

Sample Spiked: 08101602-02
RunID: TJA_081031A-4745440 Units: mg/L
Analysis Date: 10/31/2008 13:17 Analyst: S_C

| Analyte | Sample Result | PDS Spike Added | PDS Result | PDS % Recovery | PDSD Spike Added | PDSD Result | PDSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Iron | 0.542 | 1 | 1.563 | 102.1 | 1 | 1.466 | 92.47 | 6.375 | 20 | 75 | 125 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits



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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Metals by Method 6010B, Total **WorkOrder:** 08101602
**Method:** SW6010B **Lab Batch ID:** 84958

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: 08101602-02
RunID: TJA_081031A-4745437 Units: mg/L
Analysis Date: 10/31/2008 13:03 Analyst: S_C
Preparation Date: 10/30/2008 15:30 Prep By: BDG Method: SW3010A

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Boron | ND | 1 | 0.9990 | 92.70 | 1 | 1.029 | 95.75 | 3.004 | 20 | 75 | 125 |
| Calcium | 406.3 | 1 | 403.5 | N/C | 1 | 447.5 | N/C | N/C | 20 | 75 | 125 |
| Iron | 0.5418 | 1 | 1.504 | 96.23 | 1 | 2.372 | 183.0 * | 44.78 * | 20 | 75 | 125 |
| Magnesium | 45.32 | 1 | 46.01 | N/C | 1 | 48.67 | N/C | N/C | 20 | 75 | 125 |
| Manganese | 1.428 | 1 | 2.398 | 96.93 | 1 | 2.557 | 112.8 | 6.415 | 20 | 75 | 125 |
| Sodium | 81.33 | 1 | 81.57 | N/C | 1 | 83.01 | N/C | N/C | 20 | 75 | 125 |
| Tin | ND | 1 | 1.006 | 100.6 | 1 | 1.071 | 107.1 | 6.278 | 20 | 75 | 125 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits



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## Quality Control Report

# Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Metals by Method 6020A, Total
**Method:** SW6020A
**WorkOrder:** 08101602
**Lab Batch ID:** 84958a-I

### Method Blank

RunID: ICPMS_081108A-4759514 Units: mg/L
Analysis Date: 11/08/2008 21:38 Analyst: BDG
Preparation Date: 10/30/2008 15:30 Prep By: BDG Method: SW3010A

| Analyte | Result | Rep Limit |
|---|---|---|
| Tungsten | ND | 0.01 |

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08101602-01F | MW-2 |
| 08101602-02F | MW-3 |
| 08101602-03F | MW-4 |

### Laboratory Control Sample (LCS)

RunID: ICPMS_081108A-4759515 Units: mg/L
Analysis Date: 11/08/2008 21:43 Analyst: BDG
Preparation Date: 10/30/2008 15:30 Prep By: BDG Method: SW3010A

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Tungsten | 0.1000 | 0.09693 | 96.93 | 80 | 120 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08101602-02
RunID: ICPMS_081108A-4759517 Units: mg/L
Analysis Date: 11/08/2008 21:53 Analyst: BDG
Preparation Date: 10/30/2008 15:30 Prep By: BDG Method: SW3010A

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Tungsten | 0.01333 | 0.1 | 0.1134 | 100.1 | 0.1 | 0.1124 | 99.07 | 0.8857 | 20 | 75 | 125 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits



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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Metals by Method 6020A, Total
**Method:** SW6020A
**WorkOrder:** 08101602
**Lab Batch ID:** 84958B-I

### Method Blank

RunID: ICPMS2_081105A-4753283 Units: mg/L
Analysis Date: 11/05/2008 14:06 Analyst: AL_H
Preparation Date: 10/30/2008 15:30 Prep By: BDG Method: SW3010A

| Analyte | Result | Rep Limit |
|---|---|---|
| Beryllium | ND | 0.004 |

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08101602-01F | MW-2 |
| 08101602-02F | MW-3 |
| 08101602-03F | MW-4 |

### Laboratory Control Sample (LCS)

RunID: ICPMS2_081105A-4753284 Units: mg/L
Analysis Date: 11/05/2008 14:13 Analyst: AL_H
Preparation Date: 10/30/2008 15:30 Prep By: BDG Method: SW3010A

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Beryllium | 0.1000 | 0.1036 | 103.6 | 80 | 120 |

### Post Digestion Spike (PDS) / Post Digestion Spike Duplicate (PDSD)

Sample Spiked: 08101602-02
RunID: ICPMS2_081105A-4754469 Units: mg/L
Analysis Date: 11/05/2008 18:28 Analyst: AL_H

| Analyte | Sample Result | PDS Spike Added | PDS Result | PDS % Recovery | PDSD Spike Added | PDSD Result | PDSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Beryllium | ND | 0.5 | 0.7178 | 143.6 * | 0.5 | 0.7107 | 142.1 * | 0.9940 | 20 | 75 | 125 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08101602-02
RunID: ICPMS2_081105A-4754466 Units: mg/L
Analysis Date: 11/05/2008 18:08 Analyst: AL_H
Preparation Date: 10/30/2008 15:30 Prep By: BDG Method: SW3010A

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Beryllium | ND | 0.1 | 0.1348 | 134.8 * | 0.1 | 0.1361 | 136.1 * | 0.9598 | 20 | 75 | 125 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits



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## Quality Control Report

**Conoco Phillips**
**COP Johnson Fed4**

| | | | |
|---|---|---|---|
| **Analysis:** | **Metals by Method 6020A, Total** | **WorkOrder:** | **08101602** |
| **Method:** | **SW6020A** | **Lab Batch ID:** | **84958B-I** |

**Qualifiers:**

- ND/U - Not Detected at the Reporting Limit
- B/V - Analyte detected in the associated Method Blank
- J - Estimated value between MDL and PQL
- E - Estimated Value exceeds calibration curve
- MI - Matrix Interference
- D - Recovery Unreportable due to Dilution
- * - Recovery Outside Advisable QC Limits
- N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
- TNTC - Too numerous to count



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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Metals by Method 6020A, Total **WorkOrder:** 08101602
**Method:** SW6020A **Lab Batch ID:** 84958-I

### Method Blank

RunID: ICPMS2_081031A-4745588 Units: mg/L
Analysis Date: 10/31/2008 14:46 Analyst: AL_H
Preparation Date: 10/30/2008 15:30 Prep By: BDG Method: SW3010A

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08101602-01F | MW-2 |
| 08101602-02F | MW-3 |
| 08101602-03F | MW-4 |

| Analyte | Result | Rep Limit |
|---|---|---|
| Aluminum | ND | 0.01 |
| Antimony | ND | 0.005 |
| Arsenic | ND | 0.005 |
| Barium | ND | 0.005 |
| Cadmium | ND | 0.005 |
| Chromium | ND | 0.005 |
| Cobalt | ND | 0.005 |
| Copper | ND | 0.005 |
| Lead | ND | 0.005 |
| Manganese | ND | 0.005 |
| Nickel | ND | 0.005 |
| Selenium | ND | 0.005 |
| Silver | ND | 0.005 |
| Thallium | ND | 0.005 |

### Laboratory Control Sample (LCS)

RunID: ICPMS2_081031A-4745595 Units: mg/L
Analysis Date: 10/31/2008 15:06 Analyst: AL_H
Preparation Date: 10/30/2008 15:30 Prep By: BDG Method: SW3010A

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Aluminum | 0.1000 | 0.1092 | 109.2 | 80 | 120 |
| Antimony | 0.1000 | 0.1009 | 100.9 | 80 | 120 |
| Arsenic | 0.1000 | 0.09881 | 98.81 | 80 | 120 |
| Barium | 0.1000 | 0.09559 | 95.59 | 80 | 120 |
| Cadmium | 0.1000 | 0.1016 | 101.6 | 80 | 120 |
| Chromium | 0.1000 | 0.09065 | 90.65 | 80 | 120 |
| Cobalt | 0.1000 | 0.09781 | 97.81 | 80 | 120 |
| Copper | 0.1000 | 0.1026 | 102.6 | 80 | 120 |
| Lead | 0.1000 | 0.08910 | 89.10 | 80 | 120 |
| Manganese | 0.1000 | 0.09279 | 92.79 | 80 | 120 |
| Nickel | 0.1000 | 0.1025 | 102.5 | 80 | 120 |
| Selenium | 0.1000 | 0.1006 | 100.6 | 80 | 120 |
| Silver | 0.1000 | 0.1157 | 115.7 | 80 | 120 |
| Thallium | 0.1000 | 0.1061 | 106.1 | 80 | 120 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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## Quality Control Report

**Conoco Phillips**
**COP Johnson Fed4**

**Analysis:** Metals by Method 6020A, Total
**Method:** SW6020A
**WorkOrder:** 08101602
**Lab Batch ID:** 84958-I

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: 08101602-02
RunID: ICPMS2_081031A-4745597 Units: mg/L
Analysis Date: 10/31/2008 15:12 Analyst: AL_H
Preparation Date: 10/30/2008 15:30 Prep By: BDG Method: SW3010A

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 0.3808 | 0.1 | 0.4951 | 114.3 | 0.1 | 0.4961 | 115.3 | 0.2018 | 20 | 75 | 125 |
| Antimony | ND | 0.1 | 0.09884 | 98.84 | 0.1 | 0.09900 | 99.00 | 0.1617 | 20 | 75 | 125 |
| Arsenic | ND | 0.1 | 0.1013 | 97.62 | 0.1 | 0.1022 | 98.52 | 0.8845 | 20 | 75 | 125 |
| Barium | 0.05154 | 0.1 | 0.1599 | 108.4 | 0.1 | 0.1574 | 105.9 | 1.576 | 20 | 75 | 125 |
| Cadmium | ND | 0.1 | 0.09856 | 98.56 | 0.1 | 0.09554 | 95.54 | 3.112 | 20 | 75 | 125 |
| Chromium | ND | 0.1 | 0.09150 | 91.50 | 0.1 | 0.09256 | 92.56 | 1.152 | 20 | 75 | 125 |
| Cobalt | ND | 0.1 | 0.1002 | 96.24 | 0.1 | 0.09874 | 94.78 | 1.468 | 20 | 75 | 125 |
| Copper | ND | 0.1 | 0.09867 | 98.67 | 0.1 | 0.09831 | 98.31 | 0.3655 | 20 | 75 | 125 |
| Lead | ND | 0.1 | 0.09164 | 91.64 | 0.1 | 0.09132 | 91.32 | 0.3498 | 20 | 75 | 125 |
| Manganese | 1.300 | 0.1 | 1.474 | N/C | 0.1 | 1.474 | N/C | N/C | 20 | 75 | 125 |
| Molybdenum | 0.01173 | 0.1 | 0.1065 | 94.77 | 0.1 | 0.1076 | 95.87 | 1.028 | 20 | 75 | 125 |
| Nickel | ND | 0.1 | 0.09878 | 95.57 | 0.1 | 0.09986 | 96.65 | 1.087 | 20 | 75 | 125 |
| Selenium | ND | 0.1 | 0.09221 | 92.21 | 0.1 | 0.09133 | 91.33 | 0.9589 | 20 | 75 | 125 |
| Silver | ND | 0.1 | 0.1145 | 114.5 | 0.1 | 0.1127 | 112.7 | 1.585 | 20 | 75 | 125 |
| Thallium | ND | 0.1 | 0.1009 | 100.9 | 0.1 | 0.1015 | 101.5 | 0.5929 | 20 | 75 | 125 |
| Vanadium | ND | 0.1 | 0.08769 | 84.20 | 0.1 | 0.08875 | 85.26 | 1.202 | 20 | 75 | 125 |
| Zinc | ND | 0.1 | 0.09989 | 95.60 | 0.1 | 0.1039 | 99.61 | 3.935 | 20 | 75 | 125 |

**Qualifiers:**
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Metals by Method 6020A, Total
**Method:** SW6020A
**WorkOrder:** 08101602
**Lab Batch ID:** 84958-I

### Method Blank

RunID: ICPMS_081106A-4757055 Units: mg/L
Analysis Date: 11/07/2008 0:09 Analyst: AL_H
Preparation Date: 10/30/2008 15:30 Prep By: BDG Method: SW3010A

| Analyte | Result | Rep Limit |
|---|---|---|
| Molybdenum | ND | 0.01 |
| Vanadium | ND | 0.005 |

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08101602-01F | MW-2 |
| 08101602-02F | MW-3 |
| 08101602-03F | MW-4 |

### Laboratory Control Sample (LCS)

RunID: ICPMS_081106A-4757056 Units: mg/L
Analysis Date: 11/07/2008 0:14 Analyst: AL_H
Preparation Date: 10/30/2008 15:30 Prep By: BDG Method: SW3010A

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Molybdenum | 0.1000 | 0.1029 | 102.9 | 80 | 120 |
| Vanadium | 0.1000 | 0.08966 | 89.66 | 80 | 120 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08101602-02
RunID: ICPMS_081106A-4757058 Units: mg/L
Analysis Date: 11/07/2008 0:24 Analyst: AL_H
Preparation Date: 10/30/2008 15:30 Prep By: BDG Method: SW3010A

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 0.3033 | 0.1 | 0.3834 | 80.10 | 0.1 | 0.3831 | 79.80 | 0.07828 | 20 | 75 | 125 |
| Antimony | ND | 0.1 | 0.08732 | 87.32 | 0.1 | 0.08960 | 89.60 | 2.577 | 20 | 75 | 125 |
| Arsenic | ND | 0.1 | 0.08985 | 89.85 | 0.1 | 0.09259 | 92.59 | 3.004 | 20 | 75 | 125 |
| Barium | 0.05374 | 0.1 | 0.1614 | 107.7 | 0.1 | 0.1626 | 108.9 | 0.7407 | 20 | 75 | 125 |
| Cadmium | ND | 0.1 | 0.08703 | 87.03 | 0.1 | 0.08791 | 87.91 | 1.006 | 20 | 75 | 125 |
| Chromium | ND | 0.1 | 0.09611 | 93.10 | 0.1 | 0.09669 | 93.68 | 0.6017 | 20 | 75 | 125 |
| Cobalt | ND | 0.1 | 0.09565 | 91.93 | 0.1 | 0.09768 | 93.96 | 2.100 | 20 | 75 | 125 |
| Copper | ND | 0.1 | 0.09903 | 94.09 | 0.1 | 0.1001 | 95.16 | 1.075 | 20 | 75 | 125 |
| Lead | ND | 0.1 | 0.09956 | 99.56 | 0.1 | 0.1003 | 100.3 | 0.7405 | 20 | 75 | 125 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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**Quality Control Report**

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Metals by Method 6020A, Total **WorkOrder:** 08101602
**Method:** SW6020A **Lab Batch ID:** 84958-I

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: 08101602-02
RunID: ICPMS_081106A-4757058 Units: mg/L
Analysis Date: 11/07/2008 0:24 Analyst: AL_H
Preparation Date: 10/30/2008 15:30 Prep By: BDG Method: SW3010A

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Manganese | 1.279 | 0.1 | 1.355 | N/C | 0.1 | 1.386 | N/C | N/C | 20 | 75 | 125 |
| Molybdenum | 0.01589 | 0.1 | 0.1187 | 102.8 | 0.1 | 0.1209 | 105.0 | 1.836 | 20 | 75 | 125 |
| Nickel | 0.008368 | 0.1 | 0.09667 | 88.30 | 0.1 | 0.09742 | 89.05 | 0.7728 | 20 | 75 | 125 |
| Selenium | ND | 0.1 | 0.07613 | 76.13 | 0.1 | 0.07838 | 78.38 | 2.912 | 20 | 75 | 125 |
| Silver | ND | 0.1 | 0.1066 | 106.6 | 0.1 | 0.1071 | 107.1 | 0.4679 | 20 | 75 | 125 |
| Thallium | ND | 0.1 | 0.1100 | 105.9 | 0.1 | 0.1143 | 110.2 | 3.834 | 20 | 75 | 125 |
| Vanadium | 0.008074 | 0.1 | 0.09318 | 85.11 | 0.1 | 0.09098 | 82.91 | 2.389 | 20 | 75 | 125 |
| Zinc | ND | 0.1 | 0.08281 | 75.45 | 0.1 | 0.08502 | 77.66 | 2.634 | 20 | 75 | 125 |

**Qualifiers:**
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits



QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Metals by Method 6020A, Total
**Method:** SW6020A
**WorkOrder:** 08101602
**Lab Batch ID:** 84958-I

### Method Blank

RunID: ICPMS2_081109A-4759790 Units: mg/L
Analysis Date: 11/09/2008 23:24 Analyst: BDG
Preparation Date: 10/30/2008 15:30 Prep By: BDG Method: SW3010A

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08101602-01F | MW-2 |
| 08101602-02F | MW-3 |
| 08101602-03F | MW-4 |

| Analyte | Result | Rep Limit |
|---|---|---|
| Zinc | ND | 0.01 |

### Laboratory Control Sample (LCS)

RunID: ICPMS2_081109A-4759791 Units: mg/L
Analysis Date: 11/09/2008 23:30 Analyst: BDG
Preparation Date: 10/30/2008 15:30 Prep By: BDG Method: SW3010A

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Zinc | 0.1000 | 0.1003 | 100.3 | 80 | 120 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08101602-02
RunID: ICPMS2_081109A-4759793 Units: mg/L
Analysis Date: 11/09/2008 23:43 Analyst: BDG
Preparation Date: 10/30/2008 15:30 Prep By: BDG Method: SW3010A

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 0.3337 | 0.1 | 0.4432 | 109.5 | 0.1 | 0.4258 | 92.10 | 4.005 | 20 | 75 | 125 |
| Antimony | ND | 0.1 | 0.1123 | 112.3 | 0.1 | 0.1107 | 110.7 | 1.435 | 20 | 75 | 125 |
| Arsenic | ND | 0.1 | 0.09605 | 92.79 | 0.1 | 0.09441 | 91.15 | 1.722 | 20 | 75 | 125 |
| Barium | 0.05539 | 0.1 | 0.1639 | 108.5 | 0.1 | 0.1599 | 104.5 | 2.471 | 20 | 75 | 125 |
| Cadmium | ND | 0.1 | 0.09789 | 97.89 | 0.1 | 0.09837 | 98.37 | 0.4891 | 20 | 75 | 125 |
| Chromium | ND | 0.1 | 0.1000 | 100.0 | 0.1 | 0.09837 | 98.37 | 1.643 | 20 | 75 | 125 |
| Cobalt | ND | 0.1 | 0.09706 | 93.11 | 0.1 | 0.09501 | 91.06 | 2.135 | 20 | 75 | 125 |
| Copper | ND | 0.1 | 0.09848 | 95.12 | 0.1 | 0.09542 | 92.06 | 3.156 | 20 | 75 | 125 |
| Lead | ND | 0.1 | 0.09471 | 94.71 | 0.1 | 0.09427 | 94.27 | 0.4657 | 20 | 75 | 125 |
| Manganese | 1.331 | 0.1 | 1.404 | N/C | 0.1 | 1.383 | N/C | N/C | 20 | 75 | 125 |
| Molybdenum | 0.01468 | 0.1 | 0.1119 | 97.22 | 0.1 | 0.1093 | 94.62 | 2.351 | 20 | 75 | 125 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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## Quality Control Report

### Conoco Phillips
**COP Johnson Fed4**

**Analysis:** Metals by Method 6020A, Total
**Method:** SW6020A
**WorkOrder:** 08101602
**Lab Batch ID:** 84958-I

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: 08101602-02
RunID: ICPMS2_081109A-4759793 Units: mg/L
Analysis Date: 11/09/2008 23:43 Analyst: BDG
*Preparation Date:* 10/30/2008 15:30 Prep By: BDG Method: SW3010A

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nickel | ND | 0.1 | 0.09931 | 95.50 | 0.1 | 0.09931 | 95.50 | 0 | 20 | 75 | 125 |
| Selenium | ND | 0.1 | 0.09080 | 90.80 | 0.1 | 0.08286 | 82.86 | 9.144 | 20 | 75 | 125 |
| Silver | ND | 0.1 | 0.1130 | 113.0 | 0.1 | 0.1117 | 111.7 | 1.157 | 20 | 75 | 125 |
| Thallium | ND | 0.1 | 0.09045 | 90.45 | 0.1 | 0.09257 | 92.57 | 2.317 | 20 | 75 | 125 |
| Vanadium | ND | 0.1 | 0.09439 | 90.23 | 0.1 | 0.09234 | 88.18 | 2.196 | 20 | 75 | 125 |
| Zinc | ND | 0.1 | 0.09688 | 90.93 | 0.1 | 0.09838 | 92.43 | 1.536 | 20 | 75 | 125 |

**Qualifiers:**
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B/V - Analyte detected in the associated Method Blank
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E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Mercury, Total
**Method:** SW7470A
**WorkOrder:** 08101602
**Lab Batch ID:** 85178

### Method Blank

RunID: HGLC_081106A-4755670 Units: mg/L
Analysis Date: 11/06/2008 13:32 Analyst: F_S
Preparation Date: 11/06/2008 13:18 Prep By: F_S Method: SW7470A

| Analyte | Result | Rep Limit |
|---|---|---|
| Mercury | ND | 0.0002 |

**Samples In Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08101602-01F | MW-2 |
| 08101602-02F | MW-3 |
| 08101602-03F | MW-4 |

### Laboratory Control Sample (LCS)

RunID: HGLC_081106A-4755671 Units: mg/L
Analysis Date: 11/06/2008 13:35 Analyst: F_S
Preparation Date: 11/06/2008 13:18 Prep By: F_S Method: SW7470A

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Mercury | 0.002000 | 0.001983 | 99.15 | 80 | 120 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08101734-09
RunID: HGLC_081106A-4755673 Units: mg/L
Analysis Date: 11/06/2008 13:39 Analyst: F_S
Preparation Date: 11/06/2008 13:18 Prep By: F_S Method: SW7470A

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | ND | 0.002 | 0.001885 | 94.26 | 0.002 | 0.001843 | 92.14 | 2.266 | 20 | 75 | 125 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits



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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Semivolatile Organics by Method 8270C
**Method:** SW8270C
**WorkOrder:** 08101602
**Lab Batch ID:** 84949

**Method Blank**

RunID: H_081106B-4755273 Units: ug/L
Analysis Date: 11/06/2008 10:56 Analyst: GY
Preparation Date: 10/30/2008 16:53 Prep By: LLL Method: SW3510C

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08101602-01C | MW-2 |
| 08101602-02C | MW-3 |
| 08101602-03C | MW-4 |

| Analyte | Result | Rep Limit |
|---|---|---|
| 1,2,4-Trichlorobenzene | ND | 5.0 |
| 1,2-Dichlorobenzene | ND | 5.0 |
| 1,2-Diphenylhydrazine | ND | 10 |
| 1,3-Dichlorobenzene | ND | 5.0 |
| 1,4-Dichlorobenzene | ND | 5.0 |
| 2,4,5-Trichlorophenol | ND | 10 |
| 2,4,6-Trichlorophenol | ND | 5.0 |
| 2,4-Dichlorophenol | ND | 5.0 |
| 2,4-Dimethylphenol | ND | 5.0 |
| 2,4-Dinitrophenol | ND | 25 |
| 2,4-Dinitrotoluene | ND | 5.0 |
| 2,6-Dinitrotoluene | ND | 5.0 |
| 2-Chloronaphthalene | ND | 5.0 |
| 2-Chlorophenol | ND | 5.0 |
| 2-Methylnaphthalene | ND | 5.0 |
| 2-Nitroaniline | ND | 25 |
| 2-Nitrophenol | ND | 5.0 |
| 3,3'-Dichlorobenzidine | ND | 10 |
| 3-Nitroaniline | ND | 25 |
| 4,6-Dinitro-2-methylphenol | ND | 25 |
| 4-Bromophenyl phenyl ether | ND | 5.0 |
| 4-Chloro-3-methylphenol | ND | 5.0 |
| 4-Chloroaniline | ND | 5.0 |
| 4-Chlorophenyl phenyl ether | ND | 5.0 |
| 4-Nitroaniline | ND | 25 |
| 4-Nitrophenol | ND | 25 |
| Acenaphthene | ND | 5.0 |
| Acenaphthylene | ND | 5.0 |
| Aniline | ND | 5.0 |
| Anthracene | ND | 5.0 |
| Benz(a)anthracene | ND | 5.0 |
| Benzo(a)pyrene | ND | 5.0 |
| Benzo(b)fluoranthene | ND | 5.0 |
| Benzo(g,h,i)perylene | ND | 5.0 |
| Benzo(k)fluoranthene | ND | 5.0 |
| Benzoic acid | ND | 25 |
| Benzyl alcohol | ND | 5.0 |
| Bis(2-chloroethoxy)methane | ND | 5.0 |
| Bis(2-chloroethyl)ether | ND | 5.0 |
| Bis(2-chloroisopropyl)ether | ND | 5.0 |
| Bis(2-ethylhexyl)phthalate | ND | 5.0 |
| Butyl benzyl phthalate | ND | 5.0 |
| Carbazole | ND | 5.0 |
| Chrysene | ND | 5.0 |
| Dibenz(a,h)anthracene | ND | 5.0 |
| Dibenzofuran | ND | 5.0 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits



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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Semivolatile Organics by Method 8270C
**Method:** SW8270C
**WorkOrder:** 08101602
**Lab Batch ID:** 84949

### Method Blank

RunID: H_081106B-4755273 Units: ug/L
Analysis Date: 11/06/2008 10:56 Analyst: GY
Preparation Date: 10/30/2008 16:53 Prep By: LLL Method: SW3510C

| Analyte | Result | Rep Limit |
|---|---|---|
| Diethyl phthalate | ND | 5.0 |
| Dimethyl phthalate | ND | 5.0 |
| Di-n-butyl phthalate | ND | 5.0 |
| Di-n-octyl phthalate | ND | 5.0 |
| Fluoranthene | ND | 5.0 |
| Fluorene | ND | 5.0 |
| Hexachlorobenzene | ND | 5.0 |
| Hexachlorobutadiene | ND | 5.0 |
| Hexachlorocyclopentadiene | ND | 5.0 |
| Hexachloroethane | ND | 5.0 |
| Indeno(1,2,3-cd)pyrene | ND | 5.0 |
| Isophorone | ND | 5.0 |
| Naphthalene | ND | 5.0 |
| Nitrobenzene | ND | 5.0 |
| N-Nitrosodi-n-propylamine | ND | 5.0 |
| N-Nitrosodiphenylamine | ND | 5.0 |
| Pentachlorophenol | ND | 25 |
| Phenanthrene | ND | 5.0 |
| Phenol | ND | 5.0 |
| Pyrene | ND | 5.0 |
| Pyridine | ND | 5.0 |
| 2-Methylphenol | ND | 5.0 |
| 3 & 4-Methylphenol | ND | 5.0 |
| Surr: 2,4,6-Tribromophenol | 76.0 | 10-123 |
| Surr: 2-Fluorobiphenyl | 82.0 | 23-116 |
| Surr: 2-Fluorophenol | 78.7 | 16-110 |
| Surr: Nitrobenzene-d5 | 76.0 | 21-114 |
| Surr: Phenol-d5 | 85.3 | 10-110 |
| Surr: Terphenyl-d14 | 80.0 | 22-141 |

### Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: H_081106B-4755274 Units: ug/L
Analysis Date: 11/06/2008 11:26 Analyst: GY
Preparation Date: 10/30/2008 16:53 Prep By: LLL Method: SW3510C

| Analyte | LCS Spike Added | LCS Result | LCS Percent Recovery | LCSD Spike Added | LCSD Result | LCSD Percent Recovery | RPD | RPD Limit | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 25.0 | 19.0 | 76.0 | 25.0 | 20.0 | 80.0 | 5.1 | 39 | 21 | 120 |
| 1,2-Dichlorobenzene | 25.0 | 20.0 | 80.0 | 25.0 | 20.0 | 80.0 | 0.0 | 50 | 20 | 150 |

**Qualifiers:**
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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## Quality Control Report

### Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Semivolatile Organics by Method 8270C **WorkOrder:** 08101602
**Method:** SW8270C **Lab Batch ID:** 84949

**Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)**

RunID: H_081106B-4755274 Units: ug/L
Analysis Date: 11/06/2008 11:26 Analyst: GY
Preparation Date: 10/30/2008 16:53 Prep By: LLL Method: SW3510C

| Analyte | LCS Spike Added | LCS Result | LCS Percent Recovery | LCSD Spike Added | LCSD Result | LCSD Percent Recovery | RPD | RPD Limit | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Diphenylhydrazine | 25.0 | 18.0 | 72.0 | 25.0 | 19.0 | 76.0 | 5.4 | 50 | 10 | 251 |
| 1,3-Dichlorobenzene | 25.0 | 19.0 | 76.0 | 25.0 | 20.0 | 80.0 | 5.1 | 50 | 20 | 150 |
| 1,4-Dichlorobenzene | 25.0 | 20.0 | 80.0 | 25.0 | 20.0 | 80.0 | 0.0 | 45 | 20 | 150 |
| 2,4,5-Trichlorophenol | 25.0 | 20.0 | 80.0 | 25.0 | 23.0 | 92.0 | 14.0 | 50 | 30 | 150 |
| 2,4,6-Trichlorophenol | 25.0 | 20.0 | 80.0 | 25.0 | 22.0 | 88.0 | 9.5 | 50 | 30 | 150 |
| 2,4-Dichlorophenol | 25.0 | 20.0 | 80.0 | 25.0 | 21.0 | 84.0 | 4.9 | 50 | 30 | 150 |
| 2,4-Dimethylphenol | 25.0 | 21.0 | 84.0 | 25.0 | 22.0 | 88.0 | 4.7 | 50 | 32 | 140 |
| 2,4-Dinitrophenol | 25.0 | 14.0 | 56.0 | 25.0 | 15.0 | 60.0 | 6.9 | 50 | 10 | 160 |
| 2,4-Dinitrotoluene | 25.0 | 22.0 | 88.0 | 25.0 | 24.0 | 96.0 | 8.7 | 50 | 30 | 150 |
| 2,6-Dinitrotoluene | 25.0 | 20.0 | 80.0 | 25.0 | 23.0 | 92.0 | 14.0 | 50 | 30 | 150 |
| 2-Chloronaphthalene | 25.0 | 22.0 | 88.0 | 25.0 | 24.0 | 96.0 | 8.7 | 50 | 30 | 150 |
| 2-Chlorophenol | 25.0 | 21.0 | 84.0 | 25.0 | 22.0 | 88.0 | 4.7 | 40 | 23 | 134 |
| 2-Methylnaphthalene | 25.0 | 22.0 | 88.0 | 25.0 | 23.0 | 92.0 | 4.4 | 50 | 20 | 170 |
| 2-Nitroaniline | 25.0 | 22.0 | 88.0 | 25.0 | 24.0 | 96.0 | 8.7 | 50 | 20 | 160 |
| 2-Nitrophenol | 25.0 | 19.0 | 76.0 | 25.0 | 22.0 | 88.0 | 14.6 | 50 | 29 | 182 |
| 3,3'-Dichlorobenzidine | 25.0 | 19.0 | 76.0 | 25.0 | 20.0 | 80.0 | 5.1 | 50 | 30 | 200 |
| 3-Nitroaniline | 25.0 | 19.0 | 76.0 | 25.0 | 22.0 | 88.0 | 14.6 | 50 | 20 | 160 |
| 4,6-Dinitro-2-methylphenol | 25.0 | 17.0 | 68.0 | 25.0 | 18.0 | 72.0 | 5.7 | 50 | 10 | 160 |
| 4-Bromophenyl phenyl ether | 25.0 | 22.0 | 88.0 | 25.0 | 22.0 | 88.0 | 0.0 | 50 | 30 | 150 |
| 4-Chloro-3-methylphenol | 25.0 | 20.0 | 80.0 | 25.0 | 22.0 | 88.0 | 9.5 | 42 | 25 | 160 |
| 4-Chloroaniline | 25.0 | 21.0 | 84.0 | 25.0 | 23.0 | 92.0 | 9.1 | 50 | 20 | 160 |
| 4-Chlorophenyl phenyl ether | 25.0 | 23.0 | 92.0 | 25.0 | 24.0 | 96.0 | 4.3 | 50 | 25 | 158 |
| 4-Nitroaniline | 25.0 | 20.0 | 80.0 | 25.0 | 24.0 | 96.0 | 18.2 | 50 | 20 | 160 |
| 4-Nitrophenol | 25.0 | 18.0 | 72.0 | 25.0 | 20.0 | 80.0 | 10.5 | 50 | 10 | 132 |
| Acenaphthene | 25.0 | 21.0 | 84.0 | 25.0 | 22.0 | 88.0 | 4.7 | 31 | 30 | 150 |
| Acenaphthylene | 25.0 | 21.0 | 84.0 | 25.0 | 22.0 | 88.0 | 4.7 | 50 | 33 | 250 |
| Aniline | 50.0 | 41.0 | 82.0 | 50.0 | 44.0 | 88.0 | 7.1 | 50 | 10 | 135 |
| Anthracene | 25.0 | 21.0 | 84.0 | 25.0 | 22.0 | 88.0 | 4.7 | 50 | 27 | 133 |
| Benz(a)anthracene | 25.0 | 22.0 | 88.0 | 25.0 | 22.0 | 88.0 | 0.0 | 50 | 33 | 143 |
| Benzo(a)pyrene | 25.0 | 19.0 | 76.0 | 25.0 | 20.0 | 80.0 | 5.1 | 50 | 17 | 163 |
| Benzo(b)fluoranthene | 25.0 | 20.0 | 80.0 | 25.0 | 22.0 | 88.0 | 9.5 | 50 | 24 | 159 |
| Benzo(g,h,i)perylene | 25.0 | 22.0 | 88.0 | 25.0 | 23.0 | 92.0 | 4.4 | 50 | 30 | 160 |
| Benzo(k)fluoranthene | 25.0 | 23.0 | 92.0 | 25.0 | 22.0 | 88.0 | 4.4 | 50 | 11 | 162 |

**Qualifiers:**

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## Quality Control Report

**Conoco Phillips**
**COP Johnson Fed4**

**Analysis:** Semivolatile Organics by Method 8270C
**Method:** SW8270C
**WorkOrder:** 08101602
**Lab Batch ID:** 84949

**Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)**

RunID: H_081106B-4755274 Units: ug/L
Analysis Date: 11/06/2008 11:26 Analyst: GY
Preparation Date: 10/30/2008 16:53 Prep By: LLL Method: SW3510C

| Analyte | LCS Spike Added | LCS Result | LCS Percent Recovery | LCSD Spike Added | LCSD Result | LCSD Percent Recovery | RPD | RPD Limit | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzoic acid | 25.0 | 40.0 | 160 | 25.0 | 40.0 | 160 | 0.0 | 50 | 10 | 400 |
| Benzyl alcohol | 25.0 | 19.0 | 76.0 | 25.0 | 20.0 | 80.0 | 5.1 | 50 | 30 | 160 |
| Bis(2-chloroethoxy)methane | 25.0 | 33.0 | 132 | 25.0 | 36.0 | 144 | 8.7 | 50 | 33 | 184 |
| Bis(2-chloroethyl)ether | 25.0 | 22.0 | 88.0 | 25.0 | 22.0 | 88.0 | 0.0 | 50 | 12 | 158 |
| Bis(2-chloroisopropyl)ether | 25.0 | 23.0 | 92.0 | 25.0 | 24.0 | 96.0 | 4.3 | 50 | 20 | 160 |
| Bis(2-ethylhexyl)phthalate | 25.0 | 22.0 | 88.0 | 25.0 | 22.0 | 88.0 | 0.0 | 50 | 10 | 158 |
| Butyl benzyl phthalate | 25.0 | 22.0 | 88.0 | 25.0 | 23.0 | 92.0 | 4.4 | 50 | 30 | 160 |
| Carbazole | 25.0 | 21.0 | 84.0 | 25.0 | 22.0 | 88.0 | 4.7 | 50 | 30 | 150 |
| Chrysene | 25.0 | 22.0 | 88.0 | 25.0 | 22.0 | 88.0 | 0.0 | 50 | 17 | 168 |
| Dibenz(a,h)anthracene | 25.0 | 22.0 | 88.0 | 25.0 | 22.0 | 88.0 | 0.0 | 50 | 30 | 160 |
| Dibenzofuran | 25.0 | 21.0 | 84.0 | 25.0 | 22.0 | 88.0 | 4.7 | 50 | 30 | 150 |
| Diethyl phthalate | 25.0 | 21.0 | 84.0 | 25.0 | 23.0 | 92.0 | 9.1 | 50 | 30 | 160 |
| Dimethyl phthalate | 25.0 | 21.0 | 84.0 | 25.0 | 22.0 | 88.0 | 4.7 | 50 | 30 | 160 |
| Di-n-butyl phthalate | 25.0 | 21.0 | 84.0 | 25.0 | 22.0 | 88.0 | 4.7 | 50 | 30 | 160 |
| Di-n-octyl phthalate | 25.0 | 21.0 | 84.0 | 25.0 | 22.0 | 88.0 | 4.7 | 50 | 20 | 150 |
| Fluoranthene | 25.0 | 21.0 | 84.0 | 25.0 | 22.0 | 88.0 | 4.7 | 50 | 26 | 137 |
| Fluorene | 25.0 | 21.0 | 84.0 | 25.0 | 23.0 | 92.0 | 9.1 | 50 | 30 | 150 |
| Hexachlorobenzene | 25.0 | 20.0 | 80.0 | 25.0 | 21.0 | 84.0 | 4.9 | 50 | 20 | 150 |
| Hexachlorobutadiene | 25.0 | 19.0 | 76.0 | 25.0 | 20.0 | 80.0 | 5.1 | 50 | 20 | 140 |
| Hexachlorocyclopentadiene | 25.0 | 17.0 | 68.0 | 25.0 | 18.0 | 72.0 | 5.7 | 50 | 10 | 150 |
| Hexachloroethane | 25.0 | 19.0 | 76.0 | 25.0 | 20.0 | 80.0 | 5.1 | 50 | 14 | 120 |
| Indeno(1,2,3-cd)pyrene | 25.0 | 23.0 | 92.0 | 25.0 | 24.0 | 96.0 | 4.3 | 50 | 30 | 160 |
| Isophorone | 25.0 | 22.0 | 88.0 | 25.0 | 24.0 | 96.0 | 8.7 | 50 | 21 | 196 |
| Naphthalene | 25.0 | 20.0 | 80.0 | 25.0 | 21.0 | 84.0 | 4.9 | 50 | 21 | 133 |
| Nitrobenzene | 25.0 | 20.0 | 80.0 | 25.0 | 21.0 | 84.0 | 4.9 | 50 | 20 | 160 |
| N-Nitrosodi-n-propylamine | 25.0 | 22.0 | 88.0 | 25.0 | 23.0 | 92.0 | 4.4 | 38 | 30 | 160 |
| N-Nitrosodiphenylamine | 50.0 | 51.0 | 102 | 50.0 | 52.0 | 104 | 1.9 | 50 | 30 | 150 |
| Pentachlorophenol | 25.0 | 14.0 | 56.0 | 25.0 | 15.0 | 60.0 | 6.9 | 50 | 14 | 176 |
| Phenanthrene | 25.0 | 20.0 | 80.0 | 25.0 | 21.0 | 84.0 | 4.9 | 50 | 10 | 140 |
| Phenol | 25.0 | 21.0 | 84.0 | 25.0 | 23.0 | 92.0 | 9.1 | 42 | 40 | 132 |
| Pyrene | 25.0 | 22.0 | 88.0 | 25.0 | 22.0 | 88.0 | 0.0 | 38 | 30 | 150 |
| Pyridine | 50.0 | 35.0 | 70.0 | 50.0 | 34.0 | 68.0 | 2.9 | 50 | 10 | 150 |
| 2-Methylphenol | 25.0 | 21.0 | 84.0 | 25.0 | 23.0 | 92.0 | 9.1 | 50 | 30 | 160 |

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## Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Semivolatile Organics by Method 8270C **WorkOrder:** 08101602
**Method:** SW8270C **Lab Batch ID:** 84949

**Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)**

RunID: H_081106B-4755274 Units: ug/L
Analysis Date: 11/06/2008 11:26 Analyst: GY
Preparation Date: 10/30/2008 16:53 Prep By: LLL Method: SW3510C

| Analyte | LCS Spike Added | LCS Result | LCS Percent Recovery | LCSD Spike Added | LCSD Result | LCSD Percent Recovery | RPD | RPD Limit | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 & 4-Methylphenol | 25.0 | 19.0 | 76.0 | 25.0 | 21.0 | 84.0 | 10.0 | 50 | 10 | 160 |
| Surr: 2,4,6-Tribromophenol | 75.0 | 64.0 | 85.3 | 75.0 | 70.0 | 93.3 | 9.0 | 30 | 10 | 123 |
| Surr: 2-Fluorobiphenyl | 50.0 | 42.0 | 84.0 | 50.0 | 41.0 | 82.0 | 2.4 | 30 | 23 | 116 |
| Surr: 2-Fluorophenol | 75.0 | 62.0 | 82.7 | 75.0 | 65.0 | 86.7 | 4.7 | 30 | 16 | 110 |
| Surr: Nitrobenzene-d5 | 50.0 | 40.0 | 80.0 | 50.0 | 42.0 | 84.0 | 4.9 | 30 | 21 | 114 |
| Surr: Phenol-d5 | 75.0 | 65.0 | 86.7 | 75.0 | 69.0 | 92.0 | 6.0 | 30 | 10 | 110 |
| Surr: Terphenyl-d14 | 50.0 | 42.0 | 84.0 | 50.0 | 42.0 | 84.0 | 0.0 | 30 | 22 | 141 |

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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Volatile Organics by Method 8260B
**Method:** SW8260B
**WorkOrder:** 08101602
**Lab Batch ID:** R255859

**Method Blank**

RunID: L_081101C-4749652 Units: ug/L
Analysis Date: 11/01/2008 12:40 Analyst: LU_L
Preparation Date: 11/01/2008 12:40 Prep By: Method:

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08101602-01A | MW-2 |
| 08101602-02A | MW-3 |

| Analyte | Result | Rep Limit |
|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND | 5.0 |
| 1,1,1-Trichloroethane | ND | 5.0 |
| 1,1,2,2-Tetrachloroethane | ND | 5.0 |
| 1,1,2-Trichloroethane | ND | 5.0 |
| 1,1-Dichloroethane | ND | 5.0 |
| 1,1-Dichloroethene | ND | 5.0 |
| 1,1-Dichloropropene | ND | 5.0 |
| 1,2,3-Trichlorobenzene | ND | 5.0 |
| 1,2,3-Trichloropropane | ND | 5.0 |
| 1,2,4-Trichlorobenzene | ND | 5.0 |
| 1,2,4-Trimethylbenzene | ND | 5.0 |
| 1,2-Dibromo-3-chloropropane | ND | 5.0 |
| 1,2-Dibromoethane | ND | 5.0 |
| 1,2-Dichlorobenzene | ND | 5.0 |
| 1,2-Dichloroethane | ND | 5.0 |
| 1,2-Dichloropropane | ND | 5.0 |
| 1,3,5-Trimethylbenzene | ND | 5.0 |
| 1,3-Dichlorobenzene | ND | 5.0 |
| 1,3-Dichloropropane | ND | 5.0 |
| 1,4-Dichlorobenzene | ND | 5.0 |
| 2,2-Dichloropropane | ND | 5.0 |
| 2-Butanone | ND | 20 |
| 2-Chloroethyl vinyl ether | ND | 10 |
| 2-Chlorotoluene | ND | 5.0 |
| 2-Hexanone | ND | 10 |
| 4-Chlorotoluene | ND | 5.0 |
| 4-Isopropyltoluene | ND | 5.0 |
| 4-Methyl-2-pentanone | ND | 10 |
| Acetone | ND | 100 |
| Acrylonitrile | ND | 50 |
| Benzene | ND | 5.0 |
| Bromobenzene | ND | 5.0 |
| Bromochloromethane | ND | 5.0 |
| Bromodichloromethane | ND | 5.0 |
| Bromoform | ND | 5.0 |
| Bromomethane | ND | 10 |
| Carbon disulfide | ND | 5.0 |
| Carbon tetrachloride | ND | 5.0 |
| Chlorobenzene | ND | 5.0 |
| Chloroethane | ND | 10 |
| Chloroform | ND | 5.0 |
| Chloromethane | ND | 10 |
| Dibromochloromethane | ND | 5.0 |
| Dibromomethane | ND | 5.0 |
| Dichlorodifluoromethane | ND | 10 |
| Ethylbenzene | ND | 5.0 |

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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Volatile Organics by Method 8260B
**Method:** SW8260B
**WorkOrder:** 08101602
**Lab Batch ID:** R255859

### Method Blank

RunID: L_081101C-4749652 Units: ug/L
Analysis Date: 11/01/2008 12:40 Analyst: LU_L
Preparation Date: 11/01/2008 12:40 Prep By: Method:

| Analyte | Result | Rep Limit |
|---|---|---|
| Hexachlorobutadiene | ND | 5.0 |
| Isopropylbenzene | ND | 5.0 |
| Methyl tert-butyl ether | ND | 5.0 |
| Methylene chloride | ND | 5.0 |
| Naphthalene | ND | 5.0 |
| n-Butylbenzene | ND | 5.0 |
| n-Propylbenzene | ND | 5.0 |
| sec-Butylbenzene | ND | 5.0 |
| Styrene | ND | 5.0 |
| tert-Butylbenzene | ND | 5.0 |
| Tetrachloroethene | ND | 5.0 |
| Toluene | ND | 5.0 |
| Trichloroethene | ND | 5.0 |
| Trichlorofluoromethane | ND | 5.0 |
| Vinyl acetate | ND | 10 |
| Vinyl chloride | ND | 10 |
| cis-1,2-Dichloroethene | ND | 5.0 |
| cis-1,3-Dichloropropene | ND | 5.0 |
| m,p-Xylene | ND | 5.0 |
| o-Xylene | ND | 5.0 |
| trans-1,2-Dichloroethene | ND | 5.0 |
| trans-1,3-Dichloropropene | ND | 5.0 |
| 1,2-Dichloroethene (total) | ND | 5.0 |
| Xylenes,Total | ND | 5.0 |
| Surr: 1,2-Dichloroethane-d4 | 104.0 | 62-130 |
| Surr: 4-Bromofluorobenzene | 100.0 | 70-130 |
| Surr: Toluene-d8 | 104.0 | 74-122 |

### Laboratory Control Sample (LCS)

RunID: L_081101C-4749651 Units: ug/L
Analysis Date: 11/01/2008 12:13 Analyst: LU_L
Preparation Date: 11/01/2008 12:13 Prep By: Method:

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 20.0 | 20.0 | 100 | 71 | 136 |
| 1,1,1-Trichloroethane | 20.0 | 19.0 | 95.0 | 66 | 132 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 24.0 | 120 | 55 | 139 |
| 1,1,2-Trichloroethane | 20.0 | 24.0 | 120 | 70 | 130 |
| 1,1-Dichloroethane | 20.0 | 23.0 | 115 | 67 | 131 |

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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Volatile Organics by Method 8260B **WorkOrder:** 08101602
**Method:** SW8260B **Lab Batch ID:** R255859

**Laboratory Control Sample (LCS)**

RunID: L_081101C-4749651 Units: ug/L
Analysis Date: 11/01/2008 12:13 Analyst: LU_L
Preparation Date: 11/01/2008 12:13 Prep By: Method:

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| 1,1-Dichloroethene | 20.0 | 21.0 | 105 | 71 | 146 |
| 1,1-Dichloropropene | 20.0 | 22.0 | 110 | 59 | 138 |
| 1,2,3-Trichlorobenzene | 20.0 | 21.0 | 105 | 37 | 155 |
| 1,2,3-Trichloropropane | 20.0 | 24.0 | 120 | 70 | 145 |
| 1,2,4-Trichlorobenzene | 20.0 | 22.0 | 110 | 39 | 133 |
| 1,2,4-Trimethylbenzene | 20.0 | 21.0 | 105 | 53 | 147 |
| 1,2-Dibromo-3-chloropropane | 20.0 | 24.0 | 120 | 43 | 137 |
| 1,2-Dibromoethane | 20.0 | 22.0 | 110 | 63 | 126 |
| 1,2-Dichlorobenzene | 20.0 | 22.0 | 110 | 70 | 130 |
| 1,2-Dichloroethane | 20.0 | 21.0 | 105 | 64 | 150 |
| 1,2-Dichloropropane | 20.0 | 23.0 | 115 | 76 | 124 |
| 1,3,5-Trimethylbenzene | 20.0 | 21.0 | 105 | 57 | 146 |
| 1,3-Dichlorobenzene | 20.0 | 22.0 | 110 | 72 | 134 |
| 1,3-Dichloropropane | 20.0 | 23.0 | 115 | 78 | 130 |
| 1,4-Dichlorobenzene | 20.0 | 22.0 | 110 | 70 | 130 |
| 2,2-Dichloropropane | 20.0 | 17.0 | 85.0 | 45 | 156 |
| 2-Butanone | 120 | 220 | 183 | 20 | 235 |
| 2-Chloroethyl vinyl ether | 20.0 | 19.0 | 95.0 | 13 | 179 |
| 2-Chlorotoluene | 20.0 | 21.0 | 105 | 64 | 122 |
| 2-Hexanone | 20.0 | 29.0 | 145 | 34 | 182 |
| 4-Chlorotoluene | 20.0 | 22.0 | 110 | 64 | 142 |
| 4-Isopropyltoluene | 20.0 | 22.0 | 110 | 60 | 134 |
| 4-Methyl-2-pentanone | 20.0 | 22.0 | 110 | 11 | 145 |
| Acetone | 200 | 490 | 245 | 13 | 386 |
| Acrylonitrile | 100 | 130 | 130 | 43 | 194 |
| Benzene | 20.0 | 22.0 | 110 | 76 | 126 |
| Bromobenzene | 20.0 | 22.0 | 110 | 70 | 130 |
| Bromochloromethane | 20.0 | 23.0 | 115 | 63 | 131 |
| Bromodichloromethane | 20.0 | 22.0 | 110 | 77 | 138 |
| Bromoform | 20.0 | 17.0 | 85.0 | 55 | 129 |
| Bromomethane | 20.0 | 21.0 | 105 | 58 | 148 |
| Carbon disulfide | 20.0 | 18.0 | 90.0 | 46 | 146 |
| Carbon tetrachloride | 20.0 | 17.0 | 85.0 | 66 | 137 |
| Chlorobenzene | 20.0 | 22.0 | 110 | 67 | 136 |

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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Volatile Organics by Method 8260B **WorkOrder:** 08101602
**Method:** SW8260B **Lab Batch ID:** R255859

**Laboratory Control Sample (LCS)**

RunID: L_081101C-4749651 Units: ug/L
Analysis Date: 11/01/2008 12:13 Analyst: LU_L
Preparation Date: 11/01/2008 12:13 Prep By: Method:

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Chloroethane | 20.0 | 22.0 | 110 | 50 | 137 |
| Chloroform | 20.0 | 23.0 | 115 | 70 | 135 |
| Chloromethane | 20.0 | 19.0 | 95.0 | 51 | 140 |
| Dibromochloromethane | 20.0 | 19.0 | 95.0 | 69 | 127 |
| Dibromomethane | 20.0 | 22.0 | 110 | 74 | 130 |
| Dichlorodifluoromethane | 20.0 | 19.0 | 95.0 | 32 | 161 |
| Ethylbenzene | 20.0 | 22.0 | 110 | 67 | 122 |
| Hexachlorobutadiene | 20.0 | 22.0 | 110 | 43 | 144 |
| Isopropylbenzene | 20.0 | 19.0 | 95.0 | 60 | 135 |
| Methyl tert-butyl ether | 40.0 | 41.0 | 102 | 48 | 160 |
| Methylene chloride | 20.0 | 22.0 | 110 | 52 | 143 |
| Naphthalene | 20.0 | 21.0 | 105 | 24 | 150 |
| n-Butylbenzene | 20.0 | 22.0 | 110 | 50 | 140 |
| n-Propylbenzene | 20.0 | 21.0 | 105 | 62 | 137 |
| sec-Butylbenzene | 20.0 | 22.0 | 110 | 66 | 126 |
| Styrene | 20.0 | 21.0 | 105 | 60 | 139 |
| tert-Butylbenzene | 20.0 | 21.0 | 105 | 67 | 140 |
| Tetrachloroethene | 20.0 | 21.0 | 105 | 26 | 200 |
| Toluene | 20.0 | 22.0 | 110 | 70 | 131 |
| Trichloroethene | 20.0 | 21.0 | 105 | 64 | 137 |
| Trichlorofluoromethane | 20.0 | 21.0 | 105 | 46 | 167 |
| Vinyl acetate | 20.0 | 24.0 | 120 | 10 | 193 |
| Vinyl chloride | 20.0 | 26.0 | 130 | 31 | 147 |
| cis-1,2-Dichloroethene | 20.0 | 23.0 | 115 | 70 | 142 |
| cis-1,3-Dichloropropene | 20.0 | 21.0 | 105 | 61 | 134 |
| m,p-Xylene | 40.0 | 47.0 | 118 | 72 | 150 |
| o-Xylene | 20.0 | 22.0 | 110 | 78 | 141 |
| trans-1,2-Dichloroethene | 20.0 | 23.0 | 115 | 67 | 141 |
| trans-1,3-Dichloropropene | 20.0 | 19.0 | 95.0 | 56 | 136 |
| 1,2-Dichloroethene (total) | 40 | 46 | 120 | 73 | 139 |
| Xylenes,Total | 60 | 69 | 120 | 72 | 150 |
| Surr: 1,2-Dichloroethane-d4 | 50.0 | 52 | 104 | 62 | 130 |
| Surr: 4-Bromofluorobenzene | 50.0 | 51 | 102 | 70 | 130 |
| Surr: Toluene-d8 | 50.0 | 52 | 104 | 74 | 122 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Volatile Organics by Method 8260B
**Method:** SW8260B
**WorkOrder:** 08101602
**Lab Batch ID:** R255859

