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JUNE 2011

3R071

2010 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. 114-690129

June 2011

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1.0 INTRODUCTION

This report presents the results of an annual groundwater monitoring event conducted by Tetra Tech, Inc. (Tetra Tech) on September 22, 2010 at the ConocoPhillips Company Johnston Federal No. 4 Metering Station (Site) 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**). A Site detail map is included as **Figure 2**. The Johnston Federal No. 4 wellhead, API # 30-045-10130, is located approximately one-half mile to the southwest of the metering station.

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 (Production Pit #1, **Figure 2**) soils was found to be below New Mexico Oil Conservation Division (OCD) recommended action levels for this constituent, and the pit was subsequently granted closure by OCD. Soil from the tank drain pit (Production Pit #2, **Figure 2**) 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. Following laboratory results, approximately 3,055 cubic yards of hydrocarbon-impacted soil was excavated in December 1998. Once complete, the excavation was backfilled with clean fill material, and the OCD granted pit closure. A groundwater monitoring well, MW-1, was installed at the Site to a depth of 50 feet below ground surface (bgs) in May of 1999. Burlington Resources sampled Monitor Well MW-1 on a quarterly basis until the acquisition of Burlington Resources by ConocoPhillips in March of 2006. Tetra Tech began sampling MW-1 in November 2007. In August 2008, three additional groundwater monitoring wells were installed under the supervision of Tetra Tech by WDC Exploration and Drilling of Peralta, NM (WDC). The existing Burlington Resources/ConocoPhillips monitor well network at the Site includes MW-1 MW-2, MW-3, and MW-4. El Paso Natural Gas (El Paso) owns three additional Site monitoring wells. The monitoring schedule of the El Paso-owned monitoring wells is not known. Monitor Wells MW-2, MW-3 and MW-4 were along with MW-1 incorporated

into an annual sampling schedule beginning on October 24, 2008. A generalized geologic cross section for the Site is presented as **Figure 3**.

2.0 GROUNDWATER MONITORING METHODOLOGY AND RESULTS

2.1 Groundwater Monitoring Methodology

Groundwater Elevation Measurements

On September 22, 2010, groundwater elevation measurements were recorded for Monitor Wells MW-1, MW-2, MW-3, and MW-4 using a dual interface probe. Groundwater elevations are detailed in **Table 2**. A groundwater elevation contour map is presented as **Figure 4.** Based on September 2010 monitoring event data, groundwater flow remains to the east southeast and is consistent with recent and historical records at this site. There was no measureable thickness of product present in of the site monitoring wells during the 2010 annual groundwater sampling event, however, a slight hydrocarbon sheen was observed in the purge water generated from Monitoring Well MW-1.

Groundwater sampling

Monitor wells MW-1, MW-2, MW-3, and MW-4 were sampled. Approximately three well volumes were purged from each monitor well with a dedicated polyethylene 1.5-inch disposable bailer. Groundwater samples were placed in laboratory prepared bottles, packed on ice, and shipped under chain of custody documentation to Southern Petroleum Laboratories in Houston, Texas. The samples were analyzed for the presence of BTEX and naphthathalene in accordance with Environmental Protection Agency (EPA) Method 8260B, sulfate by EPA Method 300.0, and for dissolved manganese by EPA Method 6010B. Groundwater sampling field forms are included as **Appendix A**.

2.2 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.

During the September 2010 groundwater sampling event, groundwater concentrations exceeded the New Mexico Water Quality Control Commission (NMWQCC) standard for:

- **Benzene**

  The NMWQCC standard for benzene is 10 micrograms per liter (µg/L). A groundwater sample collected from MW-1 contained benzene at a concentration of 3,500 µg/L; while the groundwater sample collected from MW-4 contained a concentration of 19 µg/L.

- **Toluene**

  The NMWQCC standard for toluene is 750 ug/L. A groundwater sample collected from MW-1 contained a concentration of toluene of 980 µg/L.

- **Xylenes**

  The NWQCC standard for total xylenes is 620 ug/L. The concentration of xylenes found in a groundwater sample collected from MW-1 was 7,500 µg/L.

- **Naphthalene**

  The NMWQCC standard for naphthalene is 40 ug/L. The concentration of naphthalene found in a groundwater sample collected from MW-1 was 49 ug/L.

- **Dissolved Manganese**

  The NMWQCC standard for dissolved Manganese is 0.2 milligrams per liter (mg/L). The concentration of dissolved manganese found in a groundwater sample collected from MW-1 was 0.752 mg/L; 1.11 mg/L from MW-3; and 1.27 mg/L from MW-4.

- **Sulfate**

  The NMWQCC standard for sulfate is 600 mg/L. The concentration of sulfate found in a groundwater sample collected from MW-2 was 1,350 mg/L; 1,060 mg/L from MW-3; and 1,040 mg/L from MW-4.

The corresponding laboratory analysis report for the September 2010 sampling event is included as **Appendix B**. A BTEX concentration map for the September 2010 sampling event is included as **Figure 5**.

3.0 CONCLUSIONS AND RECOMMENDATIONS

Monitor Wells MW-1 and MW-4 continue to exceed NMWQCC standards for BTEX constituents. Concentrations of sulfate, dissolved manganese, and naphthalene have been detected above NMWQCC groundwater quality standards in Site monitor wells. Tetra Tech recommends continued annual sampling of Site monitor wells until all constituents of concern begin to reach NMWQCC levels. Tetra Tech will begin sampling the Site quarterly once all constituents are near or below NMWQCC standards.

The next monitoring event at the Johnston Federal No. 4 Metering Station is scheduled to take place during September of 2011 and will include analyses for BTEX, naphthalene, dissolved manganese and sulfate.

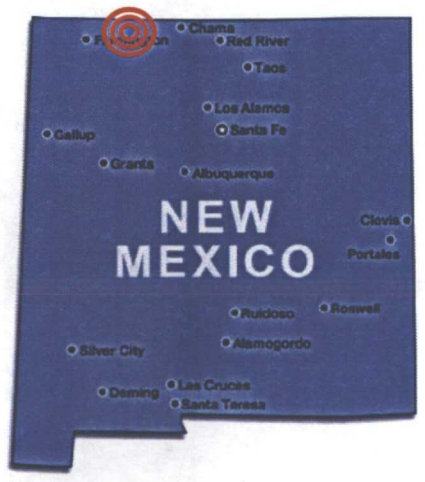
Please contact Kelly Blanchard at 505-237-8440 or kelly.blanchard@tetratech.com if you have any questions or require additional information.

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

N

TETRA TECH, INC.

