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GWMR**

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**QUARTERLY GROUNDWATER MONITORING
REPORT
SEPTEMBER 2009**

CONOCOPHILLIPS COMPANY

**SAN JUAN 27-5 #34A
PRODUCTION FACILITY
RIO ARRIBA COUNTY, NEW MEXICO
API # 30-039-23739**

Prepared for:



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October 2009

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QUARTERLY GROUNDWATER MONITORING REPORT

SAN JUAN 27-5 #34A, RIO ARRIBA COUNTY, NEW MEXICO

SEPTEMBER 2009

1.0 INTRODUCTION

This report discusses the results of the quarterly groundwater sampling event conducted by Tetra Tech, Inc. (Tetra Tech) in September 2009 at the ConocoPhillips Company (ConocoPhillips) San Juan 27-5 #34A site located outside of Blanco, New Mexico (Site). The Site is located in Section 30, Township 27N, Range 5W, of Rio Arriba County, New Mexico (**Figure 1**). A Site detail map is included as **Figure 2**.

1.1 Site Background

The surface owner of the Site is the Bureau of Land Management (BLM), who leases the land to ConocoPhillips. The historical timeline for the Site is detailed below, and is also presented in **Table 1**.

During a January 30, 2009 removal of an aboveground storage tank (AST) at the Site, hydrocarbon impacts beneath the AST were visually confirmed. ConocoPhillips contracted Envirotech Inc. of Farmington, NM (Envirotech) for spill assessment services following the discovery. Envirotech collected a total of 6 soil samples during the assessment: a 5-point composite soil sample from just beneath the AST; 4 grab soil samples from test holes advanced around the AST in order to delineate the extent of hydrocarbon impact (depth of these samples ranged from 10 to 15 feet below ground surface (bgs)); and another 5-point composite soil sample collected from "a small area...excavated to approximately 17 [feet] bgs..." (Envirotech, 2009). All soil samples collected were analyzed in the field for total petroleum hydrocarbons (TPH) using Environmental Protection Agency (EPA) method 418.1, in addition analysis of organic vapors using a photoionization detector (PID). The two composite soil samples were also sent for laboratory analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8021, and the composite soil sample collected at a depth of 17 feet bgs was submitted for TPH analysis using EPA Method 8015. The New Mexico Oil Conservation Division (OCD) recommended remediation action levels for the Site were determined to be 100 parts per million (ppm) organic vapor, 100 ppm TPH, 10 ppm benzene, and 50 ppm for BTEX. All soil sample results were below these action levels except for those collected from one of the test holes and from both composite samples collected at the surface beneath the AST and from the bottom of the excavation at 17 feet bgs.

On March 3, 2009, Envirotech returned to the Site to continue sampling activities. Envirotech stated that prior to their arrival, the "spill area was excavated to extents of 49' x 49' x 20' deep where groundwater was encountered..." (Envirotech, 2009). Envirotech collected a composite sample from the bottom of the excavation and from each of the 4 walls. Soil samples were collected and analyzed for TPH and organic vapors in the field, and all results were below OCD action levels for organic vapors. The concentration of TPH found in the soil sample collected from the south wall was 2,170 ppm; all other TPH results were below OCD action levels. The excavation was continued along the south wall an additional 4 feet and another soil sample was collected for TPH analysis. TPH results were found to be below OCD action levels and the excavation was discontinued at that point. Final excavation

dimensions were reported at 53 feet by 49 feet by 20 feet deep; excavation maps provided by Envirotech were not to scale (personal communication on July 13, 2009 between Tetra Tech and Wade Hack, ConocoPhillips field manager, revealed that the area of the excavation was within the current location of the waste water tank and the aboveground storage tank at the Site [Figure 2]). Groundwater was reached at 20 feet bgs and had begun to seep into the excavation. A groundwater sample was collected and was sent to an analytical laboratory for volatile organic compound (VOC) analysis using EPA Method 8260 (Envirotech, 2009). Laboratory results for benzene were found at a concentration of 95.6 micrograms per liter (ug/L); the New Mexico Water Quality Control Commission (NMWQCC) groundwater quality standard for benzene is 10 ug/L.

On March 20, 2009, a report submitted to ConocoPhillips stated that a total of 1,900 cubic yards of soil were removed from the Site and were transported to an OCD-permitted facility on Crouch Mesa in Farmington, NM. Envirotech recommended the installation of groundwater monitor wells at the Site to determine "groundwater gradient and the extent of groundwater contamination" (Envirotech, 2009).

On April 2, 2009, Tetra Tech conducted a Site visit to determine placement of proposed groundwater monitor wells. Tetra Tech subsequently installed 4 groundwater monitor wells at the Site between July 15, 2009, and July 16, 2009. Tetra Tech conducted a baseline groundwater monitoring event at the Site on July 28, 2009. A generalized geologic cross section for the Site is presented in Figure 3.

2.0 MONITORING SUMMARY, SAMPLING METHODOLOGY AND RESULTS

2.1 Monitoring Summary

Groundwater Elevation Measurements

On September 29, 2009, groundwater elevation measurements were recorded in monitor wells MW-1, MW-2, MW-3 and MW-4. Table 2 presents the monitor well specifications and groundwater level data. A groundwater elevation contour map is presented on Figure 4, which illustrates that groundwater at the Site flows to the north, northwest.

Groundwater sampling

Groundwater quality samples were collected from monitor wells MW-1, MW-2, MW-3 and MW-4 during the September 29, 2009 groundwater sampling event. Approximately 5 gallons of water, or three well volumes, were purged from each monitor well before sampling was performed. A dedicated 1.5-inch polyvinyl chloride disposable bailer was used in each well to purge and collect groundwater samples. The purged water was disposed of in the on-site waste water tank (Figure 2). The samples were placed in laboratory prepared bottles, packed on ice, and shipped with chain of custody documentation to Southern Petroleum Laboratory located in Houston, Texas. The samples were analyzed for presence of BTEX by Environmental Protection Agency (EPA) Method 8260B; total metals by EPA Methods SW7470A, SW6020A and SW6010B; and total dissolved solids (TDS) by EPA Method SM2540C. Analytical results for the September 29, 2009 sampling event are summarized in Table 3. An historical summary of groundwater analytical results is provided in Table 4.

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. Exceedences of NMWQCC groundwater quality standards in Site monitor wells are discussed below.

- **Manganese**

The groundwater quality standard for manganese is 0.2 milligrams per liter (mg/L). Groundwater collected from monitor wells MW-1, MW-2, MW-3 and MW-4 were found to contain manganese at concentrations of 0.694 mg/L, 1.38 mg/L, 1.7 mg/L and 0.269 mg/L, respectively.