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: 08101352-02
RunID: L_081101C-4749654 Units: ug/L
Analysis Date: 11/01/2008 14:56 Analyst: LU_L

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND | 20 | 19.0 | 95.0 | 20 | 18.0 | 90.0 | 5.41 | 20 | 35 | 175 |
| 1,1,1-Trichloroethane | ND | 20 | 16.0 | 80.0 | 20 | 16.0 | 80.0 | 0 | 20 | 35 | 175 |
| 1,1,2,2-Tetrachloroethane | ND | 20 | 17.0 | 85.0 | 20 | 18.0 | 90.0 | 5.71 | 20 | 35 | 175 |
| 1,1,2-Trichloroethane | ND | 20 | 21.0 | 105 | 20 | 21.0 | 105 | 0 | 20 | 35 | 175 |
| 1,1-Dichloroethane | ND | 20 | 19.0 | 95.0 | 20 | 20.0 | 100 | 5.13 | 20 | 35 | 175 |
| 1,1-Dichloroethene | ND | 20 | 18.0 | 90.0 | 20 | 20.0 | 100 | 10.5 | 22 | 61 | 145 |
| 1,1-Dichloropropene | ND | 20 | 18.0 | 90.0 | 20 | 20.0 | 100 | 10.5 | 20 | 35 | 175 |
| 1,2,3-Trichlorobenzene | ND | 20 | 17.0 | 85.0 | 20 | 18.0 | 90.0 | 5.71 | 20 | 27 | 187 |
| 1,2,3-Trichloropropane | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 20 | 35 | 175 |
| 1,2,4-Trichlorobenzene | ND | 20 | 18.0 | 90.0 | 20 | 18.0 | 90.0 | 0 | 20 | 34 | 150 |
| 1,2,4-Trimethylbenzene | ND | 20 | 18.0 | 90.0 | 20 | 19.0 | 95.0 | 5.41 | 20 | 35 | 175 |
| 1,2-Dibromo-3-chloropropane | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 20 | 15 | 175 |
| 1,2-Dibromoethane | ND | 20 | 20.0 | 100 | 20 | 20.0 | 100 | 0 | 20 | 35 | 175 |
| 1,2-Dichlorobenzene | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 20 | 35 | 175 |
| 1,2-Dichloroethane | ND | 20 | 18.0 | 90.0 | 20 | 18.0 | 90.0 | 0 | 20 | 35 | 175 |
| 1,2-Dichloropropane | ND | 20 | 19.0 | 95.0 | 20 | 20.0 | 100 | 5.13 | 20 | 35 | 175 |
| 1,3,5-Trimethylbenzene | ND | 20 | 18.0 | 90.0 | 20 | 18.0 | 90.0 | 0 | 20 | 35 | 175 |
| 1,3-Dichlorobenzene | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 20 | 35 | 175 |
| 1,3-Dichloropropane | ND | 20 | 20.0 | 100 | 20 | 21.0 | 105 | 4.88 | 20 | 35 | 175 |
| 1,4-Dichlorobenzene | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 20 | 35 | 175 |
| 2,2-Dichloropropane | ND | 20 | 13.0 | 65.0 | 20 | 14.0 | 70.0 | 7.41 | 20 | 35 | 175 |
| 2-Butanone | ND | 20 | 32.0 | 160 | 20 | 32.0 | 160 | 0 | 20 | 10 | 230 |
| 2-Chloroethyl vinyl ether | ND | 20 | 0 | 0 * | 20 | 0 | 0 * | 0 | 20 | 10 | 250 |
| 2-Chlorotoluene | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 20 | 31 | 175 |
| 2-Hexanone | ND | 20 | 15.0 | 75.0 | 20 | 18.0 | 90.0 | 18.2 | 20 | 10 | 250 |
| 4-Chlorotoluene | ND | 20 | 19.0 | 95.0 | 20 | 20.0 | 100 | 5.13 | 20 | 31 | 175 |
| 4-Isopropyltoluene | ND | 20 | 18.0 | 90.0 | 20 | 18.0 | 90.0 | 0 | 20 | 35 | 175 |
| 4-Methyl-2-pentanone | ND | 20 | 16.0 | 80.0 | 20 | 18.0 | 90.0 | 11.8 | 20 | 10 | 175 |
| Acetone | ND | 100 | 99.0 | 99.0 | 100 | 110 | 110 | 10.5 | 20 | 10 | 400 |
| Acrylonitrile | ND | 200 | 190 | 95.0 | 200 | 210 | 105 | 10.0 | 20 | 15 | 250 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits



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## Quality Control Report

**Conoco Phillips**
**COP Johnson Fed4**

**Analysis:** Volatile Organics by Method 8260B
**Method:** SW8260B
**WorkOrder:** 08101602
**Lab Batch ID:** R255859

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: 08101352-02
RunID: L_081101C-4749654 Units: ug/L
Analysis Date: 11/01/2008 14:56 Analyst: LU_L

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 20 | 19.0 | 95.0 | 20 | 20.0 | 100 | 5.13 | 22 | 76 | 127 |
| Bromobenzene | ND | 20 | 20.0 | 100 | 20 | 20.0 | 100 | 0 | 20 | 35 | 175 |
| Bromochloromethane | ND | 20 | 21.0 | 105 | 20 | 22.0 | 110 | 4.65 | 20 | 35 | 175 |
| Bromodichloromethane | ND | 20 | 18.0 | 90.0 | 20 | 19.0 | 95.0 | 5.41 | 20 | 35 | 175 |
| Bromoform | ND | 20 | 16.0 | 80.0 | 20 | 16.0 | 80.0 | 0 | 20 | 35 | 175 |
| Bromomethane | ND | 20 | 19.0 | 95.0 | 20 | 20.0 | 100 | 5.13 | 20 | 35 | 175 |
| Carbon disulfide | ND | 20 | 16.0 | 80.0 | 20 | 18.0 | 90.0 | 11.8 | 20 | 30 | 225 |
| Carbon tetrachloride | ND | 20 | 16.0 | 80.0 | 20 | 16.0 | 80.0 | 0 | 20 | 35 | 175 |
| Chlorobenzene | ND | 20 | 20.0 | 100 | 20 | 19.0 | 95.0 | 5.13 | 21 | 70 | 130 |
| Chloroethane | ND | 20 | 20.0 | 100 | 20 | 21.0 | 105 | 4.88 | 20 | 35 | 175 |
| Chloroform | ND | 20 | 20.0 | 100 | 20 | 21.0 | 105 | 4.88 | 20 | 35 | 175 |
| Chloromethane | ND | 20 | 17.0 | 85.0 | 20 | 18.0 | 90.0 | 5.71 | 20 | 35 | 175 |
| Dibromochloromethane | ND | 20 | 18.0 | 90.0 | 20 | 18.0 | 90.0 | 0 | 20 | 35 | 175 |
| Dibromomethane | ND | 20 | 20.0 | 100 | 20 | 20.0 | 100 | 0 | 20 | 35 | 175 |
| Dichlorodifluoromethane | ND | 20 | 13.0 | 65.0 | 20 | 15.0 | 75.0 | 14.3 | 20 | 35 | 175 |
| Ethylbenzene | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 20 | 35 | 175 |
| Hexachlorobutadiene | ND | 20 | 18.0 | 90.0 | 20 | 18.0 | 90.0 | 0 | 20 | 43 | 144 |
| Isopropylbenzene | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 20 | 35 | 175 |
| Methyl tert-butyl ether | ND | 20 | 17.0 | 85.0 | 20 | 18.0 | 90.0 | 5.71 | 20 | 35 | 175 |
| Methylene chloride | ND | 20 | 19.0 | 95.0 | 20 | 20.0 | 100 | 5.13 | 20 | 35 | 175 |
| Naphthalene | ND | 20 | 17.0 | 85.0 | 20 | 18.0 | 90.0 | 5.71 | 20 | 20 | 210 |
| n-Butylbenzene | ND | 20 | 18.0 | 90.0 | 20 | 18.0 | 90.0 | 0 | 20 | 35 | 175 |
| n-Propylbenzene | ND | 20 | 18.0 | 90.0 | 20 | 19.0 | 95.0 | 5.41 | 20 | 35 | 175 |
| sec-Butylbenzene | ND | 20 | 18.0 | 90.0 | 20 | 19.0 | 95.0 | 5.41 | 20 | 35 | 175 |
| Styrene | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 20 | 35 | 175 |
| tert-Butylbenzene | ND | 20 | 18.0 | 90.0 | 20 | 18.0 | 90.0 | 0 | 20 | 35 | 175 |
| Tetrachloroethene | ND | 20 | 20.0 | 100 | 20 | 18.0 | 90.0 | 10.5 | 20 | 30 | 250 |
| Toluene | ND | 20 | 21.0 | 105 | 20 | 21.0 | 105 | 0 | 24 | 70 | 131 |
| Trichloroethene | ND | 20 | 20.0 | 100 | 20 | 19.0 | 95.0 | 5.13 | 21 | 60 | 140 |
| Trichlorofluoromethane | ND | 20 | 17.0 | 85.0 | 20 | 16.0 | 80.0 | 6.06 | 20 | 17 | 250 |
| Vinyl acetate | ND | 20 | 17.0 | 85.0 | 20 | 19.0 | 95.0 | 11.1 | 20 | 10 | 250 |
| Vinyl chloride | ND | 20 | 24.0 | 120 | 20 | 25.0 | 125 | 4.08 | 20 | 35 | 175 |

**Qualifiers:**
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
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## Quality Control Report

### Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Volatile Organics by Method 8260B **WorkOrder:** 08101602
**Method:** SW8260B **Lab Batch ID:** R255859

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: 08101352-02
RunID: L_081101C-4749654 Units: ug/L
Analysis Date: 11/01/2008 14:56 Analyst: LU_L

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | ND | 20 | 20.0 | 100 | 20 | 21.0 | 105 | 4.88 | 20 | 35 | 175 |
| cis-1,3-Dichloropropene | ND | 20 | 18.0 | 90.0 | 20 | 18.0 | 90.0 | 0 | 20 | 35 | 175 |
| m,p-Xylene | ND | 40 | 40.0 | 100 | 40 | 39.0 | 97.5 | 2.53 | 20 | 35 | 175 |
| o-Xylene | ND | 20 | 20.0 | 100 | 20 | 19.0 | 95.0 | 5.13 | 20 | 35 | 175 |
| trans-1,2-Dichloroethene | ND | 20 | 19.0 | 95.0 | 20 | 20.0 | 100 | 5.13 | 20 | 35 | 175 |
| trans-1,3-Dichloropropene | ND | 20 | 16.0 | 80.0 | 20 | 17.0 | 85.0 | 6.06 | 20 | 35 | 175 |
| 1,2-Dichloroethene (total) | ND | 40 | 39 | 98 | 40 | 41 | 100 | 5.0 | 20 | 35 | 175 |
| Xylenes,Total | ND | 60 | 60 | 100 | 60 | 58 | 97 | 3.4 | 20 | 35 | 175 |
| Surr: 1,2-Dichloroethane-d4 | ND | 50 | 50 | 100 | 50 | 52.0 | 104 | 3.92 | 30 | 62 | 130 |
| Surr: 4-Bromofluorobenzene | ND | 50 | 52 | 104 | 50 | 51.0 | 102 | 1.94 | 30 | 70 | 130 |
| Surr: Toluene-d8 | ND | 50 | 53 | 106 | 50 | 52.0 | 104 | 1.90 | 30 | 74 | 122 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Volatile Organics by Method 8260B
**Method:** SW8260B
**WorkOrder:** 08101602
**Lab Batch ID:** R255960

**Method Blank**

RunID: Q_081104C-4751679 Units: ug/L
Analysis Date: 11/04/2008 14:45 Analyst: JC
Preparation Date: 11/04/2008 14:45 Prep By: Method:

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08101602-03A | MW-4 |
| 08101602-04A | MW-1 |
| 08101602-05A | Duplicate |
| 08101602-06A | (Trip Blank) |

| Analyte | Result | Rep Limit |
|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND | 5.0 |
| 1,1,1-Trichloroethane | ND | 5.0 |
| 1,1,2,2-Tetrachloroethane | ND | 5.0 |
| 1,1,2-Trichloroethane | ND | 5.0 |
| 1,1-Dichloroethane | ND | 5.0 |
| 1,1-Dichloroethene | ND | 5.0 |
| 1,1-Dichloropropene | ND | 5.0 |
| 1,2,3-Trichlorobenzene | ND | 5.0 |
| 1,2,3-Trichloropropane | ND | 5.0 |
| 1,2,4-Trichlorobenzene | ND | 5.0 |
| 1,2,4-Trimethylbenzene | ND | 5.0 |
| 1,2-Dibromo-3-chloropropane | ND | 5.0 |
| 1,2-Dibromoethane | ND | 5.0 |
| 1,2-Dichlorobenzene | ND | 5.0 |
| 1,2-Dichloroethane | ND | 5.0 |
| 1,2-Dichloropropane | ND | 5.0 |
| 1,3,5-Trimethylbenzene | ND | 5.0 |
| 1,3-Dichlorobenzene | ND | 5.0 |
| 1,3-Dichloropropane | ND | 5.0 |
| 1,4-Dichlorobenzene | ND | 5.0 |
| 2,2-Dichloropropane | ND | 5.0 |
| 2-Butanone | ND | 20 |
| 2-Chloroethyl vinyl ether | ND | 10 |
| 2-Chlorotoluene | ND | 5.0 |
| 2-Hexanone | ND | 10 |
| 4-Chlorotoluene | ND | 5.0 |
| 4-Isopropyltoluene | ND | 5.0 |
| 4-Methyl-2-pentanone | ND | 10 |
| Acetone | ND | 100 |
| Acrylonitrile | ND | 50 |
| Benzene | ND | 5.0 |
| Bromobenzene | ND | 5.0 |
| Bromochloromethane | ND | 5.0 |
| Bromodichloromethane | ND | 5.0 |
| Bromoform | ND | 5.0 |
| Bromomethane | ND | 10 |
| Carbon disulfide | ND | 5.0 |
| Carbon tetrachloride | ND | 5.0 |
| Chlorobenzene | ND | 5.0 |
| Chloroethane | ND | 10 |
| Chloroform | ND | 5.0 |
| Chloromethane | ND | 10 |
| Dibromochloromethane | ND | 5.0 |
| Dibromomethane | ND | 5.0 |
| Dichlorodifluoromethane | ND | 10 |
| Ethylbenzene | ND | 5.0 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Volatile Organics by Method 8260B **WorkOrder:** 08101602
**Method:** SW8260B **Lab Batch ID:** R255960

### Method Blank

RunID: Q_081104C-4751679 Units: ug/L
Analysis Date: 11/04/2008 14:45 Analyst: JC
Preparation Date: 11/04/2008 14:45 Prep By: Method:

| Analyte | Result | Rep Limit |
|---|---|---|
| Hexachlorobutadiene | ND | 5.0 |
| Isopropylbenzene | ND | 5.0 |
| Methyl tert-butyl ether | ND | 5.0 |
| Methylene chloride | ND | 5.0 |
| Naphthalene | ND | 5.0 |
| n-Butylbenzene | ND | 5.0 |
| n-Propylbenzene | ND | 5.0 |
| sec-Butylbenzene | ND | 5.0 |
| Styrene | ND | 5.0 |
| tert-Butylbenzene | ND | 5.0 |
| Tetrachloroethene | ND | 5.0 |
| Toluene | ND | 5.0 |
| Trichloroethene | ND | 5.0 |
| Trichlorofluoromethane | ND | 5.0 |
| Vinyl acetate | ND | 10 |
| Vinyl chloride | ND | 10 |
| cis-1,2-Dichloroethene | ND | 5.0 |
| cis-1,3-Dichloropropene | ND | 5.0 |
| m,p-Xylene | ND | 5.0 |
| o-Xylene | ND | 5.0 |
| trans-1,2-Dichloroethene | ND | 5.0 |
| trans-1,3-Dichloropropene | ND | 5.0 |
| 1,2-Dichloroethene (total) | ND | 5.0 |
| Xylenes,Total | ND | 5.0 |
| Surr: 1,2-Dichloroethane-d4 | 102.0 | 62-130 |
| Surr: 4-Bromofluorobenzene | 108.0 | 70-130 |
| Surr: Toluene-d8 | 106.0 | 74-122 |

### Laboratory Control Sample (LCS)

RunID: Q_081104C-4751395 Units: ug/L
Analysis Date: 11/04/2008 14:15 Analyst: JC
Preparation Date: 11/04/2008 14:15 Prep By: Method:

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 20.0 | 18.0 | 90.0 | 71 | 136 |
| 1,1,1-Trichloroethane | 20.0 | 19.0 | 95.0 | 66 | 132 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 18.0 | 90.0 | 55 | 139 |
| 1,1,2-Trichloroethane | 20.0 | 19.0 | 95.0 | 70 | 130 |
| 1,1-Dichloroethane | 20.0 | 18.0 | 90.0 | 67 | 131 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits



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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Volatile Organics by Method 8260B **WorkOrder:** 08101602
**Method:** SW8260B **Lab Batch ID:** R255960

**Laboratory Control Sample (LCS)**

RunID: Q_081104C-4751395 Units: ug/L
Analysis Date: 11/04/2008 14:15 Analyst: JC
Preparation Date: 11/04/2008 14:15 Prep By: Method:

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| 1,1-Dichloroethene | 20.0 | 19.0 | 95.0 | 71 | 146 |
| 1,1-Dichloropropene | 20.0 | 18.0 | 90.0 | 59 | 138 |
| 1,2,3-Trichlorobenzene | 20.0 | 18.0 | 90.0 | 37 | 155 |
| 1,2,3-Trichloropropane | 20.0 | 20.0 | 100 | 70 | 145 |
| 1,2,4-Trichlorobenzene | 20.0 | 18.0 | 90.0 | 39 | 133 |
| 1,2,4-Trimethylbenzene | 20.0 | 17.0 | 85.0 | 53 | 147 |
| 1,2-Dibromo-3-chloropropane | 20.0 | 16.0 | 80.0 | 43 | 137 |
| 1,2-Dibromoethane | 20.0 | 18.0 | 90.0 | 63 | 126 |
| 1,2-Dichlorobenzene | 20.0 | 17.0 | 85.0 | 70 | 130 |
| 1,2-Dichloroethane | 20.0 | 17.0 | 85.0 | 64 | 150 |
| 1,2-Dichloropropane | 20.0 | 18.0 | 90.0 | 76 | 124 |
| 1,3,5-Trimethylbenzene | 20.0 | 17.0 | 85.0 | 57 | 146 |
| 1,3-Dichlorobenzene | 20.0 | 17.0 | 85.0 | 72 | 134 |
| 1,3-Dichloropropane | 20.0 | 18.0 | 90.0 | 78 | 130 |
| 1,4-Dichlorobenzene | 20.0 | 17.0 | 85.0 | 70 | 130 |
| 2,2-Dichloropropane | 20.0 | 19.0 | 95.0 | 45 | 156 |
| 2-Butanone | 120 | 100 | 83.3 | 20 | 235 |
| 2-Chloroethyl vinyl ether | 20.0 | 19.0 | 95.0 | 13 | 179 |
| 2-Chlorotoluene | 20.0 | 17.0 | 85.0 | 64 | 122 |
| 2-Hexanone | 20.0 | 18.0 | 90.0 | 34 | 182 |
| 4-Chlorotoluene | 20.0 | 17.0 | 85.0 | 64 | 142 |
| 4-Isopropyltoluene | 20.0 | 18.0 | 90.0 | 60 | 134 |
| 4-Methyl-2-pentanone | 20.0 | 18.0 | 90.0 | 11 | 145 |
| Acetone | 200 | 200 | 100 | 13 | 386 |
| Acrylonitrile | 100 | 87.0 | 87.0 | 43 | 194 |
| Benzene | 20.0 | 19.0 | 95.0 | 76 | 126 |
| Bromobenzene | 20.0 | 18.0 | 90.0 | 70 | 130 |
| Bromochloromethane | 20.0 | 19.0 | 95.0 | 63 | 131 |
| Bromodichloromethane | 20.0 | 20.0 | 100 | 77 | 138 |
| Bromoform | 20.0 | 18.0 | 90.0 | 55 | 129 |
| Bromomethane | 20.0 | 19.0 | 95.0 | 58 | 148 |
| Carbon disulfide | 20.0 | 18.0 | 90.0 | 46 | 146 |
| Carbon tetrachloride | 20.0 | 19.0 | 95.0 | 66 | 137 |
| Chlorobenzene | 20.0 | 18.0 | 90.0 | 67 | 136 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Volatile Organics by Method 8260B
**Method:** SW8260B

**WorkOrder:** 08101602
**Lab Batch ID:** R255960

**Laboratory Control Sample (LCS)**

RunID: Q_081104C-4751395 Units: ug/L
Analysis Date: 11/04/2008 14:15 Analyst: JC
Preparation Date: 11/04/2008 14:15 Prep By: Method:

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Chloroethane | 20.0 | 18.0 | 90.0 | 50 | 137 |
| Chloroform | 20.0 | 18.0 | 90.0 | 70 | 135 |
| Chloromethane | 20.0 | 20.0 | 100 | 51 | 140 |
| Dibromochloromethane | 20.0 | 18.0 | 90.0 | 69 | 127 |
| Dibromomethane | 20.0 | 19.0 | 95.0 | 74 | 130 |
| Dichlorodifluoromethane | 20.0 | 21.0 | 105 | 32 | 161 |
| Ethylbenzene | 20.0 | 19.0 | 95.0 | 67 | 122 |
| Hexachlorobutadiene | 20.0 | 19.0 | 95.0 | 43 | 144 |
| Isopropylbenzene | 20.0 | 17.0 | 85.0 | 60 | 135 |
| Methyl tert-butyl ether | 40.0 | 36.0 | 90.0 | 48 | 160 |
| Methylene chloride | 20.0 | 18.0 | 90.0 | 52 | 143 |
| Naphthalene | 20.0 | 17.0 | 85.0 | 24 | 150 |
| n-Butylbenzene | 20.0 | 18.0 | 90.0 | 50 | 140 |
| n-Propylbenzene | 20.0 | 16.0 | 80.0 | 62 | 137 |
| sec-Butylbenzene | 20.0 | 17.0 | 85.0 | 66 | 126 |
| Styrene | 20.0 | 19.0 | 95.0 | 60 | 139 |
| tert-Butylbenzene | 20.0 | 16.0 | 80.0 | 67 | 140 |
| Tetrachloroethene | 20.0 | 18.0 | 90.0 | 26 | 200 |
| Toluene | 20.0 | 19.0 | 95.0 | 70 | 131 |
| Trichloroethene | 20.0 | 19.0 | 95.0 | 64 | 137 |
| Trichlorofluoromethane | 20.0 | 11.0 | 55.0 | 46 | 167 |
| Vinyl acetate | 20.0 | 20.0 | 100 | 10 | 193 |
| Vinyl chloride | 20.0 | 22.0 | 110 | 31 | 147 |
| cis-1,2-Dichloroethene | 20.0 | 19.0 | 95.0 | 70 | 142 |
| cis-1,3-Dichloropropene | 20.0 | 18.0 | 90.0 | 61 | 134 |
| m,p-Xylene | 40.0 | 38.0 | 95.0 | 72 | 150 |
| o-Xylene | 20.0 | 19.0 | 95.0 | 78 | 141 |
| trans-1,2-Dichloroethene | 20.0 | 18.0 | 90.0 | 67 | 141 |
| trans-1,3-Dichloropropene | 20.0 | 19.0 | 95.0 | 56 | 136 |
| 1,2-Dichloroethene (total) | 40 | 37 | 92 | 73 | 139 |
| Xylenes,Total | 60 | 57 | 95 | 72 | 150 |
| Surr: 1,2-Dichloroethane-d4 | 50.0 | 52 | 104 | 62 | 130 |
| Surr: 4-Bromofluorobenzene | 50.0 | 53 | 106 | 70 | 130 |
| Surr: Toluene-d8 | 50.0 | 52 | 104 | 74 | 122 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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## Quality Control Report

**Conoco Phillips**
**COP Johnson Fed4**

**Analysis:** Volatile Organics by Method 8260B
**Method:** SW8260B
**WorkOrder:** 08101602
**Lab Batch ID:** R255960

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: 08101637-04
RunID: Q_081104C-4751422 Units: ug/L
Analysis Date: 11/04/2008 17:40 Analyst: JC