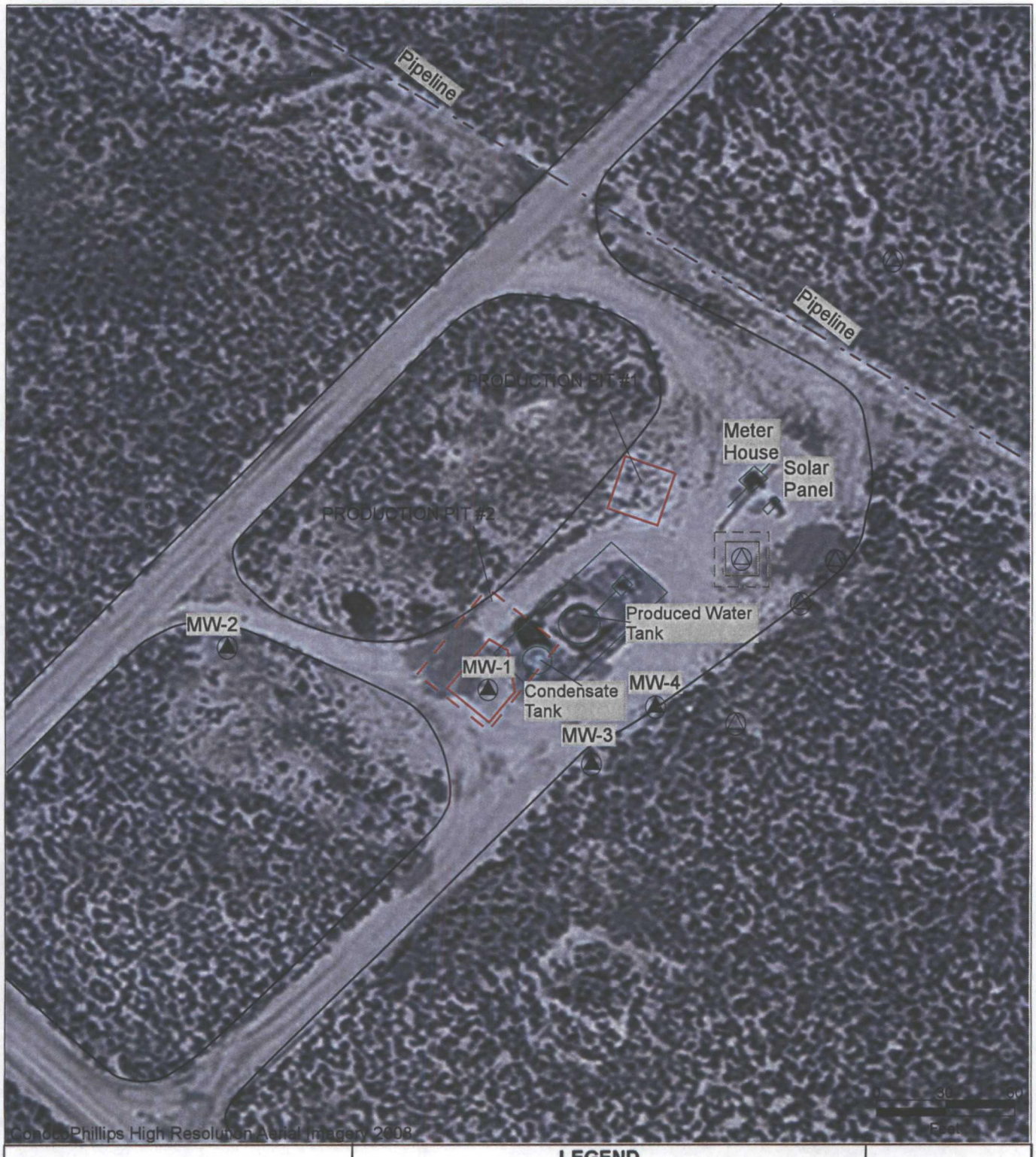


FIGURE 2:
SITE LAYOUT MAP
CONOCOPHILLIPS COMPANY
JOHNSTON FEDERAL No. 4
METERING STATION
Sec 27, T31N, R09W
Aztec, New Mexico

LEGEND

- MONITORING WELL
- EL PASO MONITORING WELL
- EQUIPMENT and BERM
- FORMER PRODUCTION PIT
- APPROXIMATE EXCAVATION LOCATION
- FORMER EI PASO DEHYDRATOR PIT
- APPROXIMATE EL PASO EXCAVATION LOCATION

N

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Johnston Federal #4 - Cross-Section A-A'