No other analyzed constituents were found above NMWQCC groundwater quality standards in Site monitor wells.

The corresponding laboratory analysis report for the September 2009 groundwater sampling event, including quality control summaries, are included in **Appendix B**.

3.0 CONCLUSIONS AND RECOMMENDATIONS

Tetra Tech recommends continued quarterly groundwater sampling at the Site in order to provide sufficient data for Site closure. Site closure will be requested when groundwater quality results begin to indicate that all constituents of concern are consistently below NMWQCC groundwater quality standards. Please contact Kelly Blanchard at 505-237-8440 or kelly.blanchard@tetrattech.com if you have any questions or require additional information.

4.0 REFERENCES

Envirotech Incorporated (2009). Burlington Resources Spill Closure Report Located at San Juan 27-5 #34A, Section 30, Township 27N, Range 5W, Rio Arriba County, New Mexico. Prepared for ConocoPhillips Company. Report Dated March 20, 2009. 3 pp (not including Figures, Tables, and Appendices).

FIGURES

FIGURE 1.

Site Location Map
ConocoPhillips
Company
San Juan 27-5 #34A
Rio Arriba County, NM



ConocoPhillips Company
San Juan 27-5 #34A Site
Location

Latitude: 34.547445° N
Longitude: -107.406587° W



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ConocoPhillips High Resolution Aerial Imagery - 2008

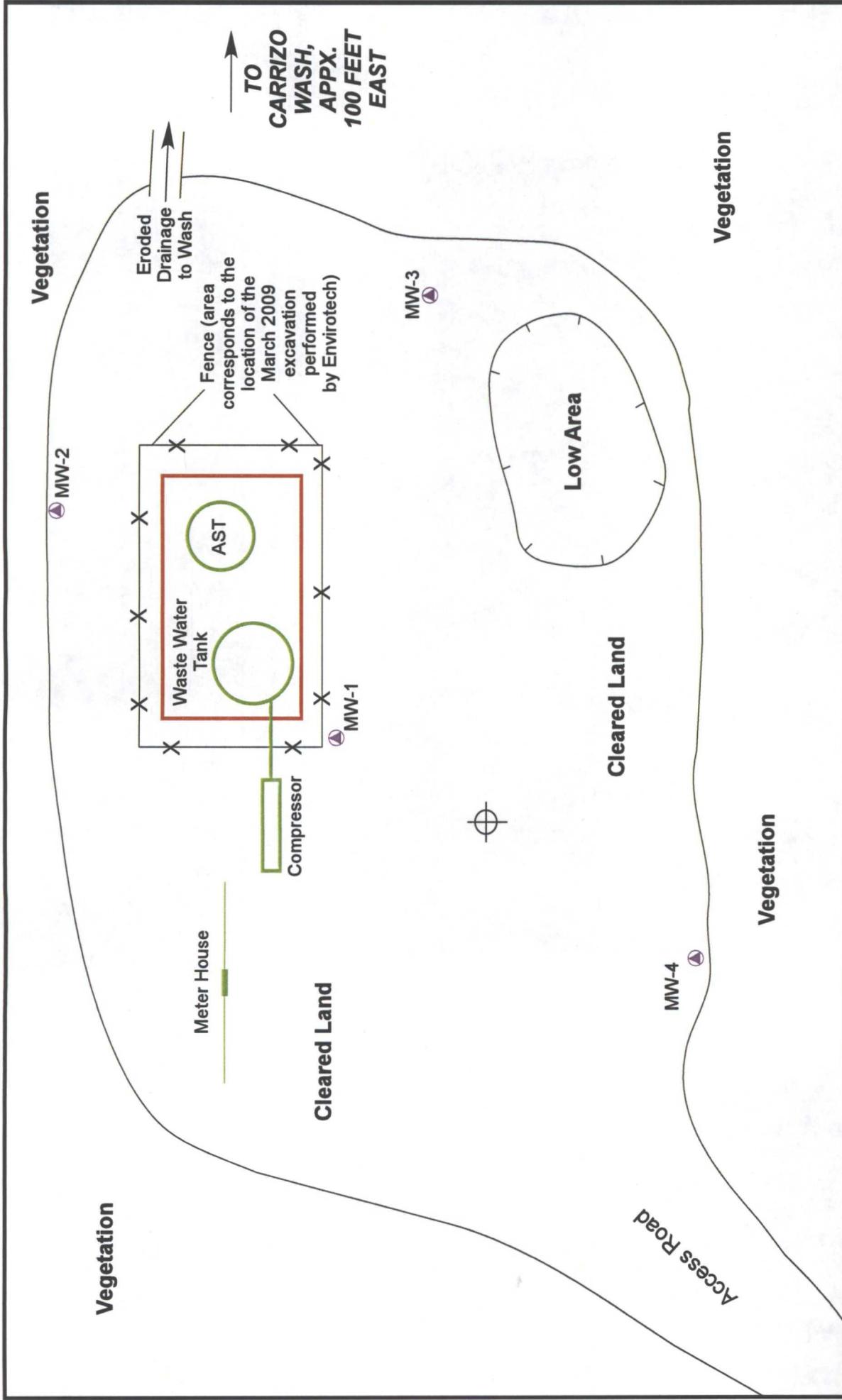


FIGURE 2:
 SITE LAYOUT MAP
 CONOCOPHILLIPS COMPANY
 SAN JUAN 27-5 #34A
 GAS PRODUCTION WELL
 Sec 30, T27N, R5W
 Rio Arriba County, New Mexico