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 20 | 35 | 175 |
| 1,1,1-Trichloroethane | ND | 20 | 18.0 | 90.0 | 20 | 17.0 | 85.0 | 5.71 | 20 | 35 | 175 |
| 1,1,2,2-Tetrachloroethane | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 20 | 35 | 175 |
| 1,1,2-Trichloroethane | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 20 | 35 | 175 |
| 1,1-Dichloroethane | ND | 20 | 18.0 | 90.0 | 20 | 17.0 | 85.0 | 5.71 | 20 | 35 | 175 |
| 1,1-Dichloroethene | ND | 20 | 18.0 | 90.0 | 20 | 18.0 | 90.0 | 0 | 22 | 61 | 145 |
| 1,1-Dichloropropene | ND | 20 | 17.0 | 85.0 | 20 | 17.0 | 85.0 | 0 | 20 | 35 | 175 |
| 1,2,3-Trichlorobenzene | ND | 20 | 17.0 | 85.0 | 20 | 17.0 | 85.0 | 0 | 20 | 27 | 187 |
| 1,2,3-Trichloropropane | ND | 20 | 20.0 | 100 | 20 | 19.0 | 95.0 | 5.13 | 20 | 35 | 175 |
| 1,2,4-Trichlorobenzene | ND | 20 | 17.0 | 85.0 | 20 | 17.0 | 85.0 | 0 | 20 | 34 | 150 |
| 1,2,4-Trimethylbenzene | ND | 20 | 16.0 | 80.0 | 20 | 16.0 | 80.0 | 0 | 20 | 35 | 175 |
| 1,2-Dibromo-3-chloropropane | ND | 20 | 16.0 | 80.0 | 20 | 16.0 | 80.0 | 0 | 20 | 15 | 175 |
| 1,2-Dibromoethane | ND | 20 | 20.0 | 100 | 20 | 20.0 | 100 | 0 | 20 | 35 | 175 |
| 1,2-Dichlorobenzene | ND | 20 | 17.0 | 85.0 | 20 | 17.0 | 85.0 | 0 | 20 | 35 | 175 |
| 1,2-Dichloroethane | ND | 20 | 17.0 | 85.0 | 20 | 17.0 | 85.0 | 0 | 20 | 35 | 175 |
| 1,2-Dichloropropane | ND | 20 | 18.0 | 90.0 | 20 | 18.0 | 90.0 | 0 | 20 | 35 | 175 |
| 1,3,5-Trimethylbenzene | ND | 20 | 16.0 | 80.0 | 20 | 16.0 | 80.0 | 0 | 20 | 35 | 175 |
| 1,3-Dichlorobenzene | ND | 20 | 17.0 | 85.0 | 20 | 16.0 | 80.0 | 6.06 | 20 | 35 | 175 |
| 1,3-Dichloropropane | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 20 | 35 | 175 |
| 1,4-Dichlorobenzene | ND | 20 | 17.0 | 85.0 | 20 | 17.0 | 85.0 | 0 | 20 | 35 | 175 |
| 2,2-Dichloropropane | ND | 20 | 17.0 | 85.0 | 20 | 17.0 | 85.0 | 0 | 20 | 35 | 175 |
| 2-Butanone | ND | 20 | 25.0 | 125 | 20 | 24.0 | 120 | 4.08 | 20 | 10 | 230 |
| 2-Chloroethyl vinyl ether | ND | 20 | 0 | 0 * | 20 | 0 | 0 * | 0 | 20 | 10 | 250 |
| 2-Chlorotoluene | ND | 20 | 16.0 | 80.0 | 20 | 16.0 | 80.0 | 0 | 20 | 31 | 175 |
| 2-Hexanone | ND | 20 | 25.0 | 125 | 20 | 25.0 | 125 | 0 | 20 | 10 | 250 |
| 4-Chlorotoluene | ND | 20 | 17.0 | 85.0 | 20 | 16.0 | 80.0 | 6.06 | 20 | 31 | 175 |
| 4-Isopropyltoluene | ND | 20 | 16.0 | 80.0 | 20 | 16.0 | 80.0 | 0 | 20 | 35 | 175 |
| 4-Methyl-2-pentanone | ND | 20 | 18.0 | 90.0 | 20 | 18.0 | 90.0 | 0 | 20 | 10 | 175 |
| Acetone | ND | 100 | 140 | 140 | 100 | 140 | 140 | 0 | 20 | 10 | 400 |
| Acrylonitrile | ND | 200 | 170 | 85.0 | 200 | 170 | 85.0 | 0 | 20 | 15 | 250 |

**Qualifiers:**
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B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Volatile Organics by Method 8260B
**Method:** SW8260B
**WorkOrder:** 08101602
**Lab Batch ID:** R255960

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: 08101637-04
RunID: Q_081104C-4751422 Units: ug/L
Analysis Date: 11/04/2008 17:40 Analyst: JC

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 20 | 18.0 | 90.0 | 20 | 18.0 | 90.0 | 0 | 22 | 76 | 127 |
| Bromobenzene | ND | 20 | 17.0 | 85.0 | 20 | 16.0 | 80.0 | 6.06 | 20 | 35 | 175 |
| Bromochloromethane | ND | 20 | 18.0 | 90.0 | 20 | 18.0 | 90.0 | 0 | 20 | 35 | 175 |
| Bromodichloromethane | ND | 20 | 19.0 | 95.0 | 20 | 18.0 | 90.0 | 5.41 | 20 | 35 | 175 |
| Bromoform | ND | 20 | 20.0 | 100 | 20 | 20.0 | 100 | 0 | 20 | 35 | 175 |
| Bromomethane | ND | 20 | 19.0 | 95.0 | 20 | 18.0 | 90.0 | 5.41 | 20 | 35 | 175 |
| Carbon disulfide | ND | 20 | 17.0 | 85.0 | 20 | 16.0 | 80.0 | 6.06 | 20 | 30 | 225 |
| Carbon tetrachloride | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 20 | 35 | 175 |
| Chlorobenzene | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 21 | 70 | 130 |
| Chloroethane | ND | 20 | 16.0 | 80.0 | 20 | 16.0 | 80.0 | 0 | 20 | 35 | 175 |
| Chloroform | ND | 20 | 17.0 | 85.0 | 20 | 16.0 | 80.0 | 6.06 | 20 | 35 | 175 |
| Chloromethane | ND | 20 | 19.0 | 95.0 | 20 | 18.0 | 90.0 | 5.41 | 20 | 35 | 175 |
| Dibromochloromethane | ND | 20 | 20.0 | 100 | 20 | 20.0 | 100 | 0 | 20 | 35 | 175 |
| Dibromomethane | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 20 | 35 | 175 |
| Dichlorodifluoromethane | ND | 20 | 18.0 | 90.0 | 20 | 17.0 | 85.0 | 5.71 | 20 | 35 | 175 |
| Ethylbenzene | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 20 | 35 | 175 |
| Hexachlorobutadiene | ND | 20 | 19.0 | 95.0 | 20 | 18.0 | 90.0 | 5.41 | 20 | 43 | 144 |
| Isopropylbenzene | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 20 | 35 | 175 |
| Methyl tert-butyl ether | ND | 20 | 18.0 | 90.0 | 20 | 17.0 | 85.0 | 5.71 | 20 | 35 | 175 |
| Methylene chloride | ND | 20 | 17.0 | 85.0 | 20 | 16.0 | 80.0 | 6.06 | 20 | 35 | 175 |
| Naphthalene | ND | 20 | 16.0 | 80.0 | 20 | 16.0 | 80.0 | 0 | 20 | 20 | 210 |
| n-Butylbenzene | ND | 20 | 16.0 | 80.0 | 20 | 16.0 | 80.0 | 0 | 20 | 35 | 175 |
| n-Propylbenzene | ND | 20 | 16.0 | 80.0 | 20 | 16.0 | 80.0 | 0 | 20 | 35 | 175 |
| sec-Butylbenzene | ND | 20 | 16.0 | 80.0 | 20 | 16.0 | 80.0 | 0 | 20 | 35 | 175 |
| Styrene | ND | 20 | 19.0 | 95.0 | 20 | 18.0 | 90.0 | 5.41 | 20 | 35 | 175 |
| tert-Butylbenzene | ND | 20 | 16.0 | 80.0 | 20 | 16.0 | 80.0 | 0 | 20 | 35 | 175 |
| Tetrachloroethene | ND | 20 | 19.0 | 85.0 | 20 | 19.0 | 85.0 | 0 | 20 | 30 | 250 |
| Toluene | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 24 | 70 | 131 |
| Trichloroethene | 8.00 | 20 | 28.0 | 100 | 20 | 28.0 | 100 | 0 | 21 | 60 | 140 |
| Trichlorofluoromethane | ND | 20 | 17.0 | 85.0 | 20 | 18.0 | 90.0 | 5.71 | 20 | 17 | 250 |
| Vinyl acetate | ND | 20 | 19.0 | 95.0 | 20 | 18.0 | 90.0 | 5.41 | 20 | 10 | 250 |
| Vinyl chloride | ND | 20 | 21.0 | 105 | 20 | 20.0 | 100 | 4.88 | 20 | 35 | 175 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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## Quality Control Report

**Conoco Phillips**

**COP Johnson Fed4**

**Analysis:** Volatile Organics by Method 8260B **WorkOrder:** 08101602
**Method:** SW8260B **Lab Batch ID:** R255960

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: 08101637-04
RunID: Q_081104C-4751422 Units: ug/L
Analysis Date: 11/04/2008 17:40 Analyst: JC

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 38.0 | 20 | 59.0 | 105 | 20 | 58.0 | 100 | 1.71 | 20 | 35 | 175 |
| cis-1,3-Dichloropropene | ND | 20 | 18.0 | 90.0 | 20 | 18.0 | 90.0 | 0 | 20 | 35 | 175 |
| m,p-Xylene | ND | 40 | 38.0 | 95.0 | 40 | 37.0 | 92.5 | 2.67 | 20 | 35 | 175 |
| o-Xylene | ND | 20 | 19.0 | 95.0 | 20 | 18.0 | 90.0 | 5.41 | 20 | 35 | 175 |
| trans-1,2-Dichloroethene | ND | 20 | 20.0 | 100 | 20 | 19.0 | 95.0 | 5.13 | 20 | 35 | 175 |
| trans-1,3-Dichloropropene | ND | 20 | 18.0 | 90.0 | 20 | 18.0 | 90.0 | 0 | 20 | 35 | 175 |
| 1,2-Dichloroethene (total) | 38 | 40 | 79 | 100 | 40 | 77 | 98 | 2.6 | 20 | 35 | 175 |
| Xylenes,Total | ND | 60 | 57 | 95 | 60 | 55 | 92 | 3.6 | 20 | 35 | 175 |
| Surr: 1,2-Dichloroethane-d4 | ND | 50 | 52 | 104 | 50 | 52.0 | 104 | 0 | 30 | 62 | 130 |
| Surr: 4-Bromofluorobenzene | ND | 50 | 53 | 106 | 50 | 53.0 | 106 | 0 | 30 | 70 | 130 |
| Surr: Toluene-d8 | ND | 50 | 52 | 104 | 50 | 52.0 | 104 | 0 | 30 | 74 | 122 |

**Qualifiers:**
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits



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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Volatile Organics by Method 8260B
**Method:** SW8260B
**WorkOrder:** 08101602
**Lab Batch ID:** R256036

**Method Blank**

RunID: Q_081105A-4752966 Units: ug/L
Analysis Date: 11/05/2008 11:14 Analyst: JC
Preparation Date: 11/05/2008 11:14 Prep By: Method:

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08101602-04A | MW-1 |
| 08101602-05A | Duplicate |

| Analyte | Result | Rep Limit |
|---|---|---|
| 1,2,4-Trimethylbenzene | ND | 5.0 |
| 1,3,5-Trimethylbenzene | ND | 5.0 |
| 2-Butanone | ND | 20 |
| 2-Hexanone | ND | 10 |
| Benzene | ND | 5.0 |
| Ethylbenzene | ND | 5.0 |
| Toluene | ND | 5.0 |
| m,p-Xylene | ND | 5.0 |
| o-Xylene | ND | 5.0 |
| Xylenes,Total | ND | 5.0 |
| Surr: 1,2-Dichloroethane-d4 | 104.0 | 62-130 |
| Surr: 4-Bromofluorobenzene | 110.0 | 70-130 |
| Surr: Toluene-d8 | 108.0 | 74-122 |

**Laboratory Control Sample (LCS)**

RunID: Q_081105A-4752965 Units: ug/L
Analysis Date: 11/05/2008 10:45 Analyst: JC
Preparation Date: 11/05/2008 10:45 Prep By: Method:

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| 1,2,4-Trimethylbenzene | 20.0 | 16.0 | 80.0 | 53 | 147 |
| 1,3,5-Trimethylbenzene | 20.0 | 16.0 | 80.0 | 57 | 146 |
| 2-Butanone | 120 | 110 | 91.7 | 20 | 235 |
| 2-Hexanone | 20.0 | 20.0 | 100 | 34 | 182 |
| Benzene | 20.0 | 18.0 | 90.0 | 76 | 126 |
| Ethylbenzene | 20.0 | 19.0 | 95.0 | 67 | 122 |
| Toluene | 20.0 | 19.0 | 95.0 | 70 | 131 |
| m,p-Xylene | 40.0 | 38.0 | 95.0 | 72 | 150 |
| o-Xylene | 20.0 | 19.0 | 95.0 | 78 | 141 |
| Xylenes,Total | 60 | 57 | 95 | 72 | 150 |
| Surr: 1,2-Dichloroethane-d4 | 50.0 | 53 | 106 | 62 | 130 |
| Surr: 4-Bromofluorobenzene | 50.0 | 54 | 108 | 70 | 130 |
| Surr: Toluene-d8 | 50.0 | 52 | 104 | 74 | 122 |

**Qualifiers:**

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B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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## Quality Control Report

**Conoco Phillips**
**COP Johnson Fed4**

**Analysis:** Volatile Organics by Method 8260B
**Method:** SW8260B
**WorkOrder:** 08101602
**Lab Batch ID:** R256036

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: 08110138-02
RunID: Q_081105A-4752968 Units: ug/L
Analysis Date: 11/05/2008 13:11 Analyst: JC

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trimethylbenzene | ND | 20 | 16.0 | 80.0 | 20 | 15.0 | 75.0 | 6.45 | 20 | 35 | 175 |
| 1,3,5-Trimethylbenzene | ND | 20 | 16.0 | 80.0 | 20 | 15.0 | 75.0 | 6.45 | 20 | 35 | 175 |
| 2-Butanone | ND | 20 | 34.0 | 170 | 20 | 28.0 | 140 | 19.4 | 20 | 10 | 230 |
| 2-Hexanone | ND | 20 | 29.0 | 145 | 20 | 27.0 | 135 | 7.14 | 20 | 10 | 250 |
| Benzene | ND | 20 | 19.0 | 91.0 | 20 | 18.0 | 86.0 | 5.41 | 22 | 76 | 127 |
| Ethylbenzene | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 20 | 35 | 175 |
| Toluene | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 24 | 70 | 131 |
| m,p-Xylene | ND | 40 | 39.0 | 97.5 | 40 | 38.0 | 95.0 | 2.60 | 20 | 35 | 175 |
| o-Xylene | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 20 | 35 | 175 |
| Xylenes,Total | ND | 60 | 58 | 97 | 60 | 57 | 95 | 1.7 | 20 | 35 | 175 |
| Surr: 1,2-Dichloroethane-d4 | ND | 50 | 52 | 104 | 50 | 51.0 | 102 | 1.94 | 30 | 62 | 130 |
| Surr: 4-Bromofluorobenzene | ND | 50 | 53 | 106 | 50 | 53.0 | 106 | 0 | 30 | 70 | 130 |
| Surr: Toluene-d8 | ND | 50 | 53 | 106 | 50 | 53.0 | 106 | 0 | 30 | 74 | 122 |

**Qualifiers:**
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Nitrate Nitrogen (as N), Total **WorkOrder:** 08101602
**Method:** E353.2 **Lab Batch ID:** R256285

### Method Blank

RunID: WET_081103ZD-4757587 Units: mg/L
Analysis Date: 11/03/2008 15:17 Analyst: TW

| Analyte | Result | Rep Limit |
|---|---|---|
| Nitrogen,Nitrate (As N) | ND | 0.50 |

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08101602-01E | MW-2 |
| 08101602-02E | MW-3 |
| 08101602-03E | MW-4 |

### Laboratory Control Sample (LCS)

RunID: WET_081103ZD-4757590 Units: mg/L
Analysis Date: 11/03/2008 15:17 Analyst: TW

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Nitrogen,Nitrate (As N) | 5.000 | 5.372 | 107.4 | 90 | 110 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08101597-01
RunID: WET_081103ZD-4757595 Units: mg/L
Analysis Date: 11/03/2008 15:17 Analyst: TW

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen,Nitrate (As N) | ND | 5 | 4.895 | 89.96 * | 5 | 4.942 | 90.90 | 0.9576 | 20 | 90 | 110 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits



QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
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HOUSTON, TX 77054
(713) 660-0901

# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Ion Chromatography **WorkOrder:** 08101602
**Method:** E300.0 **Lab Batch ID:** R256813A

### Method Blank

RunID: IC1_081110B-4766069 Units: mg/L
Analysis Date: 11/10/2008 16:35 Analyst: TW

| Analyte | Result | Rep Limit |
|---|---|---|
| Chloride | ND | 0.50 |
| Fluoride | ND | 0.50 |

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08101602-01E | MW-2 |
| 08101602-02E | MW-3 |
| 08101602-03E | MW-4 |

### Laboratory Control Sample (LCS)

RunID: IC1_081110B-4766017 Units: mg/L
Analysis Date: 11/10/2008 16:51 Analyst: TW

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Chloride | 10.00 | 9.409 | 94.09 | 85 | 115 |
| Fluoride | 10.00 | 10.03 | 100.3 | 85 | 115 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08101597-01
RunID: IC1_081110B-4766020 Units: mg/L
Analysis Date: 11/10/2008 18:20 Analyst: TW

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 18.90 | 40 | 58.79 | 99.73 | 40 | 56.56 | 94.14 | 3.874 | 20 | 80 | 120 |
| Fluoride | ND | 40 | 40.16 | 98.60 | 40 | 38.85 | 95.32 | 3.324 | 20 | 80 | 120 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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(713) 660-0901

# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Ion Chromatography
**Method:** E300.0

**WorkOrder:** 08101602
**Lab Batch ID:** R256827

### Method Blank

RunID: IC1_081111A-4766432 Units: mg/L
Analysis Date: 11/11/2008 10:53 Analyst: TW

| Analyte | Result | Rep Limit |
|---|---|---|
| Sulfate | ND | 0.50 |

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08101602-01E | MW-2 |
| 08101602-02E | MW-3 |
| 08101602-03E | MW-4 |

### Laboratory Control Sample (LCS)

RunID: IC1_081111A-4766433 Units: mg/L
Analysis Date: 11/11/2008 11:10 Analyst: TW

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Sulfate | 10.00 | 9.448 | 94.48 | 85 | 115 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08101597-01
RunID: IC1_081111A-4766437 Units: mg/L
Analysis Date: 11/11/2008 12:16 Analyst: TW

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 1482 | 1000 | 2451 | 96.96 | 1000 | 2461 | 97.94 | 0.4013 | 20 | 80 | 120 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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# Quality Control Report

## Conoco Phillips

**COP Johnson Fed4**

**Analysis:** Ion Chromatography **WorkOrder:** 08101602
**Method:** E300.0 **Lab Batch ID:** R257651A

### Method Blank

RunID: IC1_081119A-4780752 Units: mg/L
Analysis Date: 11/19/2008 18:44 Analyst: TW

| Analyte | Result | Rep Limit |
|---|---|---|
| Ortho-phosphate (As P) | ND | 0.50 |

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 08101602-01E | MW-2 |
| 08101602-02E | MW-3 |
| 08101602-03E | MW-4 |

### Laboratory Control Sample (LCS)

RunID: IC1_081119A-4780753 Units: mg/L
Analysis Date: 11/19/2008 19:01 Analyst: TW

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Ortho-phosphate (As P) | 10.00 | 9.167 | 91.67 | 85 | 115 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08101597-01
RunID: IC1_081119A-4780767 Units: mg/L
Analysis Date: 11/20/2008 5:09 Analyst: TW

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ortho-phosphate (As P) | ND | 100 | 101.9 | 101.9 | 100 | 100.9 | 100.9 | 0.9614 | 20 | 80 | 120 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

# *Sample Receipt Checklist*

# *And*

# *Chain of Custody*

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
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(713) 660-0901

# Sample Receipt Checklist

| | | | |
|---|---|---|---|
| Workorder: | **08101602** | Received By: | **RE** |
| Date and Time Received: | **10/28/2008 9:30:00 AM** | Carrier name: | **Fedex-Standard Overnight** |
| Temperature: | **4.0°C** | Chilled by: | **Water Ice** |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1. | **Shipping container/cooler in good condition?** | Yes | ☑ | No | ☐ | Not Present ☐ |
| 2. | **Custody seals intact on shippping container/cooler?** | Yes | ☐ | No | ☐ | Not Present ☑ |
| 3. | **Custody seals intact on sample bottles?** | Yes | ☐ | No | ☐ | Not Present ☑ |
| 4. | **Chain of custody present?** | Yes | ☑ | No | ☐ | |
| 5. | **Chain of custody signed when relinquished and received?** | Yes | ☑ | No | ☐ | |
| 6. | **Chain of custody agrees with sample labels?** 1.Received 1-set of blanks ID "Temp Blank" on chain. | Yes | ☐ | No | ☑ | |
| 7. | **Samples in proper container/bottle?** | Yes | ☑ | No | ☐ | |
| 8. | **Sample containers intact?** | Yes | ☑ | No | ☐ | |
| 9. | **Sufficient sample volume for indicated test?** | Yes | ☑ | No | ☐ | |
| 10. | **All samples received within holding time?** 2.Received all Nitrates and Ortho-PO4 expired collected on 10/24/08. | Yes | ☐ | No | ☑ | |
| 11. | **Container/Temp Blank temperature in compliance?** | Yes | ☑ | No | ☐ | |
| 12. | **Water - VOA vials have zero headspace?** | Yes | ☑ | No | ☐ | VOA Vials Not Present ☐ |
| 13. | **Water - Preservation checked upon receipt (except VOA*)?** | Yes | ☑ | No | ☐ | Not Applicable ☐ |

***VOA Preservation Checked After Sample Analysis**

**SPL Representative:** _____ **Contact Date & Time:** _____

**Client Name Contacted:** _____

**Non Conformance Issues:** 1.Sample ID on container is "Trip Blank"2.Continue with Nitrate and Ortho-PO4 per historicals..

**Client Instructions:** _____

# Chain of Custody Record

**Client:** Tetra Tech/ Conoco Phillips — **SPL Workorder Number:** 08101602

**Attention:** Kelly Blanchard/Tetra Tech

Phone: 505-237-8440 | email: kelly.blanchard@tetratech.c

Address: 6121 Indian School Road, NE Ste. 200

City: Albuquerque | State: NM | Zip Code: 87110

Project Name: ~~El Paso TA~~ Johnston Fed 4

P.O. Number:

Sampled By: signature: Christine Matthews | print: Christine Matthews

| Sample ID | Collected Date | Collected Time | Sample Type Comp | Sample Type Grab | Matrix Water | Matrix Soil | Bottle Type | Preservative Type | # of Containers | 8260-BTEX | 8015-GRO | 8015-DRO | 8260-VOC | 8270-SVOC | Tot.Metals&Hg-6010/7470 | Tot.Metals-6020/7471 | Anions Gen Chem |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-2 | 10/24 | 1235 | | X | X | | 1 | 3 | 3 | | | | X | | | | |
| MW-2 | 10/24 | 1235 | | X | X | | 1 | 3 | 3 | | X | | | | | | |
| MW-2 | 10/24 | 1235 | | X | X | | 4 | 1 | 1 | | | | | X | | | |
| MW-2 | 10/24 | 1235 | | X | X | | 4 | 3 | 1 | | | X | | | | | |
| MW-2 | 10/24 | 1235 | | X | X | | 3 | 2 | 1 | | | | | | X | X | |
| MW-2 | 10/24 | 1235 | | X | X | | 3 | 1 | 2 | | | | | | | | X |
| MW-3 | 10/24 | 1315 | | X | X | | 1 | 3 | 3 | | | | X | | | | |
| MW-3 | 10/24 | 1315 | | X | X | | 1 | 3 | 3 | | X | | | | | | |
| MW-3 | 10/24 | 1315 | | X | X | | 4 | 1 | 1 | | | | | X | | | |
| MW-3 | 10/24 | 1315 | | X | X | | 4 | 3 | 1 | | | X | | | | | |

**Turnaround Time Requirements:** 24 hr( ) 48 hr( ) 72 hr( ) 5 w/day( ) 10 w/day - Standard( )

**Remarks:** Anions=Fl,Cl,N,PO4,SO4

Anions = Gen Chem

**Intact?** Y or N

**Temperature:** 4.0 °C

**Bottle Types:** 1: 3/40ml Vials 2. 1L Glass 3. 1L Plastic 4. 1L Amber Glass 5. 8oz Plastic

**Preservative Types:** 1: NONE 2. HNO3 3. HCL 4. H2SO4

| | Date | Time | |
|---|---|---|---|
| Relinquished by Sampler: Christine Matthews | 10/27/08 | 1500 | Received by: |
| Relinquished by: | Date | Time | Received by: |
| Relinquished by: | Date 10/28/08 | Time 0930 | Received by SPL Inc: |

Page ___ of ___

# SPL, Inc.

## Analysis Request & Chain of Custody Record

SPL Workorder No.: 08101602 — 320232 — page ____ of ____

Client Name: Tetra Tech / ConocoPhillips
Address: 6121 Indian School Rd Ste 200
Phone/Fax: 505-237-8440
Client Contact: Kelly Blanchard Email: Kelly.blanchard@tetratech.com
Project Name/No.:
Site Name: Johnston Fed 4
Site Location: Farmington / Aztec
Invoice To: Conoco Phillips Ph:

| SAMPLE ID | DATE | TIME | comp | grab | matrix: W=water S=soil O=oil SL=sludge X=other | bottle: P=plastic A=amber glass G=glass V=vial X=other | size: 1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other | pres: 1=HCl 2=HNO3 3=H2SO4 X=other Ø=None | Number of Containers | Requested Analysis: Tot Metals 6010 7470 | Tot Metals 6020 7471 | GenChem | 8260-VOCs | 8015-GRO | 8015-DRO | 8270-SVOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-3 | 10/24 | 1315 | | | | P | 1 | Ø | 2 | | | X | | | | |
| MW-3 | 10/24 | 1315 | | X | W | P | 1 | 1 | 1 | X | X | | | | | |
| MW-4 | 10/24 | 1445 | | X | W | P | 1 | Ø | 2 | | | X | | | | |
| MW-4 | 10/24 | 1445 | | X | W | V | 40 | 1 | 3 | | | | X | | | |
| MW-4 | 10/24 | 1445 | | X | W | V | 40 | 1 | 3 | | | | | X | | |
| MW-4 | 10/24 | 1445 | | X | W | A | 1 | 1 | 1 | | | | | | X | |
| MW-4 | 10/24 | 1445 | | X | W | A | 1 | Ø | 1 | | | | | | | X |
| MW-4 | 10/24 | 1445 | | X | W | ~~P~~ V | 1 | Ø | 2 | X | X | | | | | |
| MW-1 | 10/24 | 1450 | | X | W | V | 40 | 1 | 3 | | | | X | | | |
| Duplicate | 10/24 | 1500 | | X | W | V | 40 | 1 | 3 | | | | | | | |