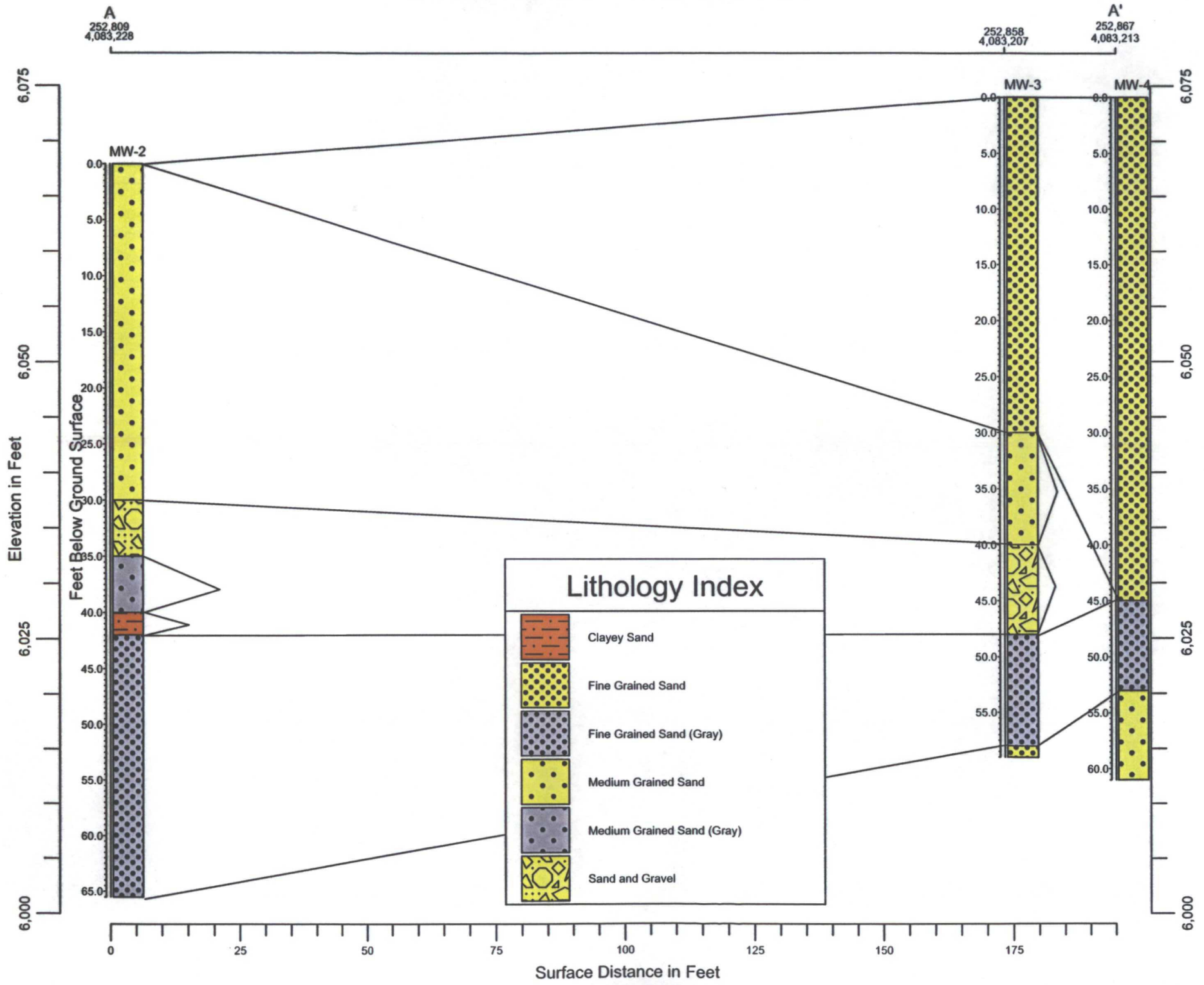

FIGURE 4:
GROUNDWATER CONTOUR ELEVATION MAP
CONOCOPHILLIPS COMPANY
JOHNSTON FEDERAL No. 4
METERING STATION
Sec 27, T31N, R09W
Aztec, New Mexico

LEGEND

- MONITORING WELL
- EL PASO MONITORING WELL
- GROUNDWATER CONTOUR LINE DASHED WHERE INFERRED
- EQUIPMENT and BERM

N

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LEGEND

- MONITORING WELL
- EL PASO MONITORING WELL
- EQUIPMENT and BERM
- BENZENE CONCENTRATION CONTOUR

N

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FIGURE 5:
BTEX CONCENTRATION MAP

CONOCOPHILLIPS COMPANY
JOHNSTON FEDERAL No. 4
METERING STATION
Sec 27, T31N, R09W
Aztec, New Mexico

TABLES

Table 1. ConocoPhillips Company Johnston Federal No. 4 Metering Station 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.
September 1994	Pit Excavation	El Paso Energy excavated ~60 cy of soil from their former unlined pit.
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.

Date/Time Period	Event/Action	Description/Comments
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 pit #2. Burlington Resources begins monitoring MW-1 on a quarterly basis.
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 under the supervision of Tetra Tech by WDC Exploration and Wells of Peralta, NM.
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.
September 25, 2009	2009 annual groundwater monitoring	Tetra Tech conducts annual groundwater monitoring at the site for MW-1 through MW-4 including analyses for BTEX, naphthalene, dissolved Fe and Mn and sulfate.
September 22, 2010	2010 annual groundwater monitoring	Tetra Tech conducts annual groundwater monitoring at the site for MW-1 through MW-4 including analyses for BTEX, naphthalene, dissolved Mn and sulfate.

Table 2. ConocoPhillips Company Johnston Federal No. 4 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
				9/25/2009	46.52	53.48
				9/22/2010	46.60	53.40
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
				9/25/2009	42.82	54.89
				9/22/2010	43.01	54.70
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
				9/25/2009	42.04	52.61
				9/22/2010	42.17	52.48
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
				9/25/2009	43.20	51.59
				9/22/2010	43.39	51.40

ft = Feet

TOC = Top of casing

bgs = below ground surface

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

NM - Not measured

Table 3. ConocoPhillips Company Johnston Federal No. 4 Groundwater Laboratory Analytical Results Summary

Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Napthalene (µg/L)	Dissolved Manganese (mg/L)	Dissolved Iron (mg/L)	Sulfate (mg/L)
MW-1	5/25/1999	8,700	2,900	2,800	2,900	NO DATA			
	9/1/1999	Free Phase Product Detected - No Sample Collected							
	12/1/1999	4,700	1,300	900	10,000				
	1/18/2000	3,600	820	840	7,500				
	5/17/2000	6,900	1,100	1,500	17,000				
	9/8/2000	4,600	620	930	10,000				
	12/20/2000	< 0.2	1	34	61				
	3/27/2001	5,430	641	991	9,830				
	6/27/2001	5,870	900	990	10,400				
	9/17/2001	5,910	750	980	10,700				
	12/19/2001	7,200	650	1,020	11,300				
	3/25/2002	5,520	830	1,190	10,500				
	6/26/2002	516	66	79	863				
	9/24/2002	5,310	8,000	880	13,960				
	12/30/2002	7,660	10,200	760	14,140				
	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	6,160	8,100	470	15,840				
	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	3,170	3,740	1,060	30,130				
	6/21/2006	4,900	3,280	448	2,390				
	10/20/2006	Free Phase Product Detected - No Sample Collected							
	12/13/2006	5,300	7,200	870	15,450				
	3/27/2007	6,870	5,720	210	12,160				
	6/25/2007	5,680	1,830	400	9,480				
	11/9/2007	NA	NA	NA	NA				
	1/15/2008	NA	NA	NA	NA				
	4/30/2008	6,300	1,800	280 J	8,600				
	7/23/2008	7,100	2,200	450	10,600				
	10/24/2008	6,000	2,100	400	9,000	44	NA	NA	NA
	1/29/2009	6,700	2,200	630	14,500	61	1.1*	0.347*	315
	9/25/2009	3,900	1,500	680	9,800	40	1.11	<0.02	429
	9/22/2010	3,500	980	630	7,500	49	0.752	NA	190

Table 3. ConocoPhillips Company Johnston Federal No. 4 Groundwater Laboratory Analytical Results Summary

Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Napthalene (µg/L)	Dissolved Manganese (mg/L)	Dissolved Iron (mg/L)	Sulfate (mg/L)
MW-2	10/24/2008	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	<5	0.337*	2.08*	**974**
	1/29/2009	< 0.5	< 0.5	< 0.5	< 0.5	NA	NA	NA	NA
	9/25/2009	<1	<1	<1	<2	<1	0.04	<0.02	**1,260**
	9/22/2010	<1.0	<1.0	<1.0	<1.0	<1.0	0.0074	NA	**1,350**
MW-3	10/24/2008	**20**	< 0.5 U	< 0.5 U	24	<5	1.43*	0.542*	**714**
	1/29/2009	**12**	< 0.5	< 0.5	5	NA	NA	NA	NA
	9/25/2009	2.1	<1	<1	<2	<1	**1.24**	<0.02	**1,070**
	9/22/2010	4.2	<1.0	<1.0	<1.0	<1.0	**1.11**	NA	**1,060**
MW-4	10/24/2008	**24**	< 0.5 U	6	10	<5	0.977*	1.16*	**678**
	1/29/2009	**110**	6	9	147	<5	NA	NA	NA
	9/25/2009	8.8	<1	5.7	2	<1	**1.24**	0.508	**968**
	9/22/2010	**19**	5	6.9	5.7	<1.0	**1.27**	NA	**1040**
NMWQCC Groundwater Quality Standards		**10**	**750**	**750**	**620**	**30**	**0.2**	**1**	**600**

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
* Results are shown for total metals analysis and can not be compared to the NMWQCC standard for dissolved metals

APPENDIX A

Groundwater Sampling Field Forms

TETRA TECH, INC.