LEGEND

-  WELLHEAD
-  MONITOR WELL
-  EARTHEN BERM
-  EQUIPMENT

AST - Above Ground Storage Tank



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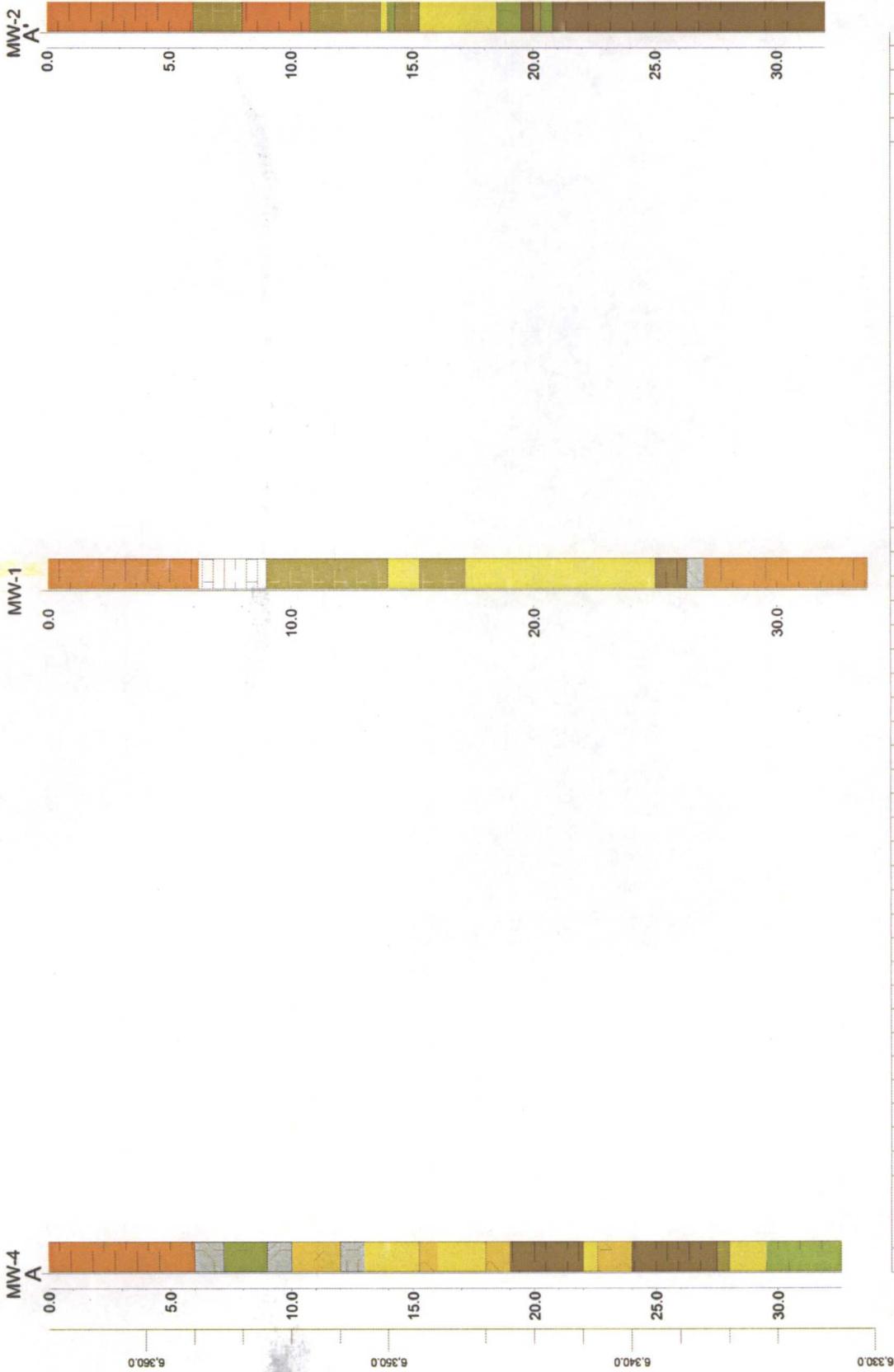


FIGURE 3:
 GENERALIZED GEOLOGIC CROSS
 SECTION
 CONOCOPHILLIPS COMPANY
 San Juan 27-5 #34A
 Sec 30, T27N, R5W
 Rio Arriba County, New Mexico

LEGEND

- | | | | |
|--|-----------------------------------|--|------------------------|
| | Clayey sand | | Poor Recovery |
| | Clayey Silt | | Sandy silt |
| | Clays | | Silty Clay |
| | Fine grained sand | | Silty Sand |
| | Fine to medium grained silty sand | | Very fine grained sand |
| | Medium grained sand | | |



TETRA TECH, INC.

Note: Groundwater elevations are relative to the wellhead, set at 100 feet above mean sea level.