Client/Consultant Remarks: Ca, Na, Mg, Cl, SO4
GenChem = ~~Ca, Na, Mg, Cl, SO4~~

Laboratory remarks:

Intact? ☐ Y ☐ N
Ice? ☐ Y ☐ N
Temp: 4.2

**Requested TAT**

Contract ☐ 72hr ☐ 24hr ☐ Standard ☐ 48hr ☐ Other ☐ _____

Special Reporting Requirements Results: Fax ☐ Email ☐ PDF ☐
Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial):

| | date | time | | date | time |
|---|---|---|---|---|---|
| 1. Relinquished by Sampler: [illegible] | 10/27/08 | 1500 | 2. Received by: | | |
| 3. Relinquished by: | | | 4. Received by: | | |
| 5. Relinquished by: | 10/28/08 | 0930 | 6. Received by Laboratory: | | |

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

# SPL, Inc.

## Analysis Request & Chain of Custody Record

SPL Workorder No.: 08101602 — 320233 — page ____ of ____

Client Name: Tetra Tech/ ConocoPhillips
Address: 6121 Indian School Rd NE Ste 200
Phone/Fax: 505-237-8440
Client Contact: Kelly Blanchard Email: kelly.blanchard@tetratech.com
Project Name/No.:
Site Name: Johnston Fed #4
Site Location: Farmington/ Aztec
Invoice To: Ph:

| SAMPLE ID | DATE | TIME | comp | grab | matrix (W=water S=soil O=oil SL=sludge X=other) | bottle (P=plastic A=amber glass G=glass V=vial X=other) | size (1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other) | pres. (1=HCl 2=HNO3 3=H2SO4 X=other) | Number of Containers | Requested Analysis |
|---|---|---|---|---|---|---|---|---|---|---|
| Temp Blank | 10/27/08 | 1430 | | | W | V | 40 | 1 | 3 | |

Client/Consultant Remarks:

Laboratory remarks:

Intact? ☐ Y ☐ N
Ice? ☐ Y ☐ N
Temp: 4.0c

### Requested TAT

Contract ☐ 72hr ☐
24hr ☐ Standard ☐
48hr ☐
Other ☐ _____

Special Reporting Requirements Results: Fax ☐ Email ☐ PDF ☐
Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial):

| | date | time | |
|---|---|---|---|
| 1. Relinquished by Sampler: | 10/27/08 | 1500 | 2. Received by: |
| 3. Relinquished by: | date | time | 4. Received by: |
| 5. Relinquished by: | date 10/28/08 | time 0930 | 6. Received by Laboratory: |

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☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

## Conoco Phillips

**Certificate of Analysis Number:**

**09020023**

| Report To: | | Project Name: | COP Johnston Federal #4 |
|---|---|---|---|
| Tetra Tech, Inc. | | Site: | San Juan County, NM |
| Kelly Blanchard | | Site Address: | San Juan County near Aztec, NM |
| 6121 Indian School Road, N.E. | | | |
| Suite 200 | | PO Number: | 4510016699 |
| Albuquerque | | State: | New Mexico |
| NM | | State Cert. No.: | |
| 87110- | | Date Reported: | 2/17/2009 |
| ph: (505) 237-8440 fax: | | | |

This Report Contains A Total Of 42 Pages

Excluding This Page, Chain Of Custody

And

Any Attachments

2/19/2009

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

## Case Narrative for:
## Conoco Phillips

### Certificate of Analysis Number:
### 09020023

| Report To: | | Project Name: | COP Johnston Federal #4 |
|---|---|---|---|
| Tetra Tech, Inc. | | Site: | San Juan County, NM |
| Kelly Blanchard | | Site Address: | San Juan County near Aztec, NM |
| 6121 Indian School Road, N.E. | | | |
| Suite 200 | | PO Number: | 4510016699 |
| Albuquerque | | State: | New Mexico |
| NM | | State Cert. No.: | |
| 87110- | | Date Reported: | 2/17/2009 |
| ph: (505) 237-8440 | fax: | | |

Upon receipt of your samples, the lab received the Nitrate analysis outside of the holding time. SPL proceeded with the analysis. The lab did not receive your sample "Trip Blank" as listed on the chain of custody. In addition, the lab received 1 vial broken for your sample ID "MW-2", however, enough sample remains to perform the analysis requested.

Per the Conoco Phillips TSM Revision 0, a copy of the internal chain of custody is to be included in final data package. However, due to LIMS limitations, this cannot be provided at this time.

For Volatile Organics analysis (8260B), the results for 2-chloroethyl vinyl ether are estimated due to sample preservation. The result for this compound is reported as "ND J" for all samples in the report.

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Due to limited sample volume, a Matrix Spike (MS) or Matrix Spike Duplicate (MSD) was not extracted with Batch ID: 87691 for the Diesel Range Organics analysis by Method 8015. A Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) were extracted with the analytical batch and serve as the batch quality control (QC). The LCS and LCSD recovered acceptably and precision criteria were met.

Due to limited sample volume, a Matrix Spike (MS) or Matrix Spike Duplicate (MSD) was not extracted with Batch ID: 87647 for the Semivolatile Organics analysis by Method 8270. A Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) were extracted with the analytical batch and serve as the batch quality control (QC). The LCS and LCSD recovered acceptably and precision criteria were met.

Some of the percent recoveries and RPD's on the QC report for the MS/MSD may be different than the calculated recoveries and RPD's using the sample result and the MS/MSD results that appear on the report because, the actual raw result is used to perform the calculations for percent recovery and RPD.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.



Erica Cardenas
Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

# Conoco Phillips

## Certificate of Analysis Number:

## 09020023

**Report To:** Tetra Tech, Inc.
Kelly Blanchard
6121 Indian School Road, N.E.
Suite 200
Albuquerque
NM
87110-
ph: (505) 237-8440 fax: (505) 881-3283

**Fax To:**

**Project Name:** COP Johnston Federal #4
**Site:** San Juan County, NM
**Site Address:** San Juan County near Aztec, NM

**PO Number:** 4510016699
**State:** New Mexico
**State Cert. No.:**
**Date Reported:** 2/17/2009

| Client Sample ID | Lab Sample ID | Matrix | Date Collected | Date Received | COC ID | HOLD |
|---|---|---|---|---|---|---|
| MW-1 | 09020023-01 | Water | 1/29/2009 10:50:00 AM | 1/31/2009 11:00:00 AM | | ☐ |
| MW-2 | 09020023-02 | Water | 1/29/2009 10:15:00 AM | 1/31/2009 11:00:00 AM | | ☐ |
| MW-3 | 09020023-03 | Water | 1/29/2009 10:30:00 AM | 1/31/2009 11:00:00 AM | | ☐ |
| MW-4 | 09020023-04 | Water | 1/29/2009 11:05:00 AM | 1/31/2009 11:00:00 AM | | ☐ |
| DUPLICATE | 09020023-05 | Water | 1/29/2009 11:10:00 AM | 1/31/2009 11:00:00 AM | | ☐ |
| TRIP BLANK | 09020023-06 | Water | 1/30/2009 2:30:00 PM | 1/31/2009 11:00:00 AM | | ☑ |

E Cardenas

2/19/2009

Erica Cardenas
Project Manager

Date

Richard R. Reed
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-1 **Collected:** 01/29/2009 10:50 **SPL Sample ID:** 09020023-01

**Site:** San Juan County, NM

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **DIESEL RANGE ORGANICS** | | | **MCL** | **SW8015B** | **Units: mg/L** | | |
| Diesel Range Organics | 24 | | 0.5 | 10 | 02/11/09 14:47 | NW | 4903702 |
| Surr: n-Pentacosane | 137 | | % 20-150 | 10 | 02/11/09 14:47 | NW | 4903702 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3510C | 02/05/2009 7:19 | N_M | 1.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **GASOLINE RANGE ORGANICS** | | | **MCL** | **SW8015B** | **Units: mg/L** | | |
| Gasoline Range Organics | 26 | | 10 | 100 | 02/12/09 6:23 | CLJ | 4905298 |
| Surr: 1,4-Difluorobenzene | 104 | | % 60-155 | 100 | 02/12/09 6:23 | CLJ | 4905298 |
| Surr: 4-Bromofluorobenzene | 102 | | % 50-158 | 100 | 02/12/09 6:23 | CLJ | 4905298 |
| **ION CHROMATOGRAPHY** | | | **MCL** | **E300.0** | **Units: mg/L** | | |
| Sulfate | 315 | | 25 | 50 | 02/10/09 0:03 | BDG | 4901087 |
| Nitrogen,Nitrate (As N) | ND | | 0.5 | 1 | 02/03/09 17:52 | BDG | 4897225 |
| **METALS BY METHOD 6010B, TOTAL** | | | **MCL** | **SW6010B** | **Units: mg/L** | | |
| Aluminum | 0.109 | | 0.1 | 1 | 02/11/09 15:57 | S_C | 4903761 |
| Boron | ND | | 0.1 | 1 | 02/11/09 15:57 | S_C | 4903761 |
| Calcium | 321 | | 0.1 | 1 | 02/11/09 15:57 | S_C | 4903761 |
| Iron | 0.347 | | 0.02 | 1 | 02/11/09 15:57 | S_C | 4903761 |
| Magnesium | 70 | | 0.1 | 1 | 02/11/09 15:57 | S_C | 4903761 |
| Manganese | 1.1 | | 0.005 | 1 | 02/11/09 15:57 | S_C | 4903761 |
| Potassium | ND | | 2 | 1 | 02/11/09 15:57 | S_C | 4903761 |
| Sodium | 123 | | 0.5 | 1 | 02/11/09 15:57 | S_C | 4903761 |
| Strontium | 5.53 | | 0.02 | 1 | 02/11/09 15:57 | S_C | 4903761 |
| Tin | ND | | 0.05 | 1 | 02/11/09 15:57 | S_C | 4903761 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3010A | 02/05/2009 9:00 | AB1 | 1.00 |

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* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
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D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-1 **Collected:** 01/29/2009 10:50 **SPL Sample ID:** 09020023-01

**Site: San Juan County, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **METALS BY METHOD 6020A, TOTAL** | | | | **MCL** | **SW6020A** | **Units: mg/L** | |
| Antimony | ND | | 0.005 | 1 | 02/13/09 22:40 | AL_H | 4907560 |
| Arsenic | ND | | 0.005 | 1 | 02/13/09 23:41 | AL_H | 4907320 |
| Barium | 0.438 | | 0.005 | 1 | 02/13/09 23:41 | AL_H | 4907320 |
| Beryllium | ND | | 0.004 | 1 | 02/13/09 23:41 | AL_H | 4907320 |
| Cadmium | ND | | 0.005 | 1 | 02/13/09 23:41 | AL_H | 4907320 |
| Chromium | ND | | 0.005 | 1 | 02/13/09 23:41 | AL_H | 4907320 |
| Cobalt | ND | | 0.005 | 1 | 02/13/09 23:41 | AL_H | 4907320 |
| Copper | ND | | 0.005 | 1 | 02/13/09 23:41 | AL_H | 4907320 |
| Lead | ND | | 0.005 | 1 | 02/13/09 23:41 | AL_H | 4907320 |
| Molybdenum | ND | | 0.01 | 1 | 02/13/09 23:41 | AL_H | 4907320 |
| Nickel | 0.00831 | | 0.005 | 1 | 02/13/09 22:40 | AL_H | 4907560 |
| Selenium | ND | | 0.005 | 1 | 02/14/09 15:53 | AL_H | 4908362 |
| Silver | ND | | 0.005 | 1 | 02/13/09 22:40 | AL_H | 4907560 |
| Thallium | ND | | 0.005 | 1 | 02/13/09 23:41 | AL_H | 4907320 |
| Vanadium | ND | | 0.005 | 1 | 02/13/09 23:41 | AL_H | 4907320 |
| Zinc | 0.0236 | | 0.01 | 1 | 02/13/09 23:41 | AL_H | 4907320 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3010A | 02/05/2009 9:00 | AB1 | 1.00 |

**Qualifiers:**

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-1 **Collected:** 01/29/2009 10:50 **SPL Sample ID:** 09020023-01

**Site:** San Juan County, NM

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **SEMIVOLATILE ORGANICS BY METHOD 8270C** | | | **MCL** | **SW8270C** | **Units: ug/L** | | |
| 1,2,4-Trichlorobenzene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 1,2-Dichlorobenzene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 1,2-Diphenylhydrazine | ND | | 40 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 1,3-Dichlorobenzene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 1,4-Dichlorobenzene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 2,4,5-Trichlorophenol | ND | | 40 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 2,4,6-Trichlorophenol | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 2,4-Dichlorophenol | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 2,4-Dimethylphenol | 64 | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 2,4-Dinitrophenol | ND | | 100 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 2,4-Dinitrotoluene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 2,6-Dinitrotoluene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 2-Chloronaphthalene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 2-Chlorophenol | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 2-Methylnaphthalene | 28 | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 2-Nitroaniline | ND | | 100 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 2-Nitrophenol | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 3,3'-Dichlorobenzidine | ND | | 40 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 3-Nitroaniline | ND | | 100 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 4,6-Dinitro-2-methylphenol | ND | | 100 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 4-Bromophenyl phenyl ether | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 4-Chloro-3-methylphenol | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 4-Chloroaniline | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 4-Chlorophenyl phenyl ether | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 4-Nitroaniline | ND | | 100 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 4-Nitrophenol | ND | | 100 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Acenaphthene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Acenaphthylene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Aniline | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Anthracene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Benz(a)anthracene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Benzo(a)pyrene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Benzo(b)fluoranthene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Benzo(g,h,i)perylene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Benzo(k)fluoranthene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Benzoic acid | ND | | 100 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Benzyl alcohol | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Bis(2-chloroethoxy)methane | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Bis(2-chloroethyl)ether | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-1 **Collected:** 01/29/2009 10:50 **SPL Sample ID:** 09020023-01

**Site:** San Juan County, NM

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| Bis(2-chloroisopropyl)ether | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Bis(2-ethylhexyl)phthalate | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Butyl benzyl phthalate | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Carbazole | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Chrysene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Dibenz(a,h)anthracene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Dibenzofuran | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Diethyl phthalate | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Dimethyl phthalate | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Di-n-butyl phthalate | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Di-n-octyl phthalate | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Fluoranthene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Fluorene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Hexachlorobenzene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Hexachlorobutadiene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Hexachlorocyclopentadiene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Hexachloroethane | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Indeno(1,2,3-cd)pyrene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Isophorone | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Naphthalene | 45 | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Nitrobenzene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| N-Nitrosodi-n-propylamine | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| N-Nitrosodiphenylamine | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Pentachlorophenol | ND | | 100 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Phenanthrene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Phenol | 79 | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Pyrene | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Pyridine | ND | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 2-Methylphenol | 80 | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| 3 & 4-Methylphenol | 280 | | 20 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Surr: 2,4,6-Tribromophenol | 82.7 | | % 10-123 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Surr: 2-Fluorobiphenyl | 62.0 | | % 23-116 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Surr: 2-Fluorophenol | 57.3 | | % 16-110 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Surr: Nitrobenzene-d5 | 74.0 | | % 21-114 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Surr: Phenol-d5 | 52.0 | | % 10-110 | 4 | 02/06/09 12:36 | GQ | 4896678 |
| Surr: Terphenyl-d14 | 62.0 | | % 22-141 | 4 | 02/06/09 12:36 | GQ | 4896678 |

| Prep Method | Prep Date | Prep Initials | Prep Factor |
|---|---|---|---|
| SW3510C | 02/04/2009 9:25 | N_M | 1.00 |

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-1 **Collected:** 01/29/2009 10:50 **SPL Sample ID:** 09020023-01

**Site:** San Juan County, NM

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANICS BY METHOD 8260B** | | | **MCL** | **SW8260B** | **Units: ug/L** | | |
| 1,1,1,2-Tetrachloroethane | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 1,1,1-Trichloroethane | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 1,1,2,2-Tetrachloroethane | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 1,1,2-Trichloroethane | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 1,1-Dichloroethane | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 1,1-Dichloroethene | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 1,1-Dichloropropene | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 1,2,3-Trichlorobenzene | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 1,2,3-Trichloropropane | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 1,2,4-Trichlorobenzene | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 1,2,4-Trimethylbenzene | 1100 | | 500 | 100 | 02/09/09 14:09 | LT | 4900543 |
| 1,2-Dibromo-3-chloropropane | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 1,2-Dibromoethane | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 1,2-Dichlorobenzene | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 1,2-Dichloroethane | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 1,2-Dichloropropane | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 1,3,5-Trimethylbenzene | 670 | | 500 | 100 | 02/09/09 14:09 | LT | 4900543 |
| 1,3-Dichlorobenzene | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 1,3-Dichloropropane | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 1,4-Dichlorobenzene | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 2,2-Dichloropropane | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 2-Butanone | 190 | | 20 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 2-Chloroethyl vinyl ether | ND J | | 10 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 2-Chlorotoluene | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 2-Hexanone | 250 J | | 1000 | 100 | 02/09/09 14:09 | LT | 4900543 |
| 4-Chlorotoluene | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 4-Isopropyltoluene | 15 | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 4-Methyl-2-pentanone | 110 | | 10 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Acetone | 430 | | 20 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Acrylonitrile | ND | | 50 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Benzene | 6700 | | 500 | 100 | 02/09/09 14:09 | LT | 4900543 |
| Bromobenzene | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Bromochloromethane | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Bromodichloromethane | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Bromoform | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Bromomethane | ND | | 10 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Carbon disulfide | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Carbon tetrachloride | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Chlorobenzene | ND | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |

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8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-1 **Collected:** 01/29/2009 10:50 **SPL Sample ID:** 09020023-01

**Site: San Juan County, NM**

| Analyses/Method | Result | QUAL | | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|---|
| Chloroethane | ND | | | 10 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Chloroform | ND | | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Chloromethane | ND | | | 10 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Dibromochloromethane | ND | | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Dibromomethane | ND | | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Dichlorodifluoromethane | ND | | | 10 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Ethylbenzene | 630 | | | 500 | 100 | 02/09/09 14:09 | LT | 4900543 |
| Hexachlorobutadiene | ND | | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Isopropylbenzene | 35 | | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Methyl tert-butyl ether | ND | | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Methylene chloride | ND | | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Naphthalene | 61 | | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| n-Butylbenzene | ND | | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| n-Propylbenzene | 29 | | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| sec-Butylbenzene | 10 | | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Styrene | ND | | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| tert-Butylbenzene | 16 | | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Tetrachloroethene | ND | | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Toluene | 2200 | | | 500 | 100 | 02/09/09 14:09 | LT | 4900543 |
| Trichloroethene | ND | | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Trichlorofluoromethane | ND | | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Vinyl acetate | ND | | | 10 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Vinyl chloride | ND | | | 2 | 1 | 02/06/09 21:39 | LT | 4899309 |
| cis-1,2-Dichloroethene | ND | | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| cis-1,3-Dichloropropene | ND | | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| m,p-Xylene | 12000 | | | 500 | 100 | 02/09/09 14:09 | LT | 4900543 |
| o-Xylene | 2500 | | | 500 | 100 | 02/09/09 14:09 | LT | 4900543 |
| trans-1,2-Dichloroethene | ND | | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| trans-1,3-Dichloropropene | ND | | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| 1,2-Dichloroethene (total) | ND | | | 5 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Xylenes,Total | 14500 | | | 500 | 100 | 02/09/09 14:09 | LT | 4900543 |
| Surr: 1,2-Dichloroethane-d4 | 82.0 | | % | 62-130 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Surr: 1,2-Dichloroethane-d4 | 94.0 | | % | 62-130 | 100 | 02/09/09 14:09 | LT | 4900543 |
| Surr: 4-Bromofluorobenzene | 92.0 | | % | 70-130 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Surr: 4-Bromofluorobenzene | 108 | | % | 70-130 | 100 | 02/09/09 14:09 | LT | 4900543 |
| Surr: Toluene-d8 | 110 | | % | 74-122 | 1 | 02/06/09 21:39 | LT | 4899309 |
| Surr: Toluene-d8 | 102 | | % | 74-122 | 100 | 02/09/09 14:09 | LT | 4900543 |

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-2 **Collected:** 01/29/2009 10:15 **SPL Sample ID:** 09020023-02

**Site: San Juan County, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANICS BY METHOD 8260B** | | | **MCL** | **SW8260B** | **Units: ug/L** | | |
| 1,1,1,2-Tetrachloroethane | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 1,1,1-Trichloroethane | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 1,1,2,2-Tetrachloroethane | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 1,1,2-Trichloroethane | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 1,1-Dichloroethane | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 1,1-Dichloroethene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 1,1-Dichloropropene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 1,2,3-Trichlorobenzene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 1,2,3-Trichloropropane | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 1,2,4-Trichlorobenzene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 1,2,4-Trimethylbenzene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 1,2-Dibromo-3-chloropropane | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 1,2-Dibromoethane | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 1,2-Dichlorobenzene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 1,2-Dichloroethane | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 1,2-Dichloropropane | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 1,3,5-Trimethylbenzene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 1,3-Dichlorobenzene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 1,3-Dichloropropane | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 1,4-Dichlorobenzene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 2,2-Dichloropropane | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 2-Butanone | ND | | 20 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 2-Chloroethyl vinyl ether | ND | J | 10 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 2-Chlorotoluene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 2-Hexanone | ND | | 10 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 4-Chlorotoluene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 4-Isopropyltoluene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 4-Methyl-2-pentanone | ND | | 10 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Acetone | ND | | 20 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Acrylonitrile | ND | | 50 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Benzene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Bromobenzene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Bromochloromethane | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Bromodichloromethane | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Bromoform | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Bromomethane | ND | | 10 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Carbon disulfide | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Carbon tetrachloride | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Chlorobenzene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-2 **Collected:** 01/29/2009 10:15 **SPL Sample ID:** 09020023-02

**Site: San Juan County, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| Chloroethane | ND | | 10 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Chloroform | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Chloromethane | ND | | 10 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Dibromochloromethane | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Dibromomethane | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Dichlorodifluoromethane | ND | | 10 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Ethylbenzene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Hexachlorobutadiene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Isopropylbenzene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Methyl tert-butyl ether | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Methylene chloride | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Naphthalene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| n-Butylbenzene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| n-Propylbenzene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| sec-Butylbenzene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Styrene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| tert-Butylbenzene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Tetrachloroethene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Toluene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Trichloroethene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Trichlorofluoromethane | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Vinyl acetate | ND | | 10 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Vinyl chloride | ND | | 2 | 1 | 02/06/09 22:36 | LT | 4899311 |
| cis-1,2-Dichloroethene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| cis-1,3-Dichloropropene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| m,p-Xylene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| o-Xylene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| trans-1,2-Dichloroethene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| trans-1,3-Dichloropropene | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| 1,2-Dichloroethene (total) | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Xylenes,Total | ND | | 5 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Surr: 1,2-Dichloroethane-d4 | 98.0 | | % 62-130 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Surr: 4-Bromofluorobenzene | 98.0 | | % 70-130 | 1 | 02/06/09 22:36 | LT | 4899311 |
| Surr: Toluene-d8 | 102 | | % 74-122 | 1 | 02/06/09 22:36 | LT | 4899311 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-3 **Collected:** 01/29/2009 10:30 **SPL Sample ID:** 09020023-03

**Site:** San Juan County, NM

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANICS BY METHOD 8260B** | | | **MCL** | **SW8260B** | **Units: ug/L** | | |
| 1,1,1,2-Tetrachloroethane | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 1,1,1-Trichloroethane | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 1,1,2,2-Tetrachloroethane | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 1,1,2-Trichloroethane | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 1,1-Dichloroethane | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 1,1-Dichloroethene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 1,1-Dichloropropene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 1,2,3-Trichlorobenzene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 1,2,3-Trichloropropane | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 1,2,4-Trichlorobenzene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 1,2,4-Trimethylbenzene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 1,2-Dibromo-3-chloropropane | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 1,2-Dibromoethane | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 1,2-Dichlorobenzene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 1,2-Dichloroethane | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 1,2-Dichloropropane | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 1,3,5-Trimethylbenzene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 1,3-Dichlorobenzene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 1,3-Dichloropropane | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 1,4-Dichlorobenzene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 2,2-Dichloropropane | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 2-Butanone | ND | | 20 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 2-Chloroethyl vinyl ether | ND J | | 10 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 2-Chlorotoluene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 2-Hexanone | ND | | 10 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 4-Chlorotoluene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 4-Isopropyltoluene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 4-Methyl-2-pentanone | ND | | 10 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Acetone | ND | | 20 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Acrylonitrile | ND | | 50 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Benzene | 12 | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Bromobenzene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Bromochloromethane | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Bromodichloromethane | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Bromoform | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Bromomethane | ND | | 10 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Carbon disulfide | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Carbon tetrachloride | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Chlorobenzene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-3 **Collected:** 01/29/2009 10:30 **SPL Sample ID:** 09020023-03

**Site:** San Juan County, NM

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| Chloroethane | ND | | 10 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Chloroform | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Chloromethane | ND | | 10 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Dibromochloromethane | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Dibromomethane | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Dichlorodifluoromethane | ND | | 10 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Ethylbenzene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Hexachlorobutadiene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Isopropylbenzene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Methyl tert-butyl ether | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Methylene chloride | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Naphthalene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| n-Butylbenzene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| n-Propylbenzene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| sec-Butylbenzene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Styrene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| tert-Butylbenzene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Tetrachloroethene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Toluene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Trichloroethene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Trichlorofluoromethane | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Vinyl acetate | ND | | 10 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Vinyl chloride | ND | | 2 | 1 | 02/06/09 23:04 | LT | 4899312 |
| cis-1,2-Dichloroethene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| cis-1,3-Dichloropropene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| m,p-Xylene | 5 | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| o-Xylene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| trans-1,2-Dichloroethene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| trans-1,3-Dichloropropene | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| 1,2-Dichloroethene (total) | ND | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Xylenes,Total | 5 | | 5 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Surr: 1,2-Dichloroethane-d4 | 100 | | % 62-130 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Surr: 4-Bromofluorobenzene | 98.0 | | % 70-130 | 1 | 02/06/09 23:04 | LT | 4899312 |
| Surr: Toluene-d8 | 102 | | % 74-122 | 1 | 02/06/09 23:04 | LT | 4899312 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-4 **Collected:** 01/29/2009 11:05 **SPL Sample ID:** 09020023-04