WATER SAMPLING FIELD FORM

Project Name Johnston Federal #4 Page 1 of 4

Project No.

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

Site/Well No. MW-1 Coded/ Replicate No. 1120 Date 9.22.10

Weather Rainy Time Sampling Began 1140 Time Sampling Completed 1145

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 ~~51.79~~ 51.73 Water-Level Elevation

Held ____ Depth to Water Below MP 46.60 Diameter of Casing 2"

Wet ____ Water Column in Well 5.13 Gallons Pumped/Bailed Prior to Sampling 2.25

Gallons per Foot 0.16

Gallons in Well .82 x 3 = 2.46 Sampling Pump Intake Setting (feet below land surface) ←

Purging Equipment Purge pump / Bailer

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature (°C)	pH	Conductivity (µS/cm³)	TDS (g/L)	DO (mg/L)	ORP (mV)

Sampling Equipment Purge Pump/Bailer No parameters taken due to sheen

Constituents Sampled	Container Description	Preservative
BTEX, Naphthalene	3 40mL VOA's	HCl
dissolved Mn	1-16oz plastic	None
SO4	1-16oz plastic	None

Remarks Spotty sheen and strong hydrocarbon odor detected / Slow recharge

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

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WATER SAMPLING FIELD FORM

Project Name Johnston Federal #4 Page 2 of 4

Project No.

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

Site/Well No. MW-2 Coded/ Replicate No. Date 9.22.10

Weather Rainy Time Sampling Began 1005 Time Sampling Completed 1030

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 ~~65.5~~ 64.44 Water-Level Elevation

Held Depth to Water Below MP 43.01 Diameter of Casing 2"

Wet Water Column in Well 21.43 Gallons Pumped/Bailed Prior to Sampling 10.25

Gallons per Foot 0.16

Gallons in Well 3.42 x 3 = 10.28 Sampling Pump Intake Setting (feet below land surface)

Purging Equipment Purge pump / Bailer

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature (°C)	pH	Conductivity (µS/cm³)	TDS (g/L)	DO (mg/L)	ORP (mV)	DO%	Vol
~~1021~~	13.77	7.16	2034	1.322	4.56	46.8	44.2	9.25
1024	13.79	7.18	2031	1.320	4.39	52.5	42.5	9.5
1027	13.79	7.18	2033	1.322	4.54	56.9	44.0	10.0

Sampling Equipment Purge Pump/Bailer

Constituents Sampled	Container Description	Preservative
BTEX; Naphthalene	3 40mL VOA's	HCl
dissolved Mn; ~~Sulfate~~	2 @ 1 liter plastic	None
SO4	1-1 liter plastic	None

Remarks water is light brown, no odor or sheen observed

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

TETRA TECH, INC.

WATER SAMPLING FIELD FORM

Project Name Johnston Federal #4 Page 3 of 4

Project No.

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

Site/Well No. MW-3 Coded/ Replicate No. Date 9.22.10

Weather Rainy Time Sampling Began Time Sampling Completed 1105

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 ~~59~~ 57.48 Water-Level Elevation

Held Depth to Water Below MP 42.17 Diameter of Casing 2"

Wet Water Column in Well 15.31 Gallons Pumped/Bailed Prior to Sampling 7.5

Gallons per Foot 0.16

Gallons in Well 2.44 x 3 = 7.34 Sampling Pump Intake Setting (feet below land surface)

Purging Equipment Purge pump / Bailer

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature (°C)	pH	Conductivity (µS/cm)	TDS (g/L)	DO (mg/L)	ORP (mV)	DO%	Vol
1054	15.09	7.23	1819	1.182	2.16	-73.8	20.8	6.5
1058	15.09	7.29	1839	1.195	1.78	-61.7	17.7	7.0
1100	15.09	7.31	1844	1.198	1.85	-48.1	18.4	7.5

Sampling Equipment Purge Pump/Bailer

Constituents Sampled	Container Description	Preservative
BTEX, Naphthalene	3 40mL VOA's	HCl
dissolved Mn	1 16oz plastic	None
SO4	1-16oz plastic	None

Remarks H_2O is brown with slight hydrocarbon odor observed

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

TETRA TECH, INC.

WATER SAMPLING FIELD FORM

Project Name Johnston Federal #4 Page 4 of 4

Project No.

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

Site/Well No. MW-4 Coded/ Replicate No. Date 9.22.10

Weather Rainy Time Sampling Began Time Sampling Completed ~~1120~~ 1005

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 ~~61~~ 60.03 Water-Level Elevation

Held Depth to Water Below MP 43.39 Diameter of Casing 2"

Wet Water Column in Well 16.64 Gallons Pumped/Bailed Prior to Sampling

Gallons per Foot 0.16

Gallons in Well 2.16x3 = 7.98 Sampling Pump Intake Setting (feet below land surface)

Purging Equipment Purge pump / Bailer

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature (°C)	pH	Conductivity (µS/cm)	TDS (g/L)	DO (mg/L)	ORP (mV)	DO%	Vol
0958	15.25	7.11	1808	1.176	3.93	-108.5	39.0	2.0
1001	15.26	7.12	1905	1.173	2.11	-103.0	20.9	4.0
1003	15.28	7.13	1806	1.174	2.34	-93.5	23.4	8.0

Sampling Equipment Purge Pump/Bailer

Constituents Sampled	Container Description	Preservative
BTEX, Naphthalene	3 40mL VOA's	HCl
dissolved Mn	1-1L0g plastic	None
SO4	1-1L0g plastic	None

Remarks H_2O is brown with slight hydrocarbon odor observed

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 B

Groundwater Laboratory Analysis Report

SPL Inc.
8880 Interchange Drive
Houston, TX 77054
Phone: (713) 660-0901
Fax: (713) 660-8975

Certificate of Analysis

October 13, 2010

Workorder: H10090573

Kelly Blanchard
Tetra Tech
6121 Indian School Road NE
Suite 200
Albuquerque, NM 87110

Project: COP - Johnston Federal

Project Number: COP - Johnston Federal

Site: Aztec, NM

PO Number: ENFOS

NELAC Cert. No.: T104704205-09-3

This Report Contains A Total Of 21 Pages

Excluding Any Attachments

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Certificate of Analysis

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Project: COP - Johnston Federal

Project Number: COP - Johnston Federal

Site: Aztec, NM

PO Number: ENFOS

NELAC Cert. No.: T104704205-09-3

I. SAMPLE RECEIPT:

All samples were received intact. The internal ice chest temperatures were measured on receipt and are recorded on the attached Sample Receipt Checklist.

II: ANALYSES AND EXCEPTIONS:

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.

There were no exceptions noted.

III. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report (" mg\kg-dry " or " ug\kg-dry ").

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.

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Certificate of Analysis

October 13, 2010

Workorder: H10090573

Kelly Blanchard
Tetra Tech
6121 Indian School Road NE
Suite 200
Albuquerque, NM 87110

Project: COP - Johnston Federal

Project Number: COP - Johnston Federal

Site: Aztec, NM

PO Number: ENFOS

NELAC Cert. No.: T104704205-09-3

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

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or by his designee, as verified by the following signature.