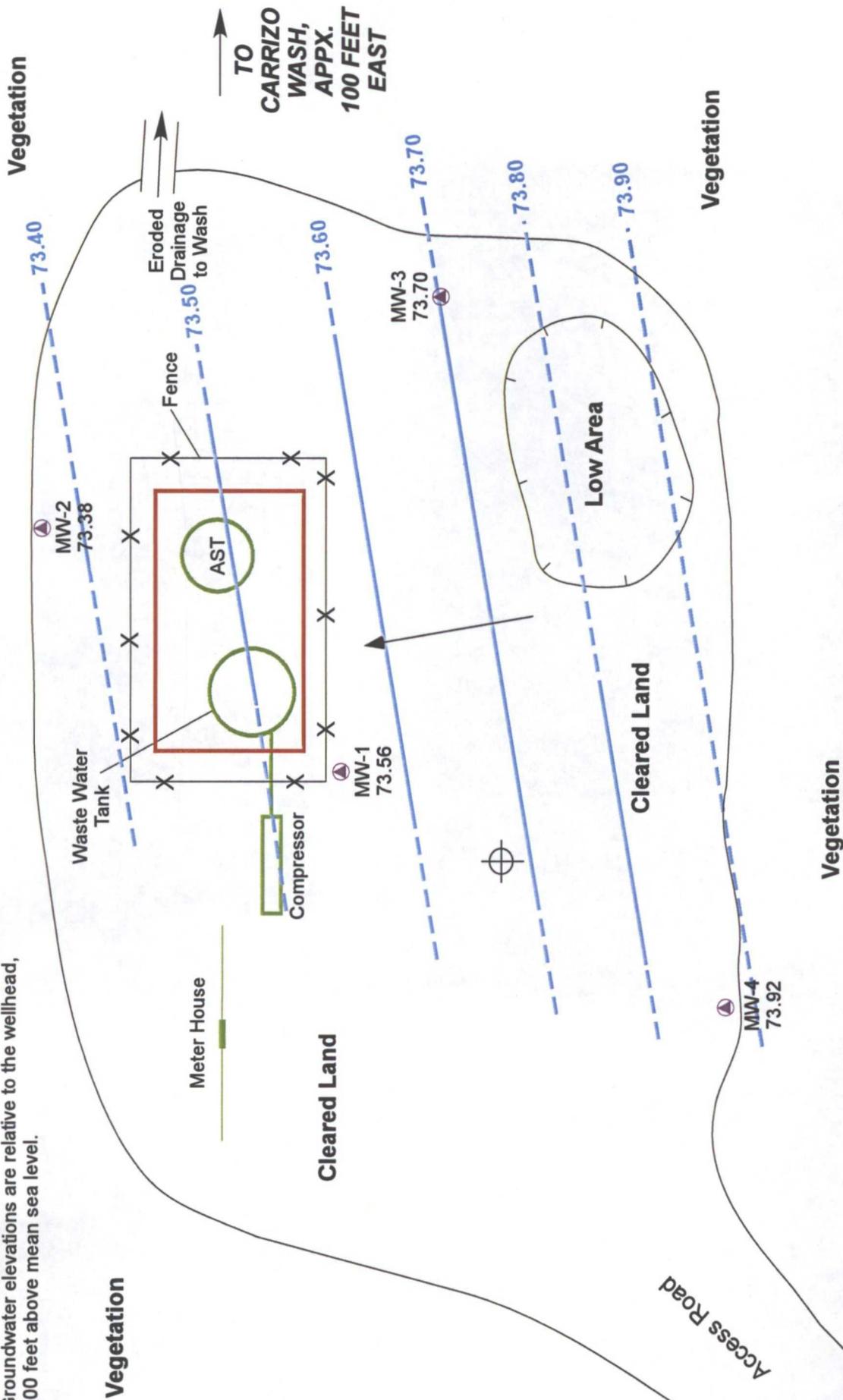


FIGURE 4:
 GROUNDWATER ELEVATION MAP
 SEPTEMBER 2009
 CONOCOPHILLIPS COMPANY
 SAN JUAN 27-5 #34A
 OIL AND GAS PRODUCTION WELL
 Sec 30, T27N, R5W
 Rio Arriba County, New Mexico

LEGEND

	WELLHEAD		AST - Above Ground Storage Tank
	MONITOR WELL		GROUNDWATER ELEVATION (dashed where inferred)
	EARTHEN BERM		
	EQUIPMENT		

Scale: 0 30 60 FEET

North Arrow:

TETRA TECH, INC.

TABLES

DATE	ACTIVITY
January 30, 2009	<p>During removal of an aboveground storage tank (AST) at the Site, hydrocarbon impacts beneath the AST were visually confirmed. ConocoPhillips Company contacted Envirotech Inc. of Farmington, NM (Envirotech) for spill assessment services following the discovery. Envirotech collected a total of 6 soil samples during the assessment: a 5-point composite soil sample from just beneath the AST; 4 grab soil samples from test holes dug around the AST in order to delineate the extent of hydrocarbon impact (depth of these samples ranged from 10 to 15 feet below ground surface (bgs)); and another 5-point composite soil sample collected from "a small area...excavated to approximately 17 [feet] bgs..." (Envirotech, 2009). All soil samples collected were analyzed in the field for total petroleum hydrocarbons (TPH) using Environmental Protection Agency (EPA) method 418.1 and for organic vapors using a photoionization detector (PID). The two composite soil samples were also sent for laboratory analysis of benzene and benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8021, and the composite soil sample collected at a depth of 17 feet bgs was submitted for TPH analysis using EPA Method 8015. The New Mexico Oil Conservation Division (OCD) recommended remediation action levels for the Site were determined to be 100 parts per million (ppm) organic vapor, 100 ppm TPH, 10 ppm benzene, and 50 ppm for BTEX. All soil sample results were below these action levels except for those collected from one of the test holes (test hole 1) and from both composite samples collected at the surface beneath the AST and from the bottom of the excavation at 17 feet bgs (Appendix A).</p>
March 3, 2009	<p>Envirotech Inc. of Farmington, NM (Envirotech) returned to the Site to continue sampling activities. Envirotech stated that prior to their arrival, the "spill area was excavated to extents of 49' x 49' x 20' deep where groundwater was encountered..." (Envirotech, 2009). Envirotech collected a composite sample from the bottom of the excavation and from each of the 4 walls. Soil samples were analyzed for TPH and organic vapors in the field, and all results were below OCD action levels for organic vapors. The concentration of TPH found in the soil sample collected from the south wall was 2,170 ppm; all other TPH results were below OCD action levels (Appendix A).</p>
March 3, 2009	<p>The excavation was continued along the south wall an additional 4 feet and another soil sample was collected for TPH analysis. TPH results were found to be below OCD action levels and the excavation was discontinued at this point. Final excavation dimensions were reported at 53 feet by 49 feet by 20 feet deep. Groundwater was reached at this depth and had begun to seep into the excavation. A groundwater sample was collected and was sent to an analytical laboratory for volatile organic compound (VOC) analysis using EPA Method 8260. Laboratory results for benzene were found at a concentration of 95.6 micrograms per liter (ug/L), above the 10 ug/L New Mexico Water Quality Control Commission (NMWQCC) groundwater quality standard for this constituent (Envirotech, 2009).</p>
March 20, 2009	<p>A report submitted to ConocoPhillips stated that a total of 1,900 cubic yards of soil were removed from the Site and were transported to an OCD-permitted facility on Crouch Mesa in Farmington, NM. Envirotech recommended the installation of groundwater monitoring wells at the Site to determine "groundwater gradient and the extent of groundwater contamination" (Envirotech, 2009).</p>

DATE	ACTIVITY
April 2, 2009	Tetra Tech conducted a Site visit to determine placement of proposed groundwater monitoring wells.
July 15, 2009 & July 16, 2009	Four groundwater monitor wells are installed by Tetra Tech (MW-1, MW-2, MW-3; MW-4).
July 28, 2009	A baseline groundwater monitoring event was conducted at the Site by Tetra Tech.
September 29, 2009	Quarterly groundwater monitoring event conducted at the Site by Tetra Tech.

Table 2. Groundwater Elevation Data Summary - ConocoPhillips San Juan 27-5 #34A

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	33.22	18.73 - 33.73	97.44	7/28/2009	23.21	74.23
				9/29/2009	23.88	73.56
MW-2	34.35	15.00 - 30.00	96.78	7/28/2009	22.72	74.06
				9/29/2009	23.40	73.38
MW-3	33.15	17.55 - 32.55	97.24	7/28/2009	22.84	74.40
				9/29/2009	23.54	73.70
MW-4	32.65	17.60 - 32.60	97.23	7/28/2009	22.62	74.61
				9/29/2009	23.31	73.92

ft = Feet

TOC = Top of casing

bgs = below ground surface

* Elevation relative to wellhead, set at 100 feet.