**Site:** San Juan County, NM

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANICS BY METHOD 8260B** | | | **MCL** | **SW8260B** | **Units: ug/L** | | |
| 1,1,1,2-Tetrachloroethane | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 1,1,1-Trichloroethane | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 1,1,2,2-Tetrachloroethane | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 1,1,2-Trichloroethane | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 1,1-Dichloroethane | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 1,1-Dichloroethene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 1,1-Dichloropropene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 1,2,3-Trichlorobenzene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 1,2,3-Trichloropropane | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 1,2,4-Trichlorobenzene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 1,2,4-Trimethylbenzene | 12 | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 1,2-Dibromo-3-chloropropane | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 1,2-Dibromoethane | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 1,2-Dichlorobenzene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 1,2-Dichloroethane | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 1,2-Dichloropropane | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 1,3,5-Trimethylbenzene | 11 | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 1,3-Dichlorobenzene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 1,3-Dichloropropane | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 1,4-Dichlorobenzene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 2,2-Dichloropropane | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 2-Butanone | ND | | 20 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 2-Chloroethyl vinyl ether | ND | J | 10 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 2-Chlorotoluene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 2-Hexanone | ND | | 10 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 4-Chlorotoluene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 4-Isopropyltoluene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 4-Methyl-2-pentanone | ND | | 10 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Acetone | ND | | 20 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Acrylonitrile | ND | | 50 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Benzene | 110 | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Bromobenzene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Bromochloromethane | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Bromodichloromethane | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Bromoform | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Bromomethane | ND | | 10 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Carbon disulfide | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Carbon tetrachloride | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Chlorobenzene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-4 **Collected:** 01/29/2009 11:05 **SPL Sample ID:** 09020023-04

**Site: San Juan County, NM**

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| Chloroethane | ND | | 10 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Chloroform | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Chloromethane | ND | | 10 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Dibromochloromethane | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Dibromomethane | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Dichlorodifluoromethane | ND | | 10 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Ethylbenzene | 9 | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Hexachlorobutadiene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Isopropylbenzene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Methyl tert-butyl ether | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Methylene chloride | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Naphthalene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| n-Butylbenzene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| n-Propylbenzene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| sec-Butylbenzene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Styrene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| tert-Butylbenzene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Tetrachloroethene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Toluene | 6 | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Trichloroethene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Trichlorofluoromethane | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Vinyl acetate | ND | | 10 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Vinyl chloride | ND | | 2 | 1 | 02/06/09 23:32 | LT | 4899313 |
| cis-1,2-Dichloroethene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| cis-1,3-Dichloropropene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| m,p-Xylene | 140 | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| o-Xylene | 7 | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| trans-1,2-Dichloroethene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| trans-1,3-Dichloropropene | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| 1,2-Dichloroethene (total) | ND | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Xylenes,Total | 147 | | 5 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Surr: 1,2-Dichloroethane-d4 | 96.0 | | % 62-130 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Surr: 4-Bromofluorobenzene | 102 | | % 70-130 | 1 | 02/06/09 23:32 | LT | 4899313 |
| Surr: Toluene-d8 | 102 | | % 74-122 | 1 | 02/06/09 23:32 | LT | 4899313 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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**Client Sample ID:** DUPLICATE **Collected:** 01/29/2009 11:10 **SPL Sample ID:** 09020023-05

**Site:** San Juan County, NM

| Analyses/Method | Result | QUAL | Rep.Limit | Dil. Factor | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANICS BY METHOD 8260B** | | | **MCL** | **SW8260B** | **Units: ug/L** | | |
| Benzene | 110 | | 5 | 1 | 02/07/09 0:00 | LT | 4899314 |
| Ethylbenzene | 9 | | 5 | 1 | 02/07/09 0:00 | LT | 4899314 |
| Toluene | 5 | | 5 | 1 | 02/07/09 0:00 | LT | 4899314 |
| m,p-Xylene | 150 | | 5 | 1 | 02/07/09 0:00 | LT | 4899314 |
| o-Xylene | 8 | | 5 | 1 | 02/07/09 0:00 | LT | 4899314 |
| Xylenes,Total | 158 | | 5 | 1 | 02/07/09 0:00 | LT | 4899314 |
| Surr: 1,2-Dichloroethane-d4 | 90.0 | | % 62-130 | 1 | 02/07/09 0:00 | LT | 4899314 |
| Surr: 4-Bromofluorobenzene | 100 | | % 70-130 | 1 | 02/07/09 0:00 | LT | 4899314 |
| Surr: Toluene-d8 | 100 | | % 74-122 | 1 | 02/07/09 0:00 | LT | 4899314 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

# *Quality Control Documentation*

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# Quality Control Report

## Conoco Phillips

**COP Johnston Federal #4**

**Analysis:** Diesel Range Organics
**Method:** SW8015B

**WorkOrder:** 09020023
**Lab Batch ID:** 87691

**Method Blank**

RunID: HP_Z_090210A-4903697 Units: mg/L
Analysis Date: 02/10/2009 15:25 Analyst: NW
Preparation Date: 02/05/2009 7:19 Prep By: N_M Method SW3510C

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 09020023-01C | MW-1 |

| Analyte | Result | Rep Limit |
|---|---|---|
| Diesel Range Organics | ND | 0.050 |
| Surr: n-Pentacosane | 133.6 | 20-150 |

**Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)**

RunID: HP_Z_090210A-4903698 Units: mg/L
Analysis Date: 02/10/2009 15:56 Analyst: NW
Preparation Date: 02/05/2009 7:19 Prep By: N_M Method SW3510C

| Analyte | LCS Spike Added | LCS Result | LCS Percent Recovery | LCSD Spike Added | LCSD Result | LCSD Percent Recovery | RPD | RPD Limit | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | 2.00 | 2.78 | 139 | 2.00 | 2.61 | 130 | 6.6 | 43 | 21 | 175 |
| Surr: n-Pentacosane | 0.0500 | 0.0744 | 149 | 0.0500 | 0.0669 | 134 | 10.6 | 43 | 20 | 150 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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# Quality Control Report

## Conoco Phillips

**COP Johnston Federal #4**

**Analysis:** Gasoline Range Organics **WorkOrder:** 09020023
**Method:** SW8015B **Lab Batch ID:** R265097

**Method Blank**

RunID: HP_P_090212A-4905297 Units: mg/L
Analysis Date: 02/12/2009 5:25 Analyst: CLJ

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 09020023-01B | MW-1 |

| Analyte | Result | Rep Limit |
|---|---|---|
| Gasoline Range Organics | ND | 0.10 |
| Surr: 1,4-Difluorobenzene | 102.3 | 60-155 |
| Surr: 4-Bromofluorobenzene | 103.3 | 50-158 |

**Laboratory Control Sample (LCS)**

RunID: HP_P_090212A-4905295 Units: mg/L
Analysis Date: 02/12/2009 3:59 Analyst: CLJ

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Gasoline Range Organics | 1.00 | 0.904 | 90.4 | 42 | 136 |
| Surr: 1,4-Difluorobenzene | 0.100 | 0.106 | 106 | 60 | 155 |
| Surr: 4-Bromofluorobenzene | 0.100 | 0.105 | 105 | 50 | 158 |

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: 09020204-04
RunID: HP_P_090212A-4906038 Units: mg/L
Analysis Date: 02/12/2009 17:08 Analyst: CLJ

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics | 8.95 | 25 | 23.3 | 57.3 | 25 | 21.9 | 52.0 | 5.83 | 36 | 22 | 174 |
| Surr: 1,4-Difluorobenzene | ND | 2.5 | 2.62 | 105 | 2.5 | 2.58 | 103 | 1.56 | 30 | 60 | 155 |
| Surr: 4-Bromofluorobenzene | ND | 2.5 | 2.6 | 104 | 2.5 | 2.62 | 105 | 0.946 | 30 | 50 | 158 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits



QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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# Quality Control Report

## Conoco Phillips

**COP Johnston Federal #4**

**Analysis:** Metals by Method 6010B, Total
**Method:** SW6010B
**WorkOrder:** 09020023
**Lab Batch ID:** 87710

### Method Blank

RunID: TJA_090211A-4903743 Units: mg/L
Analysis Date: 02/11/2009 14:32 Analyst: S_C
Preparation Date: 02/05/2009 9:00 Prep By: AB1 Method SW3010A

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 09020023-01D | MW-1 |

| Analyte | Result | Rep Limit |
|---|---|---|
| Aluminum | ND | 0.1 |
| Boron | ND | 0.1 |
| Calcium | ND | 0.1 |
| Iron | ND | 0.02 |
| Magnesium | ND | 0.1 |
| Manganese | ND | 0.005 |
| Potassium | ND | 2 |
| Sodium | ND | 0.5 |
| Strontium | ND | 0.02 |
| Tin | ND | 0.05 |

### Laboratory Control Sample (LCS)

RunID: TJA_090211A-4903744 Units: mg/L
Analysis Date: 02/11/2009 14:37 Analyst: S_C
Preparation Date: 02/05/2009 9:00 Prep By: AB1 Method SW3010A

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Aluminum | 1.000 | 1.029 | 102.9 | 80 | 120 |
| Boron | 1.000 | 1.048 | 104.8 | 80 | 120 |
| Calcium | 1.000 | 1.083 | 108.3 | 80 | 120 |
| Iron | 1.000 | 1.066 | 106.6 | 80 | 120 |
| Magnesium | 1.000 | 1.026 | 102.6 | 80 | 120 |
| Manganese | 1.000 | 1.058 | 105.8 | 80 | 120 |
| Potassium | 10.00 | 9.331 | 93.31 | 80 | 120 |
| Sodium | 1.000 | 1.028 | 102.8 | 80 | 120 |
| Strontium | 1.000 | 0.9995 | 99.95 | 80 | 120 |
| Tin | 1.000 | 1.079 | 107.9 | 80 | 120 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09011215-02
RunID: TJA_090211A-4903746 Units: mg/L
Analysis Date: 02/11/2009 14:46 Analyst: S_C
Preparation Date: 02/05/2009 9:00 Prep By: AB1 Method SW3010A

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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## Quality Control Report

### Conoco Phillips

**COP Johnston Federal #4**

**Analysis:** Metals by Method 6010B, Total
**Method:** SW6010B
**WorkOrder:** 09020023
**Lab Batch ID:** 87710

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | ND | 1 | 1.181 | 111.7 | 1 | 1.163 | 109.9 | 1.511 | 20 | 75 | 125 |
| Boron | ND | 1 | 1.051 | 105.1 | 1 | 1.055 | 105.5 | 0.4008 | 20 | 75 | 125 |
| Calcium | 39.12 | 1 | 39.55 | N/C | 1 | 39.16 | N/C | N/C | 20 | 75 | 125 |
| Iron | 27.16 | 1 | 27.78 | N/C | 1 | 27.53 | N/C | N/C | 20 | 75 | 125 |
| Magnesium | 10.72 | 1 | 11.58 | N/C | 1 | 11.51 | N/C | N/C | 20 | 75 | 125 |
| Manganese | 0.4507 | 1 | 1.494 | 104.4 | 1 | 1.476 | 102.6 | 1.211 | 20 | 75 | 125 |
| Potassium | 2.957 | 10 | 13.33 | 103.7 | 10 | 12.14 | 91.86 | 9.285 | 20 | 75 | 125 |
| Sodium | 18.16 | 1 | 18.88 | N/C | 1 | 18.55 | N/C | N/C | 20 | 75 | 125 |
| Strontium | 0.1666 | 1 | 1.168 | 100.1 | 1 | 1.148 | 98.18 | 1.691 | 20 | 75 | 125 |
| Tin | ND | 1 | 1.072 | 107.2 | 1 | 1.038 | 103.8 | 3.219 | 20 | 75 | 125 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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## Quality Control Report

### Conoco Phillips

**COP Johnston Federal #4**

**Analysis:** Metals by Method 6020A, Total
**Method:** SW6020A
**WorkOrder:** 09020023
**Lab Batch ID:** 87710A-I

**Method Blank**

RunID: ICPMS_090213B-4907301 Units: mg/L
Analysis Date: 02/13/2009 22:07 Analyst: AL_H
Preparation Date: 02/05/2009 9:00 Prep By: AB1 Method SW3010A

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 09020023-01D | MW-1 |

| Analyte | Result | Rep Limit |
|---|---|---|
| Arsenic | ND | 0.005 |
| Barium | ND | 0.005 |
| Beryllium | ND | 0.004 |
| Cadmium | ND | 0.005 |
| Chromium | ND | 0.005 |
| Cobalt | ND | 0.005 |
| Copper | ND | 0.005 |
| Lead | ND | 0.005 |
| Molybdenum | ND | 0.01 |
| Thallium | ND | 0.005 |
| Vanadium | ND | 0.005 |
| Zinc | ND | 0.01 |

**Laboratory Control Sample (LCS)**

RunID: ICPMS_090213B-4907302 Units: mg/L
Analysis Date: 02/13/2009 22:12 Analyst: AL_H
Preparation Date: 02/05/2009 9:00 Prep By: AB1 Method SW3010A

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Arsenic | 0.1000 | 0.09181 | 91.81 | 80 | 120 |
| Barium | 0.1000 | 0.09065 | 90.65 | 80 | 120 |
| Beryllium | 0.1000 | 0.08278 | 82.78 | 80 | 120 |
| Cadmium | 0.1000 | 0.09139 | 91.39 | 80 | 120 |
| Chromium | 0.1000 | 0.1027 | 102.7 | 80 | 120 |
| Cobalt | 0.1000 | 0.1010 | 101.0 | 80 | 120 |
| Copper | 0.1000 | 0.08720 | 87.20 | 80 | 120 |
| Lead | 0.1000 | 0.09306 | 93.06 | 80 | 120 |
| Molybdenum | 0.1000 | 0.09657 | 96.57 | 80 | 120 |
| Thallium | 0.1000 | 0.08971 | 89.71 | 80 | 120 |
| Vanadium | 0.1000 | 0.09421 | 94.21 | 80 | 120 |
| Zinc | 0.1000 | 0.08432 | 84.32 | 80 | 120 |

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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## Quality Control Report

### Conoco Phillips

**COP Johnston Federal #4**

**Analysis:** Metals by Method 6020A, Total **WorkOrder:** 09020023
**Method:** SW6020A **Lab Batch ID:** 87710A-I

Sample Spiked: 09011215-02
RunID: ICPMS_090213B-4907304 Units: mg/L
Analysis Date: 02/13/2009 22:22 Analyst: AL_H
Preparation Date: 02/05/2009 9:00 Prep By: AB1 Method SW3010A

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | 0.1 | 0.09290 | 92.90 | 0.1 | 0.09484 | 94.84 | 2.067 | 20 | 75 | 125 |
| Barium | 0.01196 | 0.1 | 0.1027 | 90.74 | 0.1 | 0.1067 | 94.74 | 3.820 | 20 | 75 | 125 |
| Beryllium | ND | 0.1 | 0.08673 | 86.73 | 0.1 | 0.08573 | 85.73 | 1.160 | 20 | 75 | 125 |
| Cadmium | ND | 0.1 | 0.09093 | 90.93 | 0.1 | 0.09158 | 91.58 | 0.7123 | 20 | 75 | 125 |
| Chromium | 0.007483 | 0.1 | 0.1085 | 101.0 | 0.1 | 0.1081 | 100.6 | 0.3693 | 20 | 75 | 125 |
| Cobalt | 0.04554 | 0.1 | 0.1440 | 98.46 | 0.1 | 0.1450 | 99.46 | 0.6920 | 20 | 75 | 125 |
| Copper | 0.009702 | 0.1 | 0.09264 | 82.94 | 0.1 | 0.09389 | 84.19 | 1.340 | 20 | 75 | 125 |
| Lead | ND | 0.1 | 0.09617 | 96.17 | 0.1 | 0.09552 | 95.52 | 0.6782 | 20 | 75 | 125 |
| Molybdenum | ND | 0.1 | 0.1026 | 102.6 | 0.1 | 0.1023 | 102.3 | 0.2928 | 20 | 75 | 125 |
| Thallium | ND | 0.1 | 0.09313 | 93.13 | 0.1 | 0.09338 | 93.38 | 0.2681 | 20 | 75 | 125 |
| Vanadium | ND | 0.1 | 0.09461 | 93.09 | 0.1 | 0.09310 | 91.58 | 1.609 | 20 | 75 | 125 |
| Zinc | 0.03989 | 0.1 | 0.1179 | 78.01 | 0.1 | 0.1196 | 79.71 | 1.432 | 20 | 75 | 125 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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# Quality Control Report

## Conoco Phillips

**COP Johnston Federal #4**

**Analysis:** Metals by Method 6020A, Total
**Method:** SW6020A
**WorkOrder:** 09020023
**Lab Batch ID:** 87710B-I

### Method Blank

RunID: ICPMS2_090213A-4907541 Units: mg/L
Analysis Date: 02/13/2009 20:34 Analyst: AL_H
Preparation Date: 02/05/2009 9:00 Prep By: AB1 Method SW3010A

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 09020023-01D | MW-1 |

| Analyte | Result | Rep Limit |
|---|---|---|
| Antimony | ND | 0.005 |
| Nickel | ND | 0.005 |
| Silver | ND | 0.005 |

### Laboratory Control Sample (LCS)

RunID: ICPMS2_090213A-4907542 Units: mg/L
Analysis Date: 02/13/2009 20:41 Analyst: AL_H
Preparation Date: 02/05/2009 9:00 Prep By: AB1 Method SW3010A

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Antimony | 0.1000 | 0.1027 | 102.7 | 80 | 120 |
| Nickel | 0.1000 | 0.1063 | 106.3 | 80 | 120 |
| Silver | 0.1000 | 0.1070 | 107.0 | 80 | 120 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09011215-02
RunID: ICPMS2_090213A-4907544 Units: mg/L
Analysis Date: 02/13/2009 20:54 Analyst: AL_H
Preparation Date: 02/05/2009 9:00 Prep By: AB1 Method SW3010A

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 0.1 | 0.1055 | 105.5 | 0.1 | 0.1055 | 105.5 | 0 | 20 | 75 | 125 |
| Nickel | 0.008918 | 0.1 | 0.1014 | 92.48 | 0.1 | 0.09748 | 88.56 | 3.942 | 20 | 75 | 125 |
| Silver | ND | 0.1 | 0.1090 | 109.0 | 0.1 | 0.1070 | 107.0 | 1.852 | 20 | 75 | 125 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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# Quality Control Report

## Conoco Phillips

**COP Johnston Federal #4**

**Analysis:** *Metals by Method 6020A, Total* **WorkOrder:** 09020023
**Method:** SW6020A **Lab Batch ID:** 87710D-I

### Method Blank

RunID: ICPMS_090214A-4908337 Units: mg/L
Analysis Date: 02/14/2009 14:19 Analyst: AL_H
Preparation Date: 02/05/2009 9:00 Prep By: AB1 Method SW3010A

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 09020023-01D | MW-1 |

| Analyte | Result | Rep Limit |
|---|---|---|
| Selenium | ND | 0.005 |

### Laboratory Control Sample (LCS)

RunID: ICPMS_090214A-4908338 Units: mg/L
Analysis Date: 02/14/2009 14:24 Analyst: AL_H
Preparation Date: 02/05/2009 9:00 Prep By: AB1 Method SW3010A

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Selenium | 0.1000 | 0.08180 | 81.80 | 80 | 120 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09011215-02
RunID: ICPMS_090214A-4908341 Units: mg/L
Analysis Date: 02/14/2009 14:35 Analyst: AL_H
Preparation Date: 02/05/2009 9:00 Prep By: AB1 Method SW3010A

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Selenium | ND | 0.1 | 0.08167 | 80.55 | 0.1 | 0.08122 | 80.10 | 0.5525 | 20 | 75 | 125 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits



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## Quality Control Report

### Conoco Phillips

**COP Johnston Federal #4**

**Analysis:** Semivolatile Organics by Method 8270C
**Method:** SW8270C
**WorkOrder:** 09020023
**Lab Batch ID:** 87647

**Method Blank**

RunID: P_090205A-4895179
Units: ug/L
Analysis Date: 02/05/2009 14:29
Analyst: GQ
Preparation Date: 02/04/2009 9:25
Prep By: N_M Method SW3510C

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 09020023-01F | MW-1 |

| Analyte | Result | Rep Limit |
|---|---|---|
| 1,2,4-Trichlorobenzene | ND | 5.0 |
| 1,2-Dichlorobenzene | ND | 5.0 |
| 1,2-Diphenylhydrazine | ND | 10 |
| 1,3-Dichlorobenzene | ND | 5.0 |
| 1,4-Dichlorobenzene | ND | 5.0 |
| 2,4,5-Trichlorophenol | ND | 10 |
| 2,4,6-Trichlorophenol | ND | 5.0 |
| 2,4-Dichlorophenol | ND | 5.0 |
| 2,4-Dimethylphenol | ND | 5.0 |
| 2,4-Dinitrophenol | ND | 25 |
| 2,4-Dinitrotoluene | ND | 5.0 |
| 2,6-Dinitrotoluene | ND | 5.0 |
| 2-Chloronaphthalene | ND | 5.0 |
| 2-Chlorophenol | ND | 5.0 |
| 2-Methylnaphthalene | ND | 5.0 |
| 2-Nitroaniline | ND | 25 |
| 2-Nitrophenol | ND | 5.0 |
| 3,3'-Dichlorobenzidine | ND | 10 |
| 3-Nitroaniline | ND | 25 |
| 4,6-Dinitro-2-methylphenol | ND | 25 |
| 4-Bromophenyl phenyl ether | ND | 5.0 |
| 4-Chloro-3-methylphenol | ND | 5.0 |
| 4-Chloroaniline | ND | 5.0 |
| 4-Chlorophenyl phenyl ether | ND | 5.0 |
| 4-Nitroaniline | ND | 25 |
| 4-Nitrophenol | ND | 25 |
| Acenaphthene | ND | 5.0 |
| Acenaphthylene | ND | 5.0 |
| Aniline | ND | 5.0 |
| Anthracene | ND | 5.0 |
| Benz(a)anthracene | ND | 5.0 |
| Benzo(a)pyrene | ND | 5.0 |
| Benzo(b)fluoranthene | ND | 5.0 |
| Benzo(g,h,i)perylene | ND | 5.0 |
| Benzo(k)fluoranthene | ND | 5.0 |
| Benzoic acid | ND | 25 |
| Benzyl alcohol | ND | 5.0 |
| Bis(2-chloroethoxy)methane | ND | 5.0 |
| Bis(2-chloroethyl)ether | ND | 5.0 |
| Bis(2-chloroisopropyl)ether | ND | 5.0 |
| Bis(2-ethylhexyl)phthalate | ND | 5.0 |
| Butyl benzyl phthalate | ND | 5.0 |
| Carbazole | ND | 5.0 |
| Chrysene | ND | 5.0 |
| Dibenz(a,h)anthracene | ND | 5.0 |
| Dibenzofuran | ND | 5.0 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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# Quality Control Report

## Conoco Phillips

**COP Johnston Federal #4**

**Analysis:** Semivolatile Organics by Method 8270C
**Method:** SW8270C
**WorkOrder:** 09020023
**Lab Batch ID:** 87647

### Method Blank

RunID: P_090205A-4895179 Units: ug/L
Analysis Date: 02/05/2009 14:29 Analyst: GQ
Preparation Date: 02/04/2009 9:25 Prep By: N_M Method SW3510C

| Analyte | Result | Rep Limit |
|---|---|---|
| Diethyl phthalate | ND | 5.0 |
| Dimethyl phthalate | ND | 5.0 |
| Di-n-butyl phthalate | ND | 5.0 |
| Di-n-octyl phthalate | ND | 5.0 |
| Fluoranthene | ND | 5.0 |
| Fluorene | ND | 5.0 |
| Hexachlorobenzene | ND | 5.0 |
| Hexachlorobutadiene | ND | 5.0 |
| Hexachlorocyclopentadiene | ND | 5.0 |
| Hexachloroethane | ND | 5.0 |
| Indeno(1,2,3-cd)pyrene | ND | 5.0 |
| Isophorone | ND | 5.0 |
| Naphthalene | ND | 5.0 |
| Nitrobenzene | ND | 5.0 |
| N-Nitrosodi-n-propylamine | ND | 5.0 |
| N-Nitrosodiphenylamine | ND | 5.0 |
| Pentachlorophenol | ND | 25 |
| Phenanthrene | ND | 5.0 |
| Phenol | ND | 5.0 |
| Pyrene | ND | 5.0 |
| Pyridine | ND | 5.0 |
| 2-Methylphenol | ND | 5.0 |
| 3 & 4-Methylphenol | ND | 5.0 |
| Surr: 2,4,6-Tribromophenol | 64.0 | 10-123 |
| Surr: 2-Fluorobiphenyl | 60.0 | 23-116 |
| Surr: 2-Fluorophenol | 57.3 | 16-110 |
| Surr: Nitrobenzene-d5 | 58.0 | 21-114 |
| Surr: Phenol-d5 | 64.0 | 10-110 |
| Surr: Terphenyl-d14 | 78.0 | 22-141 |

### Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: P_090205A-4895180 Units: ug/L
Analysis Date: 02/05/2009 17:09 Analyst: GQ
Preparation Date: 02/04/2009 9:25 Prep By: N_M Method SW3510C

| Analyte | LCS Spike Added | LCS Result | LCS Percent Recovery | LCSD Spike Added | LCSD Result | LCSD Percent Recovery | RPD | RPD Limit | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 25.0 | 20.0 | 80.0 | 25.0 | 21.0 | 84.0 | 4.9 | 39 | 10 | 142 |
| 1,2-Dichlorobenzene | 25.0 | 21.0 | 84.0 | 25.0 | 21.0 | 84.0 | 0.0 | 50 | 20 | 150 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits



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## Quality Control Report

### Conoco Phillips

**COP Johnston Federal #4**

**Analysis:** Semivolatile Organics by Method 8270C **WorkOrder:** 09020023
**Method:** SW8270C **Lab Batch ID:** 87647

**Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)**

RunID: P_090205A-4895180 Units: ug/L
Analysis Date: 02/05/2009 17:09 Analyst: GQ
Preparation Date: 02/04/2009 9:25 Prep By: N_M Method SW3510C

| Analyte | LCS Spike Added | LCS Result | LCS Percent Recovery | LCSD Spike Added | LCSD Result | LCSD Percent Recovery | RPD | RPD Limit | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Diphenylhydrazine | 25.0 | 23.0 | 92.0 | 25.0 | 23.0 | 92.0 | 0.0 | 50 | 10 | 251 |
| 1,3-Dichlorobenzene | 25.0 | 20.0 | 80.0 | 25.0 | 20.0 | 80.0 | 0.0 | 50 | 20 | 150 |
| 1,4-Dichlorobenzene | 25.0 | 21.0 | 84.0 | 25.0 | 20.0 | 80.0 | 4.9 | 45 | 20 | 150 |
| 2,4,5-Trichlorophenol | 25.0 | 23.0 | 92.0 | 25.0 | 24.0 | 96.0 | 4.3 | 50 | 30 | 150 |
| 2,4,6-Trichlorophenol | 25.0 | 22.0 | 88.0 | 25.0 | 22.0 | 88.0 | 0.0 | 50 | 30 | 150 |
| 2,4-Dichlorophenol | 25.0 | 22.0 | 88.0 | 25.0 | 22.0 | 88.0 | 0.0 | 50 | 30 | 150 |
| 2,4-Dimethylphenol | 25.0 | 22.0 | 88.0 | 25.0 | 22.0 | 88.0 | 0.0 | 50 | 32 | 140 |
| 2,4-Dinitrophenol | 25.0 | 20.0 | 80.0 | 25.0 | 24.0 | 96.0 | 18.2 | 50 | 10 | 160 |
| 2,4-Dinitrotoluene | 25.0 | 23.0 | 92.0 | 25.0 | 24.0 | 96.0 | 4.3 | 50 | 30 | 150 |
| 2,6-Dinitrotoluene | 25.0 | 22.0 | 88.0 | 25.0 | 22.0 | 88.0 | 0.0 | 50 | 30 | 150 |
| 2-Chloronaphthalene | 25.0 | 21.0 | 84.0 | 25.0 | 21.0 | 84.0 | 0.0 | 50 | 30 | 150 |
| 2-Chlorophenol | 25.0 | 21.0 | 84.0 | 25.0 | 21.0 | 84.0 | 0.0 | 40 | 23 | 134 |
| 2-Methylnaphthalene | 25.0 | 21.0 | 84.0 | 25.0 | 22.0 | 88.0 | 4.7 | 50 | 20 | 170 |
| 2-Nitroaniline | 25.0 | 21.0 | 84.0 | 25.0 | 22.0 | 88.0 | 4.7 | 50 | 20 | 160 |
| 2-Nitrophenol | 25.0 | 21.0 | 84.0 | 25.0 | 21.0 | 84.0 | 0.0 | 50 | 29 | 182 |
| 3,3'-Dichlorobenzidine | 25.0 | 11.0 | 44.0 | 25.0 | 14.0 | 56.0 | 24.0 | 50 | 30 | 200 |
| 3-Nitroaniline | 25.0 | 17.0 | 68.0 | 25.0 | 20.0 | 80.0 | 16.2 | 50 | 20 | 160 |
| 4,6-Dinitro-2-methylphenol | 25.0 | 23.0 | 92.0 | 25.0 | 24.0 | 96.0 | 4.3 | 50 | 10 | 160 |
| 4-Bromophenyl phenyl ether | 25.0 | 22.0 | 88.0 | 25.0 | 22.0 | 88.0 | 0.0 | 50 | 30 | 150 |
| 4-Chloro-3-methylphenol | 25.0 | 23.0 | 92.0 | 25.0 | 23.0 | 92.0 | 0.0 | 42 | 25 | 160 |
| 4-Chloroaniline | 25.0 | 15.0 | 60.0 | 25.0 | 20.0 | 80.0 | 28.6 | 50 | 20 | 160 |
| 4-Chlorophenyl phenyl ether | 25.0 | 22.0 | 88.0 | 25.0 | 22.0 | 88.0 | 0.0 | 50 | 25 | 158 |
| 4-Nitroaniline | 25.0 | 22.0 | 88.0 | 25.0 | 23.0 | 92.0 | 4.4 | 50 | 20 | 160 |
| 4-Nitrophenol | 25.0 | 24.0 | 96.0 | 25.0 | 25.0 | 100 | 4.1 | 50 | 10 | 132 |
| Acenaphthene | 25.0 | 21.0 | 84.0 | 25.0 | 22.0 | 88.0 | 4.7 | 31 | 30 | 150 |
| Acenaphthylene | 25.0 | 23.0 | 92.0 | 25.0 | 23.0 | 92.0 | 0.0 | 50 | 33 | 250 |
| Aniline | 50.0 | 30.0 | 60.0 | 50.0 | 36.0 | 72.0 | 18.2 | 50 | 10 | 135 |
| Anthracene | 25.0 | 24.0 | 96.0 | 25.0 | 25.0 | 100 | 4.1 | 50 | 27 | 133 |
| Benz(a)anthracene | 25.0 | 20.0 | 80.0 | 25.0 | 21.0 | 84.0 | 4.9 | 50 | 33 | 143 |
| Benzo(a)pyrene | 25.0 | 20.0 | 80.0 | 25.0 | 20.0 | 80.0 | 0.0 | 50 | 17 | 163 |
| Benzo(b)fluoranthene | 25.0 | 22.0 | 88.0 | 25.0 | 23.0 | 92.0 | 4.4 | 50 | 24 | 159 |
| Benzo(g,h,i)perylene | 25.0 | 24.0 | 96.0 | 25.0 | 23.0 | 92.0 | 4.3 | 50 | 30 | 160 |
| Benzo(k)fluoranthene | 25.0 | 25.0 | 100 | 25.0 | 25.0 | 100 | 0.0 | 50 | 11 | 162 |

**Qualifiers:**

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## Quality Control Report

### Conoco Phillips

**COP Johnston Federal #4**

**Analysis:** Semivolatile Organics by Method 8270C **WorkOrder:** 09020023
**Method:** SW8270C **Lab Batch ID:** 87647

**Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)**

RunID: P_090205A-4895180 Units: ug/L
Analysis Date: 02/05/2009 17:09 Analyst: GQ
Preparation Date: 02/04/2009 9:25 Prep By: N_M Method SW3510C

| Analyte | LCS Spike Added | LCS Result | LCS Percent Recovery | LCSD Spike Added | LCSD Result | LCSD Percent Recovery | RPD | RPD Limit | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzoic acid | 25.0 | 39.0 | 156 | 25.0 | 40.0 | 160 | 2.5 | 50 | 10 | 400 |
| Benzyl alcohol | 25.0 | 21.0 | 84.0 | 25.0 | 21.0 | 84.0 | 0.0 | 50 | 30 | 160 |
| Bis(2-chloroethoxy)methane | 25.0 | 21.0 | 84.0 | 25.0 | 21.0 | 84.0 | 0.0 | 50 | 33 | 184 |
| Bis(2-chloroethyl)ether | 25.0 | 21.0 | 84.0 | 25.0 | 20.0 | 80.0 | 4.9 | 50 | 12 | 158 |
| Bis(2-chloroisopropyl)ether | 25.0 | 20.0 | 80.0 | 25.0 | 20.0 | 80.0 | 0.0 | 50 | 20 | 160 |
| Bis(2-ethylhexyl)phthalate | 25.0 | 22.0 | 88.0 | 25.0 | 22.0 | 88.0 | 0.0 | 50 | 10 | 158 |
| Butyl benzyl phthalate | 25.0 | 21.0 | 84.0 | 25.0 | 21.0 | 84.0 | 0.0 | 50 | 30 | 160 |
| Carbazole | 25.0 | 24.0 | 96.0 | 25.0 | 26.0 | 104 | 8.0 | 50 | 30 | 150 |
| Chrysene | 25.0 | 20.0 | 80.0 | 25.0 | 20.0 | 80.0 | 0.0 | 50 | 17 | 168 |
| Dibenz(a,h)anthracene | 25.0 | 23.0 | 92.0 | 25.0 | 23.0 | 92.0 | 0.0 | 50 | 30 | 160 |
| Dibenzofuran | 25.0 | 22.0 | 88.0 | 25.0 | 22.0 | 88.0 | 0.0 | 50 | 30 | 150 |
| Diethyl phthalate | 25.0 | 23.0 | 92.0 | 25.0 | 23.0 | 92.0 | 0.0 | 50 | 30 | 160 |
| Dimethyl phthalate | 25.0 | 22.0 | 88.0 | 25.0 | 22.0 | 88.0 | 0.0 | 50 | 30 | 160 |
| Di-n-butyl phthalate | 25.0 | 26.0 | 104 | 25.0 | 26.0 | 104 | 0.0 | 50 | 30 | 160 |
| Di-n-octyl phthalate | 25.0 | 22.0 | 88.0 | 25.0 | 22.0 | 88.0 | 0.0 | 50 | 20 | 150 |
| Fluoranthene | 25.0 | 26.0 | 104 | 25.0 | 27.0 | 108 | 3.8 | 50 | 26 | 137 |
| Fluorene | 25.0 | 22.0 | 88.0 | 25.0 | 23.0 | 92.0 | 4.4 | 50 | 30 | 150 |
| Hexachlorobenzene | 25.0 | 22.0 | 88.0 | 25.0 | 22.0 | 88.0 | 0.0 | 50 | 20 | 150 |
| Hexachlorobutadiene | 25.0 | 20.0 | 80.0 | 25.0 | 20.0 | 80.0 | 0.0 | 50 | 20 | 140 |
| Hexachlorocyclopentadiene | 25.0 | 25.0 | 100 | 25.0 | 27.0 | 108 | 7.7 | 50 | 10 | 150 |
| Hexachloroethane | 25.0 | 20.0 | 80.0 | 25.0 | 20.0 | 80.0 | 0.0 | 50 | 10 | 140 |
| Indeno(1,2,3-cd)pyrene | 25.0 | 23.0 | 92.0 | 25.0 | 23.0 | 92.0 | 0.0 | 50 | 30 | 160 |
| Isophorone | 25.0 | 22.0 | 88.0 | 25.0 | 22.0 | 88.0 | 0.0 | 50 | 21 | 196 |
| Naphthalene | 25.0 | 22.0 | 88.0 | 25.0 | 23.0 | 92.0 | 4.4 | 50 | 21 | 133 |
| Nitrobenzene | 25.0 | 20.0 | 80.0 | 25.0 | 20.0 | 80.0 | 0.0 | 50 | 20 | 160 |
| N-Nitrosodi-n-propylamine | 25.0 | 21.0 | 84.0 | 25.0 | 21.0 | 84.0 | 0.0 | 38 | 30 | 160 |
| N-Nitrosodiphenylamine | 50.0 | 56.0 | 112 | 50.0 | 58.0 | 116 | 3.5 | 50 | 30 | 150 |
| Pentachlorophenol | 25.0 | 21.0 | 84.0 | 25.0 | 22.0 | 88.0 | 4.7 | 50 | 14 | 176 |
| Phenanthrene | 25.0 | 23.0 | 92.0 | 25.0 | 24.0 | 96.0 | 4.3 | 50 | 10 | 140 |
| Phenol | 25.0 | 21.0 | 84.0 | 25.0 | 21.0 | 84.0 | 0.0 | 42 | 40 | 132 |
| Pyrene | 25.0 | 18.0 | 72.0 | 25.0 | 18.0 | 72.0 | 0.0 | 38 | 30 | 150 |
| Pyridine | 50.0 | 31.0 | 62.0 | 50.0 | 34.0 | 68.0 | 9.2 | 50 | 10 | 150 |
| 2-Methylphenol | 25.0 | 22.0 | 88.0 | 25.0 | 22.0 | 88.0 | 0.0 | 50 | 30 | 160 |

**Qualifiers:**
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## Quality Control Report

**Conoco Phillips**

**COP Johnston Federal #4**

**Analysis:** Semivolatile Organics by Method 8270C **WorkOrder:** 09020023
**Method:** SW8270C **Lab Batch ID:** 87647

**Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)**

RunID: P_090205A-4895180 Units: ug/L
Analysis Date: 02/05/2009 17:09 Analyst: GQ
Preparation Date: 02/04/2009 9:25 Prep By: N_M Method SW3510C

| Analyte | LCS Spike Added | LCS Result | LCS Percent Recovery | LCSD Spike Added | LCSD Result | LCSD Percent Recovery | RPD | RPD Limit | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 & 4-Methylphenol | 25.0 | 23.0 | 92.0 | 25.0 | 24.0 | 96.0 | 4.3 | 50 | 10 | 160 |
| Surr: 2,4,6-Tribromophenol | 75.0 | 73.0 | 97.3 | 75.0 | 75.0 | 100 | 2.7 | 30 | 10 | 123 |
| Surr: 2-Fluorobiphenyl | 50.0 | 40.0 | 80.0 | 50.0 | 40.0 | 80.0 | 0.0 | 30 | 23 | 116 |
| Surr: 2-Fluorophenol | 75.0 | 58.0 | 77.3 | 75.0 | 57.0 | 76.0 | 1.7 | 30 | 16 | 110 |
| Surr: Nitrobenzene-d5 | 50.0 | 39.0 | 78.0 | 50.0 | 39.0 | 78.0 | 0.0 | 30 | 21 | 114 |
| Surr: Phenol-d5 | 75.0 | 64.0 | 85.3 | 75.0 | 62.0 | 82.7 | 3.2 | 30 | 10 | 110 |
| Surr: Terphenyl-d14 | 50.0 | 46.0 | 92.0 | 50.0 | 45.0 | 90.0 | 2.2 | 30 | 22 | 141 |

**Qualifiers:**

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D - Recovery Unreportable due to Dilution
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## Quality Control Report

## Conoco Phillips

**COP Johnston Federal #4**

**Analysis:** Volatile Organics by Method 8260B
**Method:** SW8260B
**WorkOrder:** 09020023
**Lab Batch ID:** R264735

**Method Blank**

RunID: N_090206A-4899304 Units: ug/L
Analysis Date: 02/06/2009 16:30 Analyst: LT
Preparation Date: 02/06/2009 16:30 Prep By: Method

| Analyte | Result | Rep Limit |
|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND | 5.0 |
| 1,1,1-Trichloroethane | ND | 5.0 |
| 1,1,2,2-Tetrachloroethane | ND | 5.0 |
| 1,1,2-Trichloroethane | ND | 5.0 |
| 1,1-Dichloroethane | ND | 5.0 |
| 1,1-Dichloroethene | ND | 5.0 |
| 1,1-Dichloropropene | ND | 5.0 |
| 1,2,3-Trichlorobenzene | ND | 5.0 |
| 1,2,3-Trichloropropane | ND | 5.0 |
| 1,2,4-Trichlorobenzene | ND | 5.0 |
| 1,2,4-Trimethylbenzene | ND | 5.0 |
| 1,2-Dibromo-3-chloropropane | ND | 5.0 |
| 1,2-Dibromoethane | ND | 5.0 |
| 1,2-Dichlorobenzene | ND | 5.0 |
| 1,2-Dichloroethane | ND | 5.0 |
| 1,2-Dichloropropane | ND | 5.0 |
| 1,3,5-Trimethylbenzene | ND | 5.0 |
| 1,3-Dichlorobenzene | ND | 5.0 |
| 1,3-Dichloropropane | ND | 5.0 |
| 1,4-Dichlorobenzene | ND | 5.0 |
| 2,2-Dichloropropane | ND | 5.0 |
| 2-Butanone | ND | 20 |
| 2-Chloroethyl vinyl ether | ND | 10 |
| 2-Chlorotoluene | ND | 5.0 |
| 2-Hexanone | ND | 10 |
| 4-Chlorotoluene | ND | 5.0 |
| 4-Isopropyltoluene | ND | 5.0 |
| 4-Methyl-2-pentanone | ND | 10 |
| Acetone | ND | 20 |
| Acrylonitrile | ND | 50 |
| Benzene | ND | 5.0 |
| Bromobenzene | ND | 5.0 |
| Bromochloromethane | ND | 5.0 |
| Bromodichloromethane | ND | 5.0 |
| Bromoform | ND | 5.0 |
| Bromomethane | ND | 10 |
| Carbon disulfide | ND | 5.0 |
| Carbon tetrachloride | ND | 5.0 |
| Chlorobenzene | ND | 5.0 |
| Chloroethane | ND | 10 |
| Chloroform | ND | 5.0 |
| Chloromethane | ND | 10 |
| Dibromochloromethane | ND | 5.0 |
| Dibromomethane | ND | 5.0 |
| Dichlorodifluoromethane | ND | 10 |
| Ethylbenzene | ND | 5.0 |

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 09020023-01A | MW-1 |
| 09020023-02A | MW-2 |
| 09020023-03A | MW-3 |
| 09020023-04A | MW-4 |
| 09020023-05A | DUPLICATE |

**Qualifiers:**

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B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
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## Quality Control Report

### Conoco Phillips

**COP Johnston Federal #4**

**Analysis:** Volatile Organics by Method 8260B
**Method:** SW8260B
**WorkOrder:** 09020023
**Lab Batch ID:** R264735

**Method Blank**

RunID: N_090206A-4899304 Units: ug/L
Analysis Date: 02/06/2009 16:30 Analyst: LT
Preparation Date: 02/06/2009 16:30 Prep By: Method

| Analyte | Result | Rep Limit |
|---|---|---|
| Hexachlorobutadiene | ND | 5.0 |
| Isopropylbenzene | ND | 5.0 |
| Methyl tert-butyl ether | ND | 5.0 |
| Methylene chloride | ND | 5.0 |
| Naphthalene | ND | 5.0 |
| n-Butylbenzene | ND | 5.0 |
| n-Propylbenzene | ND | 5.0 |
| sec-Butylbenzene | ND | 5.0 |
| Styrene | ND | 5.0 |
| tert-Butylbenzene | ND | 5.0 |
| Tetrachloroethene | ND | 5.0 |
| Toluene | ND | 5.0 |
| Trichloroethene | ND | 5.0 |
| Trichlorofluoromethane | ND | 5.0 |
| Vinyl acetate | ND | 10 |
| Vinyl chloride | ND | 2.0 |
| cis-1,2-Dichloroethene | ND | 5.0 |
| cis-1,3-Dichloropropene | ND | 5.0 |
| m,p-Xylene | ND | 5.0 |
| o-Xylene | ND | 5.0 |
| trans-1,2-Dichloroethene | ND | 5.0 |
| trans-1,3-Dichloropropene | ND | 5.0 |
| 1,2-Dichloroethene (total) | ND | 5.0 |
| Xylenes,Total | ND | 5.0 |
| Surr: 1,2-Dichloroethane-d4 | 102.0 | 62-130 |
| Surr: 4-Bromofluorobenzene | 96.0 | 70-130 |
| Surr: Toluene-d8 | 100.0 | 74-122 |

**Laboratory Control Sample (LCS)**

RunID: N_090206A-4899303 Units: ug/L
Analysis Date: 02/06/2009 15:50 Analyst: LT
Preparation Date: 02/06/2009 15:50 Prep By: Method

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 20.0 | 18.0 | 90.0 | 71 | 136 |
| 1,1,1-Trichloroethane | 20.0 | 21.0 | 105 | 66 | 132 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 17.0 | 85.0 | 55 | 139 |
| 1,1,2-Trichloroethane | 20.0 | 18.0 | 90.0 | 70 | 130 |
| 1,1-Dichloroethane | 20.0 | 18.0 | 90.0 | 67 | 131 |

**Qualifiers:**
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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# Quality Control Report

## Conoco Phillips

**COP Johnston Federal #4**

**Analysis:** Volatile Organics by Method 8260B
**Method:** SW8260B
**WorkOrder:** 09020023
**Lab Batch ID:** R264735

**Laboratory Control Sample (LCS)**

RunID: N_090206A-4899303 Units: ug/L
Analysis Date: 02/06/2009 15:50 Analyst: LT
Preparation Date: 02/06/2009 15:50 Prep By: Method

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| 1,1-Dichloroethene | 20.0 | 20.0 | 100 | 71 | 146 |
| 1,1-Dichloropropene | 20.0 | 21.0 | 105 | 59 | 138 |
| 1,2,3-Trichlorobenzene | 20.0 | 19.0 | 95.0 | 37 | 155 |
| 1,2,3-Trichloropropane | 20.0 | 18.0 | 90.0 | 70 | 145 |
| 1,2,4-Trichlorobenzene | 20.0 | 18.0 | 90.0 | 39 | 133 |
| 1,2,4-Trimethylbenzene | 20.0 | 19.0 | 95.0 | 53 | 147 |
| 1,2-Dibromo-3-chloropropane | 20.0 | 14.0 | 70.0 | 43 | 137 |
| 1,2-Dibromoethane | 20.0 | 17.0 | 85.0 | 63 | 126 |
| 1,2-Dichlorobenzene | 20.0 | 18.0 | 90.0 | 70 | 130 |
| 1,2-Dichloroethane | 20.0 | 21.0 | 105 | 64 | 150 |
| 1,2-Dichloropropane | 20.0 | 21.0 | 105 | 76 | 124 |
| 1,3,5-Trimethylbenzene | 20.0 | 19.0 | 95.0 | 57 | 146 |
| 1,3-Dichlorobenzene | 20.0 | 19.0 | 95.0 | 72 | 134 |
| 1,3-Dichloropropane | 20.0 | 19.0 | 95.0 | 78 | 130 |
| 1,4-Dichlorobenzene | 20.0 | 18.0 | 90.0 | 70 | 130 |
| 2,2-Dichloropropane | 20.0 | 18.0 | 90.0 | 45 | 156 |
| 2-Butanone | 20.0 | 14.0 | 70.0 | 20 | 235 |
| 2-Chloroethyl vinyl ether | 20.0 | 21.0 | 105 | 13 | 179 |
| 2-Chlorotoluene | 20.0 | 18.0 | 90.0 | 64 | 122 |
| 2-Hexanone | 20.0 | 19.0 | 95.0 | 34 | 182 |
| 4-Chlorotoluene | 20.0 | 18.0 | 90.0 | 64 | 142 |
| 4-Isopropyltoluene | 20.0 | 21.0 | 105 | 60 | 134 |
| 4-Methyl-2-pentanone | 20.0 | 20.0 | 100 | 11 | 145 |
| Acetone | 20.0 | 18.0 | 90.0 | 13 | 386 |
| Acrylonitrile | 20.0 | 17.0 | 85.0 | 43 | 194 |
| Benzene | 20.0 | 21.0 | 105 | 76 | 126 |
| Bromobenzene | 20.0 | 17.0 | 85.0 | 70 | 130 |
| Bromochloromethane | 20.0 | 18.0 | 90.0 | 63 | 131 |
| Bromodichloromethane | 20.0 | 20.0 | 100 | 77 | 138 |
| Bromoform | 20.0 | 18.0 | 90.0 | 55 | 129 |
| Bromomethane | 20.0 | 15.0 | 75.0 | 58 | 148 |
| Carbon disulfide | 20.0 | 17.0 | 85.0 | 46 | 146 |
| Carbon tetrachloride | 20.0 | 21.0 | 105 | 66 | 137 |
| Chlorobenzene | 20.0 | 19.0 | 95.0 | 67 | 136 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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# Quality Control Report

## Conoco Phillips

**COP Johnston Federal #4**

**Analysis:** Volatile Organics by Method 8260B **WorkOrder:** 09020023
**Method:** SW8260B **Lab Batch ID:** R264735

**Laboratory Control Sample (LCS)**

RunID: N_090206A-4899303 Units: ug/L
Analysis Date: 02/06/2009 15:50 Analyst: LT
Preparation Date: 02/06/2009 15:50 Prep By: Method

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Chloroethane | 20.0 | 19.0 | 95.0 | 50 | 137 |
| Chloroform | 20.0 | 18.0 | 90.0 | 70 | 135 |
| Chloromethane | 20.0 | 24.0 | 120 | 51 | 140 |
| Dibromochloromethane | 20.0 | 16.0 | 80.0 | 69 | 127 |
| Dibromomethane | 20.0 | 20.0 | 100 | 74 | 130 |
| Dichlorodifluoromethane | 20.0 | 23.0 | 115 | 32 | 161 |
| Ethylbenzene | 20.0 | 20.0 | 100 | 67 | 122 |
| Hexachlorobutadiene | 20.0 | 19.0 | 95.0 | 43 | 144 |
| Isopropylbenzene | 20.0 | 18.0 | 90.0 | 60 | 135 |
| Methyl tert-butyl ether | 40.0 | 35.0 | 87.5 | 48 | 160 |
| Methylene chloride | 20.0 | 17.0 | 85.0 | 52 | 143 |
| Naphthalene | 20.0 | 17.0 | 85.0 | 24 | 150 |
| n-Butylbenzene | 20.0 | 21.0 | 105 | 50 | 140 |
| n-Propylbenzene | 20.0 | 18.0 | 90.0 | 62 | 137 |
| sec-Butylbenzene | 20.0 | 19.0 | 95.0 | 66 | 126 |
| Styrene | 20.0 | 18.0 | 90.0 | 60 | 139 |
| tert-Butylbenzene | 20.0 | 21.0 | 105 | 67 | 140 |
| Tetrachloroethene | 20.0 | 21.0 | 105 | 26 | 200 |
| Toluene | 20.0 | 22.0 | 110 | 70 | 131 |
| Trichloroethene | 20.0 | 23.0 | 115 | 64 | 137 |
| Trichlorofluoromethane | 20.0 | 20.0 | 100 | 46 | 167 |
| Vinyl acetate | 20.0 | 19.0 | 95.0 | 10 | 193 |
| Vinyl chloride | 20.0 | 20.0 | 100 | 31 | 147 |
| cis-1,2-Dichloroethene | 20.0 | 18.0 | 90.0 | 70 | 142 |
| cis-1,3-Dichloropropene | 20.0 | 18.0 | 90.0 | 61 | 134 |
| m,p-Xylene | 40.0 | 41.0 | 102 | 72 | 150 |
| o-Xylene | 20.0 | 21.0 | 105 | 78 | 141 |
| trans-1,2-Dichloroethene | 20.0 | 18.0 | 90.0 | 67 | 141 |
| trans-1,3-Dichloropropene | 20.0 | 17.0 | 85.0 | 56 | 136 |
| 1,2-Dichloroethene (total) | 40 | 36 | 90 | 73 | 139 |
| Xylenes,Total | 60 | 62 | 100 | 72 | 150 |
| Surr: 1,2-Dichloroethane-d4 | 50.0 | 49 | 98.0 | 62 | 130 |
| Surr: 4-Bromofluorobenzene | 50.0 | 51 | 102 | 70 | 130 |
| Surr: Toluene-d8 | 50.0 | 51 | 102 | 74 | 122 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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## Quality Control Report

**Conoco Phillips**

**COP Johnston Federal #4**

**Analysis:** Volatile Organics by Method 8260B **WorkOrder:** 09020023
**Method:** SW8260B **Lab Batch ID:** R264735

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: 09011215-02
RunID: N_090206A-4899306 Units: ug/L
Analysis Date: 02/06/2009 17:26 Analyst: LT