Erica Cardenas, Senior Project Manager

Enclosures

SPL Inc.
8880 Interchange Drive
Houston, TX 77054
Phone: (713) 660-0901
Fax: (713) 660-8975

SAMPLE SUMMARY

Workorder: H10090573 : COP - Johnston Federal

Project Number: COP - Johnston Federal

Lab ID	Sample ID	Matrix	COC ID	Date/Time Collected	Date/Time Received
H10090573001	MW-1	Water		9/22/2010 11:15	9/23/2010 09:00
H10090573002	MW-2	Water		9/22/2010 10:30	9/23/2010 09:00
H10090573003	MW-3	Water		9/22/2010 11:05	9/23/2010 09:00
H10090573004	MW-4	Water		9/22/2010 10:05	9/23/2010 09:00
H10090573005	Duplicate	Water		9/22/2010 11:20	9/23/2010 09:00
H10090573006	Trip Blank	Water		9/22/2010 13:40	9/23/2010 09:00

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Fax: (713) 660-8975

ANALYTICAL RESULTS

Workorder: H10090573 : COP - Johnston Federal

Project Number: COP - Johnston Federal

Lab ID: **H10090573001**
Sample ID: **MW-1**

Date/Time Received: 9/23/2010 09:00
Date/Time Collected: 9/22/2010 11:15

Matrix: Water

VOLATILES

Analysis Desc: SW-846 8260B
SW-846 5030Analytical Batches:
Batch: 2657 SW-846 8260B on 09/26/2010 11:44 by JMC DF = 1.
Batch: 2671 SW-846 8260B on 09/29/2010 01:14 by JMC DF = 50.

Parameters	Results ug/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Benzene	3500		50	6.4	50			2671
Ethylbenzene	630		50	24	50			2671
Naphthalene	49		1.0	0.33	1			2657
Toluene	980		50	6.7	50			2671
m,p-Xylene	6100		50	29	50			2671
o-Xylene	1400		50	17	50			2671
Xylenes, Total	7500		50	17	50			2671
4-Bromofluorobenzene (S)	106 %		74-125		50			2671
4-Bromofluorobenzene (S)	111 %		74-125		1			2657
1,2-Dichloroethane-d4 (S)	92.4 %		70-130		1			2657
1,2-Dichloroethane-d4 (S)	95.8 %		70-130		50			2671
Toluene-d8 (S)	106 %		82-118		50			2671
Toluene-d8 (S)	107 %		82-118		1			2657

ICP DISSOLVED METALS

Analysis Desc: SW-846 6010B
Preparation Batches:
Batch: 2090 SW-846 3010A on 09/23/2010 13:00 by R_V
Analytical Batches:
Batch: 1651 SW-846 6010B on 09/30/2010 22:21 by EBG

Parameters	Results mg/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Manganese	0.752		0.00500	0.000300	1		2090	1651

WET CHEMISTRY

Analysis Desc: EPA 300.0
Analytical Batches:
Batch: 1487 EPA 300.0 on 10/11/2010 16:04 by GLN

Parameters	Results mg/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Sulfate	190		25.0	2.18	50			1487

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ANALYTICAL RESULTS

Workorder: H10090573 : COP - Johnston Federal | Project Number: COP - Johnston Federal

Lab ID: **H10090573002** | Date/Time Received: 9/23/2010 09:00 | Matrix: Water

Sample ID: **MW-2** | Date/Time Collected: 9/22/2010 10:30

VOLATILES

Analysis Desc: SW-846 8260B | SW-846 5030Analytical Batches:
Batch: 2671 SW-846 8260B on 09/29/2010 02:39 by JMC

Parameters	Results ug/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Benzene	ND		1.0	0.13	1			2671
Ethylbenzene	ND		1.0	0.48	1			2671
Naphthalene	ND		1.0	0.33	1			2671
Toluene	ND		1.0	0.13	1			2671
m,p-Xylene	ND		1.0	0.58	1			2671
o-Xylene	ND		1.0	0.35	1			2671
Xylenes, Total	ND		1.0	0.35	1			2671
4-Bromofluorobenzene (S)	103 %		74-125		1			2671
1,2-Dichloroethane-d4 (S)	94.1 %		70-130		1			2671
Toluene-d8 (S)	105 %		82-118		1			2671

ICP DISSOLVED METALS

Analysis Desc: SW-846 6010B | Preparation Batches:
Batch: 2090 SW-846 3010A on 09/23/2010 13:00 by R_V
Analytical Batches:
Batch: 1651 SW-846 6010B on 09/30/2010 23:16 by EBG

Parameters	Results mg/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Manganese	0.00740		0.00500	0.000300	1		2090	1651

WET CHEMISTRY

Analysis Desc: EPA 300.0 | Analytical Batches:
Batch: 1487 EPA 300.0 on 10/11/2010 16:55 by GLN

Parameters	Results mg/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Sulfate	1350		50.0	4.35	100			1487

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ANALYTICAL RESULTS

Workorder: H10090573 : COP - Johnston Federal

Project Number: COP - Johnston Federal

Lab ID: **H10090573003**
Sample ID: **MW-3**

Date/Time Received: 9/23/2010 09:00
Date/Time Collected: 9/22/2010 11:05

Matrix: Water

VOLATILES

Analysis Desc: SW-846 8260B
SW-846 5030Analytical Batches:
Batch: 2671 SW-846 8260B on 09/29/2010 03:07 by JMC

Parameters	Results ug/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Batch Information Analysis
Benzene	4.2		1.0	0.13	1			2671
Ethylbenzene	ND		1.0	0.48	1			2671
Naphthalene	ND		1.0	0.33	1			2671
Toluene	ND		1.0	0.13	1			2671
m,p-Xylene	ND		1.0	0.58	1			2671
o-Xylene	ND		1.0	0.35	1			2671
Xylenes, Total	ND		1.0	0.35	1			2671
4-Bromofluorobenzene (S)	101 %		74-125		1			2671
1,2-Dichloroethane-d4 (S)	92.5 %		70-130		1			2671
Toluene-d8 (S)	103 %		82-118		1			2671

ICP DISSOLVED METALS

Analysis Desc: SW-846 6010B
Preparation Batches:
Batch: 2090 SW-846 3010A on 09/23/2010 13:00 by R_V
Analytical Batches:
Batch: 1651 SW-846 6010B on 09/30/2010 23:23 by EBG

Parameters	Results mg/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Batch Information Analysis
Manganese	1.11		0.00500	0.000300	1		2090	1651

WET CHEMISTRY

Analysis Desc: EPA 300.0
Analytical Batches:
Batch: 1487 EPA 300.0 on 10/11/2010 17:12 by GLN

Parameters	Results mg/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Batch Information Analysis
Sulfate	1060		50.0	4.35	100			1487

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ANALYTICAL RESULTS

Workorder: H10090573 : COP - Johnston Federal | Project Number: COP - Johnston Federal