Table 3. September 2009 Groundwater Laboratory Analytical Results - ConocoPhillips San Juan 27-5 #34A

Constituent	Method	Units	Sample ID					Duplicate 9/29/09	NMWQCC Groundwater Standard
			MW-1 9/29/09	MW-2 9/29/09	MW-3 9/29/09	MW-4 9/29/09			
Metals, Dissolved									
Mercury	SW7470A	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	NA	0.002	
Aluminum	SW6010B	mg/L	0.175	<0.1	<0.1	0.222	NA	5	
Arsenic	SW6020A	mg/L	<0.005	<0.005	<0.005	<0.005	NA	0.1	
Barium	SW6020A	mg/L	0.113	0.13	0.123	0.0661	NA	1.0	
Boron	SW6010B	mg/L	<0.1	<0.1	<0.1	<0.1	NA	0.75	
Cadmium	SW6020A	mg/L	<0.005	<0.005	<0.005	<0.005	NA	0.01	
Chromium	SW6020A	mg/L	<0.005	<0.005	<0.005	<0.005	NA	0.05	
Cobalt	SW6020A	mg/L	<0.005	<0.005	<0.005	<0.005	NA	0.05	
Copper	SW6020A	mg/L	<0.005	<0.005	<0.005	<0.005	NA	1.0	
Iron	SW6010B	mg/L	0.113	0.0444	0.0228	0.185	NA	1.0	
Lead	SW6020A	mg/L	<0.005	<0.005	<0.005	<0.005	NA	0.05	
Manganese	SW6010B	mg/L	0.694	1.38	1.7	0.269	NA	0.2	
Molybdenum	SW6020A	mg/L	<0.005	0.0067	<0.005	0.0141	NA	1.0	
Nickel	SW6020A	mg/L	<0.005	<0.005	<0.005	<0.005	NA	0.2	
Selenium	SW6020A	mg/L	<0.01	<0.01	<0.01	<0.01	NA	0.05	
Silver	SW6020A	mg/L	<0.005	<0.005	<0.005	<0.005	NA	0.05	
Zinc	SW6020A	mg/L	<0.01	<0.01	<0.01	<0.01	NA	10	
VOCs (detections and BTEX only)									
	Method	Units	MW-1	MW-2	MW-3	MW-4	Duplicate	NMWQCC Groundwater Standard	
Benzene	8260B	µg/L	<1	<1	<1	<1	<1	10	
Toluene	8260B	µg/L	<1	<1	<1	<1	<1	750	
Ethylbenzene	8260B	µg/L	<1	<1	<1	<1	<1	750	
Total Xylenes	8260B	µg/L	<1	<1	<1	<1	<1	620	
Other									
	Method	Units	MW-1	MW-2	MW-3	MW-4	Duplicate	NMWQCC Groundwater Standard	
Total Dissolved Solids	SM2540C	mg/L	737	626	532	571	NA	1000	

Notes:

MW = monitoring well
 NMWQCC = New Mexico Water Quality Control Commission
 VOCs = volatile organic compounds
 mg/L = milligrams per liter
 µg/L = micrograms per liter
 NA = not analyzed

Table 4. ConocoPhillips San Juan 27-5 #34A - Groundwater Laboratory Analytical Results Summary

Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Manganese (mg/L)
MW-1	7/28/2009	< 5	< 5	< 5	< 5	NA
	9/29/2009	< 1	< 1	< 1	< 1	0.694
MW-2	7/28/2009	< 5	< 5	< 5	< 5	NA
	9/29/2009	< 1	< 1	< 1	< 1	1.38
MW-3	7/28/2009	< 5	< 5	< 5	< 5	NA
	9/29/2009	< 1	< 1	< 1	< 1	1.7
MW-4	7/28/2009	< 5	< 5	< 5	< 5	NA
	9/29/2009	< 1	< 1	< 1	< 1	0.269
NMWQCC Standards		10 (µg/L)	750 (µg/L)	750 (µg/L)	620 (µg/L)	0.2 (mg/L)

Explanation

ND = Not Detected

NMWQCC = New Mexico Water Quality Control Commission

mg/L = milligrams per liter (parts per million)

µg/L = micrograms per liter (parts per billion)

NA = Not Analyzed

<0.7 = Below laboratory detection limit of 0.7 ug/L

Bold = concentrations that exceed the NMWQCC limits

APPENDIX A

Groundwater Sampling Field Forms



WATER SAMPLING FIELD FORM

Project Name San Juan 27-5 34A

Page 1 of 4

Project No. _____

Site Location San Juan County, New Mexico

Site/Well No. MW-1

Coded/
Replicate No. 10:15

Date 9-29-09

Weather Sunny

Time Sampling
Began 9:58

Time Sampling
Completed 10:08

duplicate 10:15

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 33.22

Water-Level Elevation _____

Held _____ Depth to Water Below MP 23.88

Diameter of Casing 2"

Wet _____ Water Column in Well 9.34

Gallons Pumped/Bailed
Prior to Sampling 5 gallons

Gallons per Foot ✓ 0.16

Gallons in Well = 1.4944 x 3

Sampling Pump Intake Setting
(feet below land surface) N/A

Purging Equipment Purge pump (Bailer) = 4.48

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature (°C)	pH	Conductivity (µS/cm³)	TDS (g/L)	DO (mg/L)	ORP (mV)
<u>9:52</u>	<u>13.48</u>	<u>7.17</u>	<u>757</u>	<u>0.492</u>	<u>4.39</u>	<u>138.6</u>
<u>10:01</u>	<u>13.21</u>	<u>7.33</u>	<u>735</u>	<u>0.478</u>	<u>2.80</u>	<u>128.1</u>
<u>10:03</u>	<u>13.13</u>	<u>7.38</u>	<u>734</u>	<u>0.477</u>	<u>2.24</u>	<u>120.3</u>

*turb
1082
925.9
697.9*

Sampling Equipment Purge Pump/Bailer

Constituents Sampled

Container Description

Preservative

BTEX 3 40mL VOA's HCl

Full list metals dissolved 32 oz. plastic HNO₃

TDS 16 oz plastic None

Remarks _____

Sampling Personnel CM, CB

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



WATER SAMPLING FIELD FORM

Project Name San Juan 27-5 34A

Page 2 of 4

Project No. _____

Site Location San Juan County, New Mexico

Site/Well No. MW-2 Coded/Replicate No. _____

Date 9-29-09

Weather Sunny Time Sampling Began 9:30

Time Sampling Completed 1100

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 34.35 Water-Level Elevation _____

Held _____ Depth to Water Below MP 23.4 Diameter of Casing 2"

Wet _____ Water Column in Well 10.95 Gallons Pumped/Bailed Prior to Sampling 3 gallons

Gallons per Foot 0.16

Gallons in Well 1.752 x 3 = 5.256 Sampling Pump Intake Setting (feet below land surface) N/A

Purging Equipment Purge pump (Bailer)