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND | 20 | 18.0 | 90.0 | 20 | 18.0 | 90.0 | 0 | 20 | 35 | 175 |
| 1,1,1-Trichloroethane | ND | 20 | 21.0 | 105 | 20 | 22.0 | 110 | 4.65 | 20 | 35 | 175 |
| 1,1,2,2-Tetrachloroethane | ND | 20 | 18.0 | 90.0 | 20 | 18.0 | 90.0 | 0 | 20 | 35 | 175 |
| 1,1,2-Trichloroethane | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 20 | 35 | 175 |
| 1,1-Dichloroethane | ND | 20 | 17.0 | 85.0 | 20 | 17.0 | 85.0 | 0 | 20 | 35 | 175 |
| 1,1-Dichloroethene | ND | 20 | 17.0 | 85.0 | 20 | 19.0 | 95.0 | 11.1 | 22 | 61 | 145 |
| 1,1-Dichloropropene | ND | 20 | 21.0 | 105 | 20 | 20.0 | 100 | 4.88 | 20 | 35 | 175 |
| 1,2,3-Trichlorobenzene | ND | 20 | 16.0 | 80.0 | 20 | 18.0 | 90.0 | 11.8 | 20 | 27 | 187 |
| 1,2,3-Trichloropropane | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 20 | 35 | 175 |
| 1,2,4-Trichlorobenzene | ND | 20 | 16.0 | 80.0 | 20 | 17.0 | 85.0 | 6.06 | 20 | 34 | 150 |
| 1,2,4-Trimethylbenzene | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 20 | 35 | 175 |
| 1,2-Dibromo-3-chloropropane | ND | 20 | 14.0 | 70.0 | 20 | 15.0 | 75.0 | 6.90 | 20 | 15 | 175 |
| 1,2-Dibromoethane | ND | 20 | 18.0 | 90.0 | 20 | 18.0 | 90.0 | 0 | 20 | 35 | 175 |
| 1,2-Dichlorobenzene | ND | 20 | 17.0 | 85.0 | 20 | 17.0 | 85.0 | 0 | 20 | 35 | 175 |
| 1,2-Dichloroethane | ND | 20 | 20.0 | 100 | 20 | 21.0 | 105 | 4.88 | 20 | 35 | 175 |
| 1,2-Dichloropropane | ND | 20 | 20.0 | 100 | 20 | 20.0 | 100 | 0 | 20 | 35 | 175 |
| 1,3,5-Trimethylbenzene | ND | 20 | 18.0 | 90.0 | 20 | 18.0 | 90.0 | 0 | 20 | 35 | 175 |
| 1,3-Dichlorobenzene | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 20 | 35 | 175 |
| 1,3-Dichloropropane | ND | 20 | 20.0 | 100 | 20 | 20.0 | 100 | 0 | 20 | 35 | 175 |
| 1,4-Dichlorobenzene | ND | 20 | 18.0 | 90.0 | 20 | 17.0 | 85.0 | 5.71 | 20 | 35 | 175 |
| 2,2-Dichloropropane | ND | 20 | 19.0 | 95.0 | 20 | 17.0 | 85.0 | 11.1 | 20 | 35 | 175 |
| 2-Butanone | ND | 50 | 16.0 | 32.0 | 50 | 15.0 | 30.0 | 6.45 | 20 | 10 | 230 |
| 2-Chloroethyl vinyl ether | ND | 20 | 0 | 0 * | 20 | 0 | 0 * | 0 | 20 | 10 | 250 |
| 2-Chlorotoluene | ND | 20 | 18.0 | 90.0 | 20 | 18.0 | 90.0 | 0 | 20 | 31 | 175 |
| 2-Hexanone | ND | 50 | 23.0 | 46.0 | 50 | 24.0 | 48.0 | 4.26 | 20 | 10 | 250 |
| 4-Chlorotoluene | ND | 20 | 18.0 | 90.0 | 20 | 18.0 | 90.0 | 0 | 20 | 31 | 175 |
| 4-Isopropyltoluene | ND | 20 | 20.0 | 100 | 20 | 20.0 | 100 | 0 | 20 | 35 | 175 |
| 4-Methyl-2-pentanone | ND | 50 | 20.0 | 40.0 | 50 | 22.0 | 44.0 | 9.52 | 20 | 10 | 175 |
| Acetone | ND | 50 | 17.0 | 34.0 | 50 | 18.0 | 36.0 | 5.71 | 20 | 10 | 400 |
| Acrylonitrile | ND | 20 | 15.0 | 75.0 | 20 | 17.0 | 85.0 | 12.5 | 20 | 15 | 250 |

**Qualifiers:**
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
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# Quality Control Report

## Conoco Phillips

**COP Johnston Federal #4**

**Analysis:** Volatile Organics by Method 8260B
**Method:** SW8260B
**WorkOrder:** 09020023
**Lab Batch ID:** R264735

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: 09011215-02
RunID: N_090206A-4899306 Units: ug/L
Analysis Date: 02/06/2009 17:26 Analyst: LT

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 20 | 20.0 | 100 | 20 | 20.0 | 100 | 0 | 22 | 76 | 127 |
| Bromobenzene | ND | 20 | 17.0 | 85.0 | 20 | 17.0 | 85.0 | 0 | 20 | 35 | 175 |
| Bromochloromethane | ND | 20 | 18.0 | 90.0 | 20 | 16.0 | 80.0 | 11.8 | 20 | 35 | 175 |
| Bromodichloromethane | ND | 20 | 19.0 | 95.0 | 20 | 18.0 | 90.0 | 5.41 | 20 | 35 | 175 |
| Bromoform | ND | 20 | 15.0 | 75.0 | 20 | 14.0 | 70.0 | 6.90 | 20 | 35 | 175 |
| Bromomethane | ND | 20 | 12.0 | 60.0 | 20 | 13.0 | 65.0 | 8.00 | 20 | 35 | 175 |
| Carbon disulfide | ND | 20 | 15.0 | 75.0 | 20 | 16.0 | 80.0 | 6.45 | 20 | 30 | 225 |
| Carbon tetrachloride | ND | 20 | 22.0 | 110 | 20 | 21.0 | 105 | 4.65 | 20 | 35 | 175 |
| Chlorobenzene | ND | 20 | 19.0 | 95.0 | 20 | 18.0 | 90.0 | 5.41 | 21 | 70 | 130 |
| Chloroethane | ND | 20 | 14.0 | 70.0 | 20 | 16.0 | 80.0 | 13.3 | 20 | 35 | 175 |
| Chloroform | ND | 20 | 18.0 | 90.0 | 20 | 18.0 | 90.0 | 0 | 20 | 35 | 175 |
| Chloromethane | ND | 20 | 17.0 | 85.0 | 20 | 20.0 | 100 | 16.2 | 20 | 35 | 175 |
| Dibromochloromethane | ND | 20 | 17.0 | 85.0 | 20 | 16.0 | 80.0 | 6.06 | 20 | 35 | 175 |
| Dibromomethane | ND | 20 | 20.0 | 100 | 20 | 20.0 | 100 | 0 | 20 | 35 | 175 |
| Dichlorodifluoromethane | ND | 20 | 16.0 | 80.0 | 20 | 21.0 | 105 | 27.0 * | 20 | 35 | 175 |
| Ethylbenzene | ND | 20 | 20.0 | 100 | 20 | 20.0 | 100 | 0 | 20 | 35 | 175 |
| Hexachlorobutadiene | ND | 20 | 16.0 | 80.0 | 20 | 16.0 | 80.0 | 0 | 20 | 43 | 144 |
| Isopropylbenzene | ND | 20 | 19.0 | 95.0 | 20 | 18.0 | 90.0 | 5.41 | 20 | 35 | 175 |
| Methyl tert-butyl ether | ND | 40 | 36.0 | 82.5 | 40 | 38.0 | 87.5 | 5.41 | 20 | 35 | 175 |
| Methylene chloride | ND | 20 | 16.0 | 80.0 | 20 | 15.0 | 75.0 | 6.45 | 20 | 35 | 175 |
| Naphthalene | ND | 20 | 16.0 | 80.0 | 20 | 17.0 | 85.0 | 6.06 | 20 | 20 | 210 |
| n-Butylbenzene | ND | 20 | 20.0 | 100 | 20 | 20.0 | 100 | 0 | 20 | 35 | 175 |
| n-Propylbenzene | ND | 20 | 17.0 | 85.0 | 20 | 17.0 | 85.0 | 0 | 20 | 35 | 175 |
| sec-Butylbenzene | ND | 20 | 19.0 | 95.0 | 20 | 18.0 | 90.0 | 5.41 | 20 | 35 | 175 |
| Styrene | ND | 20 | 18.0 | 90.0 | 20 | 18.0 | 90.0 | 0 | 20 | 35 | 175 |
| tert-Butylbenzene | ND | 20 | 20.0 | 100 | 20 | 21.0 | 105 | 4.88 | 20 | 35 | 175 |
| Tetrachloroethene | ND | 20 | 22.0 | 110 | 20 | 20.0 | 100 | 9.52 | 20 | 30 | 250 |
| Toluene | ND | 20 | 22.0 | 110 | 20 | 21.0 | 105 | 4.65 | 24 | 70 | 131 |
| Trichloroethene | ND | 20 | 21.0 | 105 | 20 | 21.0 | 105 | 0 | 21 | 60 | 140 |
| Trichlorofluoromethane | ND | 20 | 17.0 | 85.0 | 20 | 19.0 | 95.0 | 11.1 | 20 | 17 | 250 |
| Vinyl acetate | ND | 20 | 18.0 | 90.0 | 20 | 19.0 | 95.0 | 5.41 | 20 | 10 | 250 |
| Vinyl chloride | ND | 20 | 14.0 | 70.0 | 20 | 16.0 | 80.0 | 13.3 | 20 | 35 | 175 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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## Quality Control Report

### Conoco Phillips

**COP Johnston Federal #4**

**Analysis:** Volatile Organics by Method 8260B **WorkOrder:** 09020023
**Method:** SW8260B **Lab Batch ID:** R264735

**Matrix Spike (MS) / Matrix Spike Duplicate (MSD)**

Sample Spiked: 09011215-02
RunID: N_090206A-4899306 Units: ug/L
Analysis Date: 02/06/2009 17:26 Analyst: LT

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | ND | 20 | 17.0 | 85.0 | 20 | 18.0 | 90.0 | 5.71 | 20 | 35 | 175 |
| cis-1,3-Dichloropropene | ND | 20 | 17.0 | 85.0 | 20 | 17.0 | 85.0 | 0 | 20 | 35 | 175 |
| m,p-Xylene | ND | 40 | 42.0 | 105 | 40 | 41.0 | 102 | 2.41 | 20 | 35 | 175 |
| o-Xylene | ND | 20 | 21.0 | 105 | 20 | 20.0 | 100 | 4.88 | 20 | 35 | 175 |
| trans-1,2-Dichloroethene | ND | 20 | 17.0 | 85.0 | 20 | 17.0 | 85.0 | 0 | 20 | 35 | 175 |
| trans-1,3-Dichloropropene | ND | 20 | 17.0 | 85.0 | 20 | 17.0 | 85.0 | 0 | 20 | 35 | 175 |
| 1,2-Dichloroethene (total) | ND | 40 | 34.0 | 85.0 | 40 | 35.0 | 87.5 | 2.90 | 20 | 35 | 175 |
| Xylenes,Total | ND | 60 | 63 | 100 | 60 | 61 | 100 | 3.2 | 20 | 35 | 175 |
| Surr: 1,2-Dichloroethane-d4 | ND | 50 | 48 | 96.0 | 50 | 47.0 | 94.0 | 2.11 | 30 | 62 | 130 |
| Surr: 4-Bromofluorobenzene | ND | 50 | 53 | 106 | 50 | 53.0 | 106 | 0 | 30 | 70 | 130 |
| Surr: Toluene-d8 | ND | 50 | 51 | 102 | 50 | 52.0 | 104 | 1.94 | 30 | 74 | 122 |

**Qualifiers:**
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits



QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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# Quality Control Report

## Conoco Phillips

**COP Johnston Federal #4**

**Analysis:** Volatile Organics by Method 8260B
**Method:** SW8260B
**WorkOrder:** 09020023
**Lab Batch ID:** R264800

### Method Blank

RunID: N_090209B-4900480 Units: ug/L
Analysis Date: 02/09/2009 13:12 Analyst: LT
Preparation Date: 02/09/2009 13:12 Prep By: Method

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 09020023-01A | MW-1 |

| Analyte | Result | Rep Limit |
|---|---|---|
| 1,2,4-Trimethylbenzene | ND | 5.0 |
| 1,3,5-Trimethylbenzene | ND | 5.0 |
| 2-Hexanone | ND | 10 |
| Benzene | ND | 5.0 |
| Ethylbenzene | ND | 5.0 |
| Toluene | ND | 5.0 |
| m,p-Xylene | ND | 5.0 |
| o-Xylene | ND | 5.0 |
| Xylenes,Total | ND | 5.0 |
| Surr: 1,2-Dichloroethane-d4 | 96.0 | 62-130 |
| Surr: 4-Bromofluorobenzene | 94.0 | 70-130 |
| Surr: Toluene-d8 | 100.0 | 74-122 |

### Laboratory Control Sample (LCS)

RunID: N_090209B-4900479 Units: ug/L
Analysis Date: 02/09/2009 12:43 Analyst: LT
Preparation Date: 02/09/2009 12:43 Prep By: Method

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| 1,2,4-Trimethylbenzene | 20.0 | 16.0 | 80.0 | 53 | 147 |
| 1,3,5-Trimethylbenzene | 20.0 | 16.0 | 80.0 | 57 | 146 |
| 2-Hexanone | 20.0 | 18.0 | 90.0 | 34 | 182 |
| Benzene | 20.0 | 19.0 | 95.0 | 76 | 126 |
| Ethylbenzene | 20.0 | 19.0 | 95.0 | 67 | 122 |
| Toluene | 20.0 | 20.0 | 100 | 70 | 131 |
| m,p-Xylene | 40.0 | 41.0 | 102 | 72 | 150 |
| o-Xylene | 20.0 | 21.0 | 105 | 78 | 141 |
| Xylenes,Total | 60 | 62 | 100 | 72 | 150 |
| Surr: 1,2-Dichloroethane-d4 | 50.0 | 50 | 100 | 62 | 130 |
| Surr: 4-Bromofluorobenzene | 50.0 | 57 | 114 | 70 | 130 |
| Surr: Toluene-d8 | 50.0 | 51 | 102 | 74 | 122 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



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## Quality Control Report

### Conoco Phillips

**COP Johnston Federal #4**

| | | | |
|---|---|---|---|
| ***Analysis:*** | ***Volatile Organics by Method 8260B*** | ***WorkOrder:*** | **09020023** |
| **Method:** | **SW8260B** | **Lab Batch ID:** | **R264800** |

Sample Spiked: 09020222-02
RunID: N_090209B-4900482 Units: ug/L
Analysis Date: 02/09/2009 15:05 Analyst: LT

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trimethylbenzene | ND | 20 | 17.0 | 85.0 | 20 | 16.0 | 80.0 | 6.06 | 20 | 35 | 175 |
| 1,3,5-Trimethylbenzene | ND | 20 | 16.0 | 80.0 | 20 | 16.0 | 80.0 | 0 | 20 | 35 | 175 |
| 2-Hexanone | ND | 50 | 24.0 | 48.0 | 50 | 23.0 | 46.0 | 4.26 | 20 | 10 | 250 |
| Benzene | ND | 20 | 19.0 | 95.0 | 20 | 18.0 | 90.0 | 5.41 | 22 | 76 | 127 |
| Ethylbenzene | ND | 20 | 19.0 | 95.0 | 20 | 19.0 | 95.0 | 0 | 20 | 35 | 175 |
| Toluene | ND | 20 | 22.0 | 110 | 20 | 20.0 | 100 | 9.52 | 24 | 70 | 131 |
| m,p-Xylene | ND | 40 | 40.0 | 100 | 40 | 39.0 | 97.5 | 2.53 | 20 | 35 | 175 |
| o-Xylene | ND | 20 | 22.0 | 110 | 20 | 20.0 | 100 | 9.52 | 20 | 35 | 175 |
| Xylenes,Total | ND | 60 | 62 | 100 | 60 | 59 | 98 | 5.0 | 20 | 35 | 175 |
| Surr: 1,2-Dichloroethane-d4 | ND | 50 | 46 | 92.0 | 50 | 45.0 | 90.0 | 2.20 | 30 | 62 | 130 |
| Surr: 4-Bromofluorobenzene | ND | 50 | 52 | 104 | 50 | 53.0 | 106 | 1.90 | 30 | 70 | 130 |
| Surr: Toluene-d8 | ND | 50 | 52 | 104 | 50 | 51.0 | 102 | 1.94 | 30 | 74 | 122 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

# Quality Control Report

## Conoco Phillips

**COP Johnston Federal #4**

**Analysis:** Ion Chromatography
**Method:** E300.0
**WorkOrder:** 09020023
**Lab Batch ID:** R264635

### Method Blank

RunID: IC2_090203D-4897228 Units: mg/L
Analysis Date: 02/03/2009 18:10 Analyst: BDG

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 09020023-01E | MW-1 |

| Analyte | Result | Rep Limit |
|---|---|---|
| Nitrogen,Nitrate (As N) | ND | 0.50 |

### Laboratory Control Sample (LCS)

RunID: IC2_090203D-4897229 Units: mg/L
Analysis Date: 02/03/2009 18:26 Analyst: BDG

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Nitrogen,Nitrate (As N) | 10.00 | 9.192 | 91.92 | 90 | 110 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09020115-01
RunID: IC2_090203D-4897231 Units: mg/L
Analysis Date: 02/03/2009 19:00 Analyst: BDG

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen,Nitrate (As N) | ND | 10 | 9.352 | 93.52 | 10 | 8.683 | 86.83 | 7.419 | 20 | 80 | 120 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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# Quality Control Report

## Conoco Phillips

**COP Johnston Federal #4**

**Analysis:** Ion Chromatography **WorkOrder:** 09020023
**Method:** E300.0 **Lab Batch ID:** R264859

### Method Blank

RunID: IC2_090209A-4901060 Units: mg/L
Analysis Date: 02/09/2009 17:30 Analyst: BDG

**Samples in Analytical Batch:**

| Lab Sample ID | Client Sample ID |
|---|---|
| 09020023-01E | MW-1 |

| Analyte | Result | Rep Limit |
|---|---|---|
| Sulfate | ND | 0.50 |

### Laboratory Control Sample (LCS)

RunID: IC2_090209A-4901061 Units: mg/L
Analysis Date: 02/09/2009 17:47 Analyst: BDG

| Analyte | Spike Added | Result | Percent Recovery | Lower Limit | Upper Limit |
|---|---|---|---|---|---|
| Sulfate | 10.00 | 10.09 | 100.9 | 85 | 115 |

### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 09011207-01
RunID: IC2_090209A-4901088 Units: mg/L
Analysis Date: 02/10/2009 0:20 Analyst: BDG

| Analyte | Sample Result | MS Spike Added | MS Result | MS % Recovery | MSD Spike Added | MSD Result | MSD % Recovery | RPD | RPD Limit | Low Limit | High Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 270.7 | 500 | 707.6 | 87.38 | 500 | 732.5 | 92.37 | 3.461 | 20 | 80 | 120 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count



QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

*Sample Receipt Checklist*

*And*

*Chain of Custody*

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

# Sample Receipt Checklist

| | | | |
|---|---|---|---|
| Workorder: | 09020023 | Received By: | L_C |
| Date and Time Received: | 1/31/2009 11:00:00 AM | Carrier name: | Fedex-Priority |
| Temperature: | 3.0°C | Chilled by: | Water Ice |

| | | | | | |
|---|---|---|---|---|---|
| 1. | **Shipping container/cooler in good condition?** | Yes ☑ | No ☐ | Not Present ☐ | |
| 2. | **Custody seals intact on shippping container/cooler?** | Yes ☐ | No ☐ | Not Present ☑ | |
| 3. | **Custody seals intact on sample bottles?** | Yes ☐ | No ☐ | Not Present ☑ | |
| 4. | **Chain of custody present?** | Yes ☐ | No ☑ | | |
| | 1. Did not receive chain of custody along with samples in cooler. | | | | |
| 5. | **Chain of custody signed when relinquished and received?** | Yes ☐ | No ☑ | | |
| 6. | **Chain of custody agrees with sample labels?** | Yes ☐ | No ☑ | | |
| 7. | **Samples in proper container/bottle?** | Yes ☑ | No ☐ | | |
| 8. | **Sample containers intact?** | Yes ☐ | No ☑ | | |
| | 1. Received 1-VOA container broken for sample ID:"MW-2". | | | | |
| 9. | **Sufficient sample volume for indicated test?** | Yes ☑ | No ☐ | | |
| 10. | **All samples received within holding time?** | Yes ☐ | No ☑ | | |
| | 2. Received analysis Nitrate out of hold sampled on 1/29/09 10:50 AM and received samples on 1/31/09 11:00 AM. 4. Did not receive set of Trip Blanks listed on chain. | | | | |
| 11. | **Container/Temp Blank temperature in compliance?** | Yes ☑ | No ☐ | | |
| 12. | **Water - VOA vials have zero headspace?** | Yes ☐ | No ☐ | VOA Vials Not Present ☑ | |
| 13. | **Water - Preservation checked upon receipt (except VOA*)?** | Yes ☐ | No ☐ | Not Applicable ☑ | |

***VOA Preservation Checked After Sample Analysis**

**SPL Representative:** Cardenas, Erica
**Contact Date & Time:** 2/2/2009 2:00:00 PM
**Client Name Contacted:** Kelly Blanchard

**Non Conformance Issues:** 1. Logged in samples as per E-mail chain received on 2/2/09. 2. Logged in samples and proceeded with analysis as per PM. 3. Logged in remaining containers for analysis. 4. Logged in and placed on hold with no analysis.

**Client Instructions:** Proceed with analysis.

8880 Interchange Drive, Houston, TX 77054

# Analysis Request and Chain of Custody Record

SPL Workorder No: 0902002

| | |
|---|---|
| Company Name: Tetra Tech / Conoco Phillips | |
| Contact: Kelly Blanchard | |
| Address: 6121 Indian School Rd. NE, Ste. 200 | |
| Phone/Fax: (505) 237-8440 / (505) 237-8666 | |
| Email Address: kelly.blanchard@tetratech.com | |
| Invoice To: | |
| Purchase Order No: | |
| Project Name/No: Johnson Federal #4 | |
| Site Address: | |
| Sampled By: Christin Mathews | |

**Sampling Event Description**

- Quarterly [X]
- Semi-Annual [ ]
- WC-Waste Char. [ ]
- Other (describe below) [ ]

**QA/QC Level**

- TRRP [ ] LVL 3 [ ]
- STD [ ] Other [ ]

| SAMPLE ID | DATE | TIME | Water | Soil | Sludge | Other | Number Containers | Container Type | Preservative | VOC | BTEX | Sulfate, Nitrate | GRO | DRO | SVOC | Fe, Ca, Na, Mg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 1.29.09 | 1050 | X | | | | 3 | VOA | HCL | X | X | | | | | |
| MW-1 | 1.29.09 | 1050 | X | | | | 3 | VOA | HCL | | | | X | | | |
| MW-1 | 1.29.09 | 1050 | X | | | | 2 | Amber Vial | HCL | | | | | X | | |
| MW-1 | 1.29.09 | 1050 | X | | | | 2 | 1L/Plastic | $HNO_3$ | | | | | | | X |
| MW-1 | 1.29.09 | 1050 | X | | | | 1 | 1L/Plastic | None | | | X | | | | |
| MW-1 | 1.29.09 | 1050 | X | | | | 2 | 32/Amber | None | | | | | | X | |
| MW-2 | 1.29.09 | 1015 | X | | | | 3 | VOA | HCL | | X | | | | | |
| MW-3 | 1.29.09 | 1030 | X | | | | 3 | VOA | HCL | | X | | | | | |
| MW-4 | 1.29.09 | 1105 | X | | | | 3 | VOA | HCL | | X | | | | | |

**TAT**

- 24hr [ ] 72hr [ ]
- 48hr [ ] 10 day [ ]
- Other [ ]

Special Detection Limits (Specify):

Special Reporting Requirements (Specify):

Consultant Remarks:

Laboratory Remarks:

PM review: 3.6.09

| | Date | Time | |
|---|---|---|---|
| Relinquished by Sampler: Christin Mathews | 1.30.09 | 1500 | Received by: |
| Relinquished by: | Date | Time | Received by: |
| Relinquished by: | Date 1/31/09 | Time 11:00 | Received by SPL, Inc. |

8880 Interchange Drive, Houston, TX 77054

# Analysis Request and Chain of Custody Record

SPL Workorder No: 0902023

| | |
|---|---|
| Company Name: Tetra Tech / Conoco Phillips | |
| Contact: Kelly Blanchard | |
| Address: 6121 Indian School Rd. NE, Ste. 200 | |
| Phone/Fax: (505) 237-8440 / (505) 237-0555 | |
| Email Address: kelly.blanchard@tetratech.com | |
| Invoice To: | |
| Purchase Order No: | |
| Project Name/No: ~~Federal #10~~ Johnson Fed #4 | |
| Site Address: | |
| Sampled By: Christine Mathews | |

**Sampling Event Description**

- Quarterly [X]
- Semi-Annual [ ]
- WC-Waste Char. [ ]
- Other (describe below) [ ]

**QA/QC Level**

- TRRP [ ] LVL 3 [ ]
- STD [ ] Other [ ]

| SAMPLE ID | DATE | TIME | Matrix: Water | Soil | Sludge | Other | Number Containers | Container Type | Preservative | REQUESTED ANALYSIS: BTEX - 8260 | Nitrite | Sulfate, Orthophosphate (PO | Ferrous Iron | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duplicate | 1.29.09 | 1110 | X | | | | 3 | VOA | HCL | X | | | | | | |
| Trip Blank | 1.30.09 | 1430 | X | | | | 2 | VOA | HCL | X | | | | | | |
| | | | | | | | | | | | | | | | | |
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**TAT**

- 24hr [ ] 72hr [ ]
- 48hr [ ] 10 day [ ]
- Other [ ]

Special Detection Limits (Specify):

Special Reporting Requirements (Specify):

Consultant Remarks:

Laboratory Remarks:

-3.0°C

PM review:

| | Date | Time | |
|---|---|---|---|
| Relinquished by Sampler: | 1.30.09 | 1500 | Received by: |
| Relinquished by: | Date: | Time | Received by: |
| Relinquished by: | Date: 1/31/09 | Time: 11:00 | Received by SPL, Inc.: |