Lab ID: **H10090573004** | Date/Time Received: 9/23/2010 09:00 | Matrix: Water

Sample ID: **MW-4** | Date/Time Collected: 9/22/2010 10:05

VOLATILES

Analysis Desc: SW-846 8260B | SW-846 5030Analytical Batches:
Batch: 2671 SW-846 8260B on 09/29/2010 03:35 by JMC

Parameters	Results ug/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Benzene	19		1.0	0.13	1			2671
Ethylbenzene	6.9		1.0	0.48	1			2671
Naphthalene	ND		1.0	0.33	1			2671
Toluene	5.0		1.0	0.13	1			2671
m,p-Xylene	5.7		1.0	0.58	1			2671
o-Xylene	ND		1.0	0.35	1			2671
Xylenes, Total	5.7		1.0	0.35	1			2671
4-Bromofluorobenzene (S)	98.5 %		74-125		1			2671
1,2-Dichloroethane-d4 (S)	92.1 %		70-130		1			2671
Toluene-d8 (S)	103 %		82-118		1			2671

ICP DISSOLVED METALS

Analysis Desc: SW-846 6010B | Preparation Batches:
Batch: 2090 SW-846 3010A on 09/23/2010 13:00 by R_V
Analytical Batches:
Batch: 1651 SW-846 6010B on 09/30/2010 23:29 by EBG

Parameters	Results mg/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Manganese	1.27		0.00500	0.000300	1		2090	1651

WET CHEMISTRY

Analysis Desc: EPA 300.0 | Analytical Batches:
Batch: 1487 EPA 300.0 on 10/11/2010 17:29 by GLN

Parameters	Results mg/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Sulfate	1040		50.0	4.35	100			1487

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ANALYTICAL RESULTS

Workorder: H10090573 : COP - Johnston Federal

Project Number: COP - Johnston Federal

Lab ID: **H10090573005**

Date/Time Received: 9/23/2010 09:00

Matrix: Water

Sample ID: **Duplicate**

Date/Time Collected: 9/22/2010 11:20

VOLATILES

Analysis Desc: SW-846 8260B

SW-846 5030Analytical Batches:

Batch: 2657 SW-846 8260B on 09/26/2010 15:01 by JMC DF = 1.

Batch: 2671 SW-846 8260B on 09/29/2010 01:42 by JMC DF = 50.

Parameters	Results ug/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Benzene	3500		50	6.4	50			2671
Ethylbenzene	640		50	24	50			2671
Naphthalene	59		1.0	0.33	1			2657
Toluene	970		50	6.7	50			2671
m,p-Xylene	6200		50	29	50			2671
o-Xylene	1400		50	17	50			2671
Xylenes, Total	7600		50	17	50			2671
4-Bromofluorobenzene (S)	101 %		74-125		1			2657
4-Bromofluorobenzene (S)	102 %		74-125		50			2671
1,2-Dichloroethane-d4 (S)	98.7 %		70-130		50			2671
1,2-Dichloroethane-d4 (S)	107 %		70-130		1			2657
Toluene-d8 (S)	106 %		82-118		50			2671
Toluene-d8 (S)	111 %		82-118		1			2657

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ANALYTICAL RESULTS

Workorder: H10090573 : COP - Johnston Federal

Project Number: COP - Johnston Federal

Lab ID: **H10090573006**

Date/Time Received: 9/23/2010 09:00

Matrix: Water

Sample ID: **Trip Blank**

Date/Time Collected: 9/22/2010 13:40

VOLATILES

Analysis Desc: SW-846 8260B

SW-846 5030Analytical Batches:

Batch: 2671 SW-846 8260B on 09/29/2010 02:11 by JMC

Parameters	Results ug/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Benzene	ND		1.0	0.13	1			2671
Ethylbenzene	ND		1.0	0.48	1			2671
Naphthalene	ND		1.0	0.33	1			2671
Toluene	ND		1.0	0.13	1			2671
m,p-Xylene	ND		1.0	0.58	1			2671
o-Xylene	ND		1.0	0.35	1			2671
Xylenes, Total	ND		1.0	0.35	1			2671
4-Bromofluorobenzene (S)	101 %		74-125		1			2671
1,2-Dichloroethane-d4 (S)	96.5 %		70-130		1			2671
Toluene-d8 (S)	103 %		82-118		1			2671

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QUALITY CONTROL DATA

Workorder: H10090573 : COP - Johnston Federal — Project Number: COP - Johnston Federal

QC Batch: MSV/2656 — Analysis Method: SW-846 8260B

QC Batch Method: SW-846 5030 — Preparation: 09/26/2010 00:00 by JMC

Associated Lab Samples: H10090573001, H10090573005, H10090574001, H10090574002, H10090574003, H10090575001, H10090575002, H10090575003, H10090575004, H10090575005, H10090575006

METHOD BLANK: 72101

Analysis Date/Time Analyst: 09/26/2010 11:16 JMC

Parameter	Units	Blank Result	Qualifiers	Reporting Limit
Benzene	ug/l	ND		1.0
Ethylbenzene	ug/l	ND		1.0
Naphthalene	ug/l	ND		1.0
Toluene	ug/l	ND		1.0
m,p-Xylene	ug/l	ND		1.0
o-Xylene	ug/l	ND		1.0
Xylenes, Total	ug/l	ND		1.0
4-Bromofluorobenzene (S)	%	107		74-125
1,2-Dichloroethane-d4 (S)	%	99.6		70-130
Toluene-d8 (S)	%	105		82-118

LABORATORY CONTROL SAMPLE: 72102

Analysis Date/Time Analyst: 09/26/2010 10:48 JMC

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits
Benzene	ug/l	20	19.5	97.5	74-123
Ethylbenzene	ug/l	20	19.6	97.8	72-127
Naphthalene	ug/l	20	17.0	85.2	33-148
Toluene	ug/l	20	19.0	95.2	74-126
m,p-Xylene	ug/l	40	39.4	98.5	71-129
o-Xylene	ug/l	20	19.2	96.0	74-130
Xylenes, Total	ug/l	60	58.59	97.7	71-130
4-Bromofluorobenzene (S)	%			102	74-125
1,2-Dichloroethane-d4 (S)	%			101	70-130
Toluene-d8 (S)	%			97.1	82-118

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 72103 72104 Original: H10090573001

MS Analysis Date/Time Analyst: 09/26/2010 12:12 JMC

MSD Analysis Date/Time Analyst: 09/26/2010 12:40 JMC

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Benzene	ug/l	820	20	828	696	NC	NC	70-124	NC	20

QC results presented in the QC Control Data 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. Also, MS/MSD % recoveries are calculated by the SPL LIMS using any detected value greater than the MDL.