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature (°C)	pH	Conductivity (µS/cm ³)	TDS (g/L)	DO (mg/L)	ORP (mV)
<u>1056</u>	<u>13.35</u>	<u>7.35</u>	<u>870</u>	<u>0.505</u>	<u>4.93</u>	<u>92.3</u>
<u>1058</u>	<u>13.31</u>	<u>7.29</u>	<u>810</u>	<u>0.503</u>	<u>3.92</u>	<u>90.4</u>

tarb
100.4
110.6

Sampling Equipment Purge Pump/Bailer

Constituents Sampled

Container Description

Preservative

BTEX 3 40mL VOA's HCl

Full list metals dissolved 3/4 oz. plastic HNO₃

TDS 16oz plastic None

Remarks Bailed dry @ 2.25 gallons, returned to well to get parameters

Sampling Personnel CM, CB

H₂O clear and sample and filter light brown

Well Casing Volumes			
Gal./ft.	1 1/4" = 0.077	2" = 0.16	3" = 0.37
	1 1/2" = 0.10	2 1/2" = 0.24	3 1/2" = 0.50
			4" = 0.65
			6" = 1.46



WATER SAMPLING FIELD FORM

Project Name San Juan 27-5 34A

Page 3 of 4

Project No. _____

Site Location San Juan County, New Mexico

Site/Well No. MW-3 Coded/
Replicate No. _____

Date 9-29-09

Weather Sunny Time Sampling
Began 1010

Time Sampling
Completed 10:30

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 -33.45 33.18 Water-Level Elevation _____

Held _____ Depth to Water Below MP 23.54 Diameter of Casing 2"

Wet _____ Water Column in Well 9.64 Gallons Pumped/Bailed
Prior to Sampling 5 gallons

Gallons per Foot x 0.16

Gallons in Well 1.5424 x 3 Sampling Pump Intake Setting
(feet below land surface) N/A

Purging Equipment Purge pump/Bailer = 4.6272

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature (°C)	pH	Conductivity (µS/cm³)	TDS (g/L)	DO (mg/L)	ORP (mV)	Turbidity
10:23	13.02	7.20	728	0.474	4.48	84.0	196.3
10:27	12.95	7.17	726	0.472	2.63	73.3	315.5
10:30	12.94	7.15	726	0.472	2.63	67.4	241.4

Sampling Equipment Purge Pump/Bailer

Constituents Sampled

Container Description

Preservative

BTEX Full list metals dissolved 16 3 40mL VOA's 2 oz. plastic HCl

TDS 16 oz plastic None

Remarks _____

Sampling Personnel CM, CR

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



WATER SAMPLING FIELD FORM

Project Name San Juan 27-5 34A

Page 4 of 4

Project No. _____

Site Location San Juan County, New Mexico

Site/Well No. MW-4 Coded/Replicate No. _____

Date 9-29-09

Weather Sunny Time Sampling Began 9:30

Time Sampling Completed 1045

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 32.65

Water-Level Elevation _____

Held _____ Depth to Water Below MP 23.31

Diameter of Casing 2"

Wet _____ Water Column in Well 9.34

Gallons Pumped/Bailed Prior to Sampling 2.25 gallons

Gallons per Foot 0.16

Gallons in Well = $1.4944 \times 3 = 4.48$

Sampling Pump Intake Setting (feet below land surface) N/A

Purging Equipment Purge pump/Bailer 4.48

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature (°C)	pH	Conductivity (µS/cm³)	TDS (g/L)	DO (mg/L)	ORP (mV)
<u>1044</u>	<u>13.53</u>	<u>7.57</u>	<u>903</u>	<u>.587</u>	<u>3.77</u>	<u>72.0</u>

Turbidity
175.5

Sampling Equipment Purge Pump/Bailer

Constituents Sampled

Container Description

Preservative

BTEX 3 40mL VOA's HCl _____

Full list metals dissolved 16 32 oz. plastic HNO₃

TDS 16 oz plastic None

Remarks water down ~1ft, bailed down @ ~1.75 gallons

Sampling Personnel CM, CB

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

APPENDIX B

Groundwater Laboratory Analysis Report



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

Conoco Phillips

Certificate of Analysis Number:

09100118

Report To: Tetra Tech, Inc. Kelly Blanchard 6121 Indian School Road, N.E. Suite 200 Albuquerque NM 87110- ph: (505) 237-8440 fax:	Project Name: San Juan 27-5 #34A Site: Rio Arriba County, NM Site Address: PO Number: State: New Mexico State Cert. No.: Date Reported: 10/14/2009
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This Report Contains A Total Of 18 Pages

Excluding This Page, Chain Of Custody

And

Any Attachments

10/15/2009

Date



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

Case Narrative for:
Conoco Phillips

Certificate of Analysis Number:
09100118

Report To: Tetra Tech, Inc. Kelly Blanchard 6121 Indian School Road, N.E. Suite 200 Albuquerque NM 87110- ph: (505) 237-8440 fax:	Project Name: San Juan 27-5 #34A Site: Rio Arriba County, NM Site Address: PO Number: State: New Mexico State Cert. No.: Date Reported: 10/14/2009
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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:

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.

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.

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.

09100118 Page 1

10/15/2009

Erica Cardenas
 Project Manager

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

Date



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

Conoco Phillips

Certificate of Analysis Number:

09100118

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

Project Name: San Juan 27-5 #34A
Site: Rio Arriba County, NM
Site Address:

PO Number:
State: New Mexico

State Cert. No.:

Date Reported: 10/14/2009

Fax To:

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-1	09100118-01	Water	9/29/2009 10:08:00 AM	10/2/2009 9:15:00 AM	331733	<input type="checkbox"/>
MW-2	09100118-02	Water	9/29/2009 11:00:00 AM	10/2/2009 9:15:00 AM	331733	<input type="checkbox"/>
MW-3	09100118-03	Water	9/29/2009 10:30:00 AM	10/2/2009 9:15:00 AM	331733	<input type="checkbox"/>
MW-4	09100118-04	Water	9/29/2009 10:45:00 AM	10/2/2009 9:15:00 AM	331733	<input type="checkbox"/>
DUPLICATE	09100118-05	Water	9/29/2009 10:15:00 AM	10/2/2009 9:15:00 AM	331733	<input type="checkbox"/>
Trip Blank	09100118-06	Waste	10/1/2009 4:25:00 PM	10/2/2009 9:15:00 AM	331733	<input type="checkbox"/>