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Fax: (713) 660-8975

QUALITY CONTROL DATA

Workorder: H10090573 : COP - Johnston Federal | Project Number: COP - Johnston Federal

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 72103 72104 Original: H10090573001

MS Analysis Date/Time Analyst: 09/26/2010 12:12 JMC

MSD Analysis Date/Time Analyst: 09/26/2010 12:40 JMC

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Ethylbenzene	ug/l	740	20	588	794	NC	NC	35-175	NC	20
Naphthalene	ug/l	49	20	74.4	66.8	125	87.1	20-210	10.7	20
Toluene	ug/l	810	20	683	666	NC	NC	70-131	NC	20
m,p-Xylene	ug/l	1600	40	1410	1500	NC	NC	35-175	NC	20
o-Xylene	ug/l	1000	20	853	897	NC	NC	35-175	NC	20
Xylenes, Total	ug/l	2600	60	2260	2397	NC	NC	35-175	NC	20
4-Bromofluorobenzene (S)	%	111				84.1	139 *	74-125	*	
1,2-Dichloroethane-d4 (S)	%	95.8				101	98.1	70-130		
Toluene-d8 (S)	%	107				75.5 *	113	82-118	*	

QC results presented in the QC Control Data 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. Also, MS/MSD % recoveries are calculated by the SPL LIMS using any detected value greater than the MDL.

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QUALITY CONTROL DATA

Workorder: H10090573 : COP - Johnston Federal

Project Number: COP - Johnston Federal

QC Batch: MSV/2670

Analysis Method: SW-846 8260B

QC Batch Method: SW-846 5030

Preparation: 09/28/2010 00:00 by JMC

Associated Lab Samples: H10090573001, H10090573002, H10090573003, H10090573004, H10090573005, H10090573006, H10090577002, H10090577003, H10090577004, H10090577005, H10090577006, H10090577007, H10090638004, H10090642001, H10090642002

METHOD BLANK: 72859

Analysis Date/Time Analyst: 09/29/2010 00:46 JMC

Parameter	Units	Blank Result	Qualifiers	Reporting Limit
Benzene	ug/l	ND		1.0
Ethylbenzene	ug/l	ND		1.0
Naphthalene	ug/l	ND		1.0
Toluene	ug/l	ND		1.0
m,p-Xylene	ug/l	ND		1.0
o-Xylene	ug/l	ND		1.0
Xylenes, Total	ug/l	ND		1.0
4-Bromofluorobenzene (S)	%	103		74-125
1,2-Dichloroethane-d4 (S)	%	97		70-130
Toluene-d8 (S)	%	107		82-118

LABORATORY CONTROL SAMPLE: 72860

Analysis Date/Time Analyst: 09/29/2010 00:18 JMC

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits
Benzene	ug/l	20	19.0	95.2	74-123
Ethylbenzene	ug/l	20	19.9	99.3	72-127
Naphthalene	ug/l	20	14.7	73.5	33-148
Toluene	ug/l	20	21.1	106	74-126
m,p-Xylene	ug/l	40	39.3	98.3	71-129
o-Xylene	ug/l	20	19.7	98.7	74-130
Xylenes, Total	ug/l	60	59.06	98.4	71-130
4-Bromofluorobenzene (S)	%			106	74-125
1,2-Dichloroethane-d4 (S)	%			94.8	70-130
Toluene-d8 (S)	%			104	82-118

QC results presented in the QC Control Data 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. Also, MS/MSD % recoveries are calculated by the SPL LIMS using any detected value greater than the MDL.

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QUALITY CONTROL DATA

Workorder: H10090573 : COP - Johnston Federal | Project Number: COP - Johnston Federal

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 72861 72862 Original: H10090573006

MS Analysis Date/Time Analyst: 09/29/2010 07:47 JMC

MSD Analysis Date/Time Analyst: 09/29/2010 08:15 JMC

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Benzene	ug/l	ND	20	18.3	18.6	91.6	93.0	70-124	1.5	20
Ethylbenzene	ug/l	ND	20	18.6	18.9	93.1	94.7	35-175	1.7	20
Naphthalene	ug/l	ND	20	15.4	14.6	77.1	73.2	20-210	5.1	20
Toluene	ug/l	ND	20	18.8	19.4	94.1	97.2	70-131	3.3	20
m,p-Xylene	ug/l	ND	40	36.3	36.7	90.7	91.7	35-175	1.1	20
o-Xylene	ug/l	ND	20	18.1	19.0	90.6	94.8	35-175	4.5	20
Xylenes, Total	ug/l	ND	60	54.4	55.64	90.7	92.7	35-175	2.3	20
4-Bromofluorobenzene (S)	%	101				102	103	74-125		
1,2-Dichloroethane-d4 (S)	%	96.5				93.4	96.9	70-130		
Toluene-d8 (S)	%	103				98.0	103	82-118		

QC results presented in the QC Control Data 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. Also, MS/MSD % recoveries are calculated by the SPL LIMS using any detected value greater than the MDL.

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QUALITY CONTROL DATA

Workorder: H10090573 : COP - Johnston Federal

Project Number: COP - Johnston Federal

QC Batch: DIGM/2090

Analysis Method: SW-846 6010B

QC Batch Method: SW-846 3010A

Preparation: 09/23/2010 13:00 by R_V

Associated Lab Samples: H10090573001 H10090573002 H10090573003 H10090573004 H10090575001 H10090575002 H10090575003 H10090575004

METHOD BLANK: 71116

Analysis Date/Time Analyst: 09/30/2010 22:09 EBG

Parameter	Units	Blank Result	Qualifiers	Reporting Limit
Manganese	mg/l	ND		0.00500

LABORATORY CONTROL SAMPLE: 71117

Analysis Date/Time Analyst: 09/30/2010 22:15 EBG

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits
Manganese	mg/l	0.10	0.0992	99.2	80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 71118 71119 Original: H10090573001

MS Analysis Date/Time Analyst: 09/30/2010 22:27 EBG

MSD Analysis Date/Time Analyst: 09/30/2010 22:34 EBG

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Manganese	mg/l	0.752	0.10	0.8495	0.8535	NC	NC	75-125	NC	20

QC results presented in the QC Control Data 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. Also, MS/MSD % recoveries are calculated by the SPL LIMS using any detected value greater than the MDL.

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QUALITY CONTROL DATA

Workorder: H10090573 : COP - Johnston Federal — Project Number: COP - Johnston Federal

QC Batch: IC/1487 — Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Associated Lab Samples: H10090573001 H10090573002 H10090573003 H10090573004

METHOD BLANK: 75364

Analysis Date/Time Analyst: 10/11/2010 09:41 GLN

Parameter	Units	Blank Result	Qualifiers	Reporting Limit
Sulfate	mg/l	ND		0.500

LABORATORY CONTROL SAMPLE: 75365

Analysis Date/Time Analyst: 10/11/2010 09:58 GLN

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits
Sulfate	mg/l	10	10.31	103	85-115

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 75366 75367 Original: H10090573001

MS Analysis Date/Time Analyst: 10/11/2010 16:21 GLN

MSD Analysis Date/Time Analyst: 10/11/2010 16:38 GLN

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Sulfate	mg/l	190	500	724.3	711.8	107	104	80-120	1.8	20

QC results presented in the QC Control Data 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. Also, MS/MSD % recoveries are calculated by the SPL LIMS using any detected value greater than the MDL.

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Legend

(S) - Indicates analyte is a surrogate

Qualifier	Qualifier Description
*	Recovery/RPD value outside QC limits
+	DCS Concentration
B	Analyte detected in the Method Blank
C	MTBE results were not confirmed by GCMS
D	Recovery out of range due to dilution
E	Results exceed calibration range
H	Exceeds holding time
I	Estimated value, between MDL and PQL (Florida)
J	Estimated value
JN	The analysis indicates the presence of an analyte
MI	Matrix Interference
N	Recovery outside of control limits
NC	Not Calculable (Sample Duplicate)
NC	Not Calculated - Sample concentration > 4 times the spike
ND	Not Detected at reporting Limits
P	Pesticide dual column results, greater then 25%
Q	Received past holding time
TNTC	Too numerous to count
U	Not Detected at reporting Limits

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: H10090573 : COP - Johnston Federal

Project Number: COP - Johnston Federal

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
H10090573001	**MW-1**	SW-846 3010A	DIGM/2090	SW-846 6010B	ICP/1651
H10090573002	**MW-2**	SW-846 3010A	DIGM/2090	SW-846 6010B	ICP/1651
H10090573003	**MW-3**	SW-846 3010A	DIGM/2090	SW-846 6010B	ICP/1651
H10090573004	**MW-4**	SW-846 3010A	DIGM/2090	SW-846 6010B	ICP/1651
H10090573001	**MW-1**	SW-846 5030	MSV/2656	SW-846 8260B	MSV/2657
H10090573005	**Duplicate**	SW-846 5030	MSV/2656	SW-846 8260B	MSV/2657
H10090573001	**MW-1**	SW-846 5030	MSV/2670	SW-846 8260B	MSV/2671
H10090573002	**MW-2**	SW-846 5030	MSV/2670	SW-846 8260B	MSV/2671
H10090573003	**MW-3**	SW-846 5030	MSV/2670	SW-846 8260B	MSV/2671
H10090573004	**MW-4**	SW-846 5030	MSV/2670	SW-846 8260B	MSV/2671
H10090573005	**Duplicate**	SW-846 5030	MSV/2670	SW-846 8260B	MSV/2671
H10090573006	**Trip Blank**	SW-846 5030	MSV/2670	SW-846 8260B	MSV/2671
H10090573001	**MW-1**	EPA 300.0	IC/1487		
H10090573002	**MW-2**	EPA 300.0	IC/1487		
H10090573003	**MW-3**	EPA 300.0	IC/1487		
H10090573004	**MW-4**	EPA 300.0	IC/1487		

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Sample Receipt Checklist

WorkOrder:	H10090573	Received By	LOG
Date and Time	09/23/2010 09:00	Carrier Name:	FEDEXS
Temperature:	4.0°C	Chilled By:	Water Ice

1.	Shipping container/cooler in good condition?	YES
2.	Custody seals intact on shipping container/cooler?	YES
3.	Custody seals intact on sample bottles?	Not Present
4.	Chain of custody present?	YES
5.	Chain of custody signed when relinquished and received?	YES
6.	Chain of custody agrees with sample labels?	YES
7.	Samples in proper container/bottle?	YES
8.	Samples containers intact?	YES
9.	Sufficient sample volume for indicated test?	YES
10.	All samples received within holding time?	YES
11.	Container/Temp Blank temperature in compliance?	YES
12.	Water - VOA vials have zero headspace?	YES
13.	Water - Preservation checked upon receipt(except VOA*)?	Not Applicable

*VOA Preservation Checked After Sample Analysis

SPL Representative: Contact Date & Time:

Client Name Contacted:

Client Instructions:

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Analysis Request and Chain of Custody Record

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SPL: H10090573

Company Name: Tetra Tech / Conoco Phillips
Contact: Kelly Blanchard
Address: 6121 Indian School Rd. NE, Ste. 200
Phone/Fax: (505) 237-8440 / (505) 237-8656
Email Address: kelly.blanchard@tetratech.com
Invoice To:
Purchase Order No:
Project Name/No: ~~Federal #15~~ Johnston Federal
Site Address:
Sampled By: Carson Brown

Sampling Event Description: Quarterly ☐ 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	BTEX - 8260 / naphthalene	SO4	dissolved Mn			
MW-1	9.22.10	1115	X				3	~~Act~~ Voa	HCl	X					
MW-1	9.22.10	1115	X				1	16oz	none		X				
MW-1	9.22.10	1115	X				1	16oz	none			X			
MW-2	9.22.10	1030	X				3	Voa	HCl	X					
MW-2	9.22.10	1030	X				1	16oz	none		X				
MW-2	9.22.10	1030	X				1	16oz	none			X			
MW-3	9.22.10	1105	X				3	Voa	HCl	X					
MW-3	9.22.10	1105	X				1	16oz	none		X				
MW-3	9.22.10	1105	X				1	16oz	none			X			
MW-4	9.22.10	1005	X				3	Voa	HCl	X					

SHORT HOLDS

TAT: 24hr ☐ 48hr ☐ Other ☐ 72hr ☐ 10 day ☒ ☐

Special Detection Limits (Specify):

Special Reporting Requirements (Specify):

Consultant Remarks: Please filter and preserve metals at laboratory

Laboratory Remarks: 4.0

PM review:

Relinquished by	Date	Time	Received by
Relinquished by Sampler: Carson Brown	9.22.10	1400	Received by:
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	9/23/10	0900	Received by SPL Inc.: [signature]

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Page 2 of 2

8880 Interchange Drive, Houston, TX 77054

Analysis Request and Chain of Custody Record

SPL Workorder No.: 410090573

Company Name: Tetra Tech / Conoco Phillips
Contact: Kelly Blanchard
Address: 6121 Indian School Rd. NE, Ste. 200
Phone/Fax: (505) 237-8440 / (505) 237-8656
Email Address: kelly.blanchard@tetratech.com
Invoice To:
Purchase Order No:
Project Name/No: ~~Federal #15~~ Johnston Federal
Site Address:
Sampled By: Carson Brown

Sampling Event Description: ☐ Quarterly ☐ 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	BTEX - 8260 / Naphthalene	SO_4	Dissolved Mn
MW-4	9.22.10	1005	X				1	16oz	none		X	
MW-4	9.22.10	1005	X				1	16oz	none			X
duplicate	9.22.10	1120	X				3	VOA	HCl	X		
trip blank	9.22.10	1340	X				2	VOA	HCl	X		

TAT: ☐ 24hr ☐ 72hr ☐ 48hr ☐ Std ☐ Other ☐

Special Detection Limits (Specify):

Special Reporting Requirements (Specify):

Consultant Remarks: Please filter and preserve metals at laboratory

Laboratory Remarks: U.OC

PM review:

Relinquished by	Date	Time	Received by
Relinquished by Sampler: Carson Brown	9.22.10	1400	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date: 9/23/10	Time: 0900	Received by SPL: [signature]