Erica Cardenas

10/15/2009

Erica Cardenas
 Project Manager

Date

Kesavalu M. Bagawandoss Ph.D., J.D.
 Laboratory Director

Ted Yen
 Quality Assurance Officer



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

Client Sample ID: MW-1

Collected: 09/29/2009 10:08 SPL Sample ID: 09100118-01

Site: Rio Arriba County, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
MERCURY, DISSOLVED				MCL	SW7470A	Units: mg/L	
Mercury	ND		0.0002	1	10/14/09 11:25	F_S	5245337

Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	10/14/2009 8:15	F_S	1.00

METALS BY METHOD 6010B, DISSOLVED				MCL	SW6010B	Units: mg/L	
Aluminum	0.175		0.1	1	10/10/09 17:25	EG	5240025
Arsenic	ND		0.005	1	10/10/09 17:25	EG	5240025
Barium	0.113		0.005	1	10/10/09 17:25	EG	5240025
Boron	ND		0.1	1	10/10/09 17:25	EG	5240025
Cadmium	ND		0.005	1	10/10/09 17:25	EG	5240025
Chromium	ND		0.005	1	10/10/09 17:25	EG	5240025
Cobalt	ND		0.005	1	10/10/09 17:25	EG	5240025
Copper	ND		0.005	1	10/10/09 17:25	EG	5240025
Iron	0.113		0.02	1	10/10/09 17:25	EG	5240025
Lead	ND		0.005	1	10/10/09 17:25	EG	5240025
Manganese	0.694		0.005	1	10/10/09 17:25	EG	5240025
Molybdenum	ND		0.005	1	10/10/09 17:25	EG	5240025
Nickel	ND		0.005	1	10/10/09 17:25	EG	5240025
Selenium	ND		0.01	1	10/10/09 17:25	EG	5240025
Silver	ND		0.005	1	10/10/09 17:25	EG	5240025
Zinc	ND		0.01	1	10/10/09 17:25	EG	5240025

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3005A	10/02/2009 15:00	R_V	1.00

TOTAL DISSOLVED SOLIDS				MCL	SM2540 C	Units: mg/L	
Total Dissolved Solids (Residue, Filterable)	737		10	1	10/02/09 17:00	CFS	5229586

VOLATILE ORGANICS BY METHOD 8260B				MCL	SW8260B	Units: ug/L	
Benzene	ND		1	1	10/06/09 3:26	LT	5233703
Ethylbenzene	ND		1	1	10/06/09 3:26	LT	5233703
Toluene	ND		1	1	10/06/09 3:26	LT	5233703
m,p-Xylene	ND		1	1	10/06/09 3:26	LT	5233703
o-Xylene	ND		1	1	10/06/09 3:26	LT	5233703
Xylenes, Total	ND		1	1	10/06/09 3:26	LT	5233703
Surr: 1,2-Dichloroethane-d4	99.2	%	78-116	1	10/06/09 3:26	LT	5233703
Surr: 4-Bromofluorobenzene	97.7	%	74-125	1	10/06/09 3:26	LT	5233703
Surr: Toluene-d8	89.2	%	82-118	1	10/06/09 3:26	LT	5233703

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



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

Client Sample ID: MW-2

Collected: 09/29/2009 11:00 SPL Sample ID: 09100118-02

Site: Rio Arriba County, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
MERCURY, DISSOLVED				MCL	SW7470A	Units: mg/L	
Mercury	ND		0.0002	1	10/14/09 11:34	F_S	5245341

Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	10/14/2009 8:15	F_S	1.00

METALS BY METHOD 6010B, DISSOLVED				MCL	SW6010B	Units: mg/L	
Aluminum	ND		0.1	1	10/10/09 17:29	EG	5240026
Arsenic	ND		0.005	1	10/10/09 17:29	EG	5240026
Barium	0.13		0.005	1	10/10/09 17:29	EG	5240026
Boron	ND		0.1	1	10/10/09 17:29	EG	5240026
Cadmium	ND		0.005	1	10/10/09 17:29	EG	5240026
Chromium	ND		0.005	1	10/10/09 17:29	EG	5240026
Cobalt	ND		0.005	1	10/10/09 17:29	EG	5240026
Copper	ND		0.005	1	10/10/09 17:29	EG	5240026
Iron	0.0444		0.02	1	10/10/09 17:29	EG	5240026
Lead	ND		0.005	1	10/10/09 17:29	EG	5240026
Manganese	1.38		0.005	1	10/10/09 17:29	EG	5240026
Molybdenum	0.0067		0.005	1	10/10/09 17:29	EG	5240026
Nickel	ND		0.005	1	10/10/09 17:29	EG	5240026
Selenium	ND		0.01	1	10/10/09 17:29	EG	5240026
Silver	ND		0.005	1	10/10/09 17:29	EG	5240026
Zinc	ND		0.01	1	10/10/09 17:29	EG	5240026

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3005A	10/02/2009 15:00	R_V	1.00

TOTAL DISSOLVED SOLIDS				MCL	SM2540 C	Units: mg/L	
Total Dissolved Solids (Residue, Filterable)	626		10	1	10/02/09 17:00	CFS	5229589

VOLATILE ORGANICS BY METHOD 8260B				MCL	SW8260B	Units: ug/L	
Benzene	ND		1	1	10/06/09 3:53	LT	5233704
Ethylbenzene	ND		1	1	10/06/09 3:53	LT	5233704
Toluene	ND		1	1	10/06/09 3:53	LT	5233704
m,p-Xylene	ND		1	1	10/06/09 3:53	LT	5233704
o-Xylene	ND		1	1	10/06/09 3:53	LT	5233704
Xylenes, Total	ND		1	1	10/06/09 3:53	LT	5233704
Surr: 1,2-Dichloroethane-d4	98.3	%	78-116	1	10/06/09 3:53	LT	5233704
Surr: 4-Bromofluorobenzene	96.8	%	74-125	1	10/06/09 3:53	LT	5233704
Surr: Toluene-d8	89.6	%	82-118	1	10/06/09 3:53	LT	5233704

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



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

Client Sample ID: MW-3

Collected: 09/29/2009 10:30 SPL Sample ID: 09100118-03

Site: Rio Arriba County, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
MERCURY, DISSOLVED				MCL	SW7470A	Units: mg/L	
Mercury	ND		0.0002	1	10/14/09 11:36	F_S	5245342

Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	10/14/2009 8:15	F_S	1.00

METALS BY METHOD 6010B, DISSOLVED				MCL	SW6010B	Units: mg/L	
Aluminum	ND		0.1	1	10/10/09 17:34	EG	5240027
Arsenic	ND		0.005	1	10/10/09 17:34	EG	5240027
Barium	0.123		0.005	1	10/10/09 17:34	EG	5240027
Boron	ND		0.1	1	10/10/09 17:34	EG	5240027
Cadmium	ND		0.005	1	10/10/09 17:34	EG	5240027
Chromium	ND		0.005	1	10/10/09 17:34	EG	5240027
Cobalt	ND		0.005	1	10/10/09 17:34	EG	5240027
Copper	ND		0.005	1	10/10/09 17:34	EG	5240027
Iron	0.0228		0.02	1	10/10/09 17:34	EG	5240027
Lead	ND		0.005	1	10/10/09 17:34	EG	5240027
Manganese	1.7		0.005	1	10/10/09 17:34	EG	5240027
Molybdenum	ND		0.005	1	10/10/09 17:34	EG	5240027
Nickel	ND		0.005	1	10/10/09 17:34	EG	5240027
Selenium	ND		0.01	1	10/10/09 17:34	EG	5240027
Silver	ND		0.005	1	10/10/09 17:34	EG	5240027
Zinc	ND		0.01	1	10/10/09 17:34	EG	5240027

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3005A	10/02/2009 15:00	R_V	1.00

TOTAL DISSOLVED SOLIDS				MCL	SM2540 C	Units: mg/L	
Total Dissolved Solids (Residue, Filterable)	532		10	1	10/02/09 17:00	CFS	5229590

VOLATILE ORGANICS BY METHOD 8260B				MCL	SW8260B	Units: ug/L	
Benzene	ND		1	1	10/06/09 4:21	LT	5233705
Ethylbenzene	ND		1	1	10/06/09 4:21	LT	5233705
Toluene	ND		1	1	10/06/09 4:21	LT	5233705
m,p-Xylene	ND		1	1	10/06/09 4:21	LT	5233705
o-Xylene	ND		1	1	10/06/09 4:21	LT	5233705
Xylenes, Total	ND		1	1	10/06/09 4:21	LT	5233705
Surr: 1,2-Dichloroethane-d4	100	%	78-116	1	10/06/09 4:21	LT	5233705
Surr: 4-Bromofluorobenzene	97.4	%	74-125	1	10/06/09 4:21	LT	5233705
Surr: Toluene-d8	89.6	%	82-118	1	10/06/09 4:21	LT	5233705

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



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

Client Sample ID: MW-4

Collected: 09/29/2009 10:45 SPL Sample ID: 09100118-04

Site: Rio Arriba County, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
MERCURY, DISSOLVED				MCL	SW7470A	Units: mg/L	
Mercury	ND		0.0002	1	10/14/09 11:38	F_S	5245343

Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	10/14/2009 8:15	F_S	1.00

METALS BY METHOD 6010B, DISSOLVED				MCL	SW6010B	Units: mg/L	
Aluminum	0.222		0.1	1	10/10/09 17:38	EG	5240028
Arsenic	ND		0.005	1	10/10/09 17:38	EG	5240028
Barium	0.0661		0.005	1	10/10/09 17:38	EG	5240028
Boron	ND		0.1	1	10/10/09 17:38	EG	5240028
Cadmium	ND		0.005	1	10/10/09 17:38	EG	5240028
Chromium	ND		0.005	1	10/10/09 17:38	EG	5240028
Cobalt	ND		0.005	1	10/10/09 17:38	EG	5240028
Copper	ND		0.005	1	10/10/09 17:38	EG	5240028
Iron	0.185		0.02	1	10/10/09 17:38	EG	5240028
Lead	ND		0.005	1	10/10/09 17:38	EG	5240028
Manganese	0.269		0.005	1	10/10/09 17:38	EG	5240028
Molybdenum	0.0141		0.005	1	10/10/09 17:38	EG	5240028
Nickel	ND		0.005	1	10/10/09 17:38	EG	5240028
Selenium	ND		0.01	1	10/10/09 17:38	EG	5240028
Silver	ND		0.005	1	10/10/09 17:38	EG	5240028
Zinc	ND		0.01	1	10/10/09 17:38	EG	5240028

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3005A	10/02/2009 15:00	R_V	1.00

TOTAL DISSOLVED SOLIDS				MCL	SM2540 C	Units: mg/L	
Total Dissolved Solids (Residue, Filterable)	571		10	1	10/02/09 17:00	CFS	5229591

VOLATILE ORGANICS BY METHOD 8260B				MCL	SW8260B	Units: ug/L	
Benzene	ND		1	1	10/06/09 4:48	LT	5233706
Ethylbenzene	ND		1	1	10/06/09 4:48	LT	5233706
Toluene	ND		1	1	10/06/09 4:48	LT	5233706
m,p-Xylene	ND		1	1	10/06/09 4:48	LT	5233706
o-Xylene	ND		1	1	10/06/09 4:48	LT	5233706
Xylenes, Total	ND		1	1	10/06/09 4:48	LT	5233706
Surr: 1,2-Dichloroethane-d4	98.7	%	78-116	1	10/06/09 4:48	LT	5233706
Surr: 4-Bromofluorobenzene	95.8	%	74-125	1	10/06/09 4:48	LT	5233706
Surr: Toluene-d8	88.5	%	82-118	1	10/06/09 4:48	LT	5233706

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



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

Client Sample ID: DUPLICATE

Collected: 09/29/2009 10:15 SPL Sample ID: 09100118-05

Site: Rio Arriba 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	ND		1	1	10/06/09 2:04	LT	5233745
Ethylbenzene	ND		1	1	10/06/09 2:04	LT	5233745
Toluene	ND		1	1	10/06/09 2:04	LT	5233745
m,p-Xylene	ND		1	1	10/06/09 2:04	LT	5233745
o-Xylene	ND		1	1	10/06/09 2:04	LT	5233745
Xylenes, Total	ND		1	1	10/06/09 2:04	LT	5233745
Surr: 1,2-Dichloroethane-d4	99.0		% 78-116	1	10/06/09 2:04	LT	5233745
Surr: 4-Bromofluorobenzene	97.5		% 74-125	1	10/06/09 2:04	LT	5233745
Surr: Toluene-d8	89.8		% 82-118	1	10/06/09 2:04	LT	5233745

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: 10/01/2009 16:25 SPL Sample ID: 09100118-06

Site: Rio Arriba 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	ND		1	1	10/06/09 1:37	LT	5233699
Ethylbenzene	ND		1	1	10/06/09 1:37	LT	5233699
Toluene	ND		1	1	10/06/09 1:37	LT	5233699
m,p-Xylene	ND		1	1	10/06/09 1:37	LT	5233699
o-Xylene	ND		1	1	10/06/09 1:37	LT	5233699
Xylenes, Total	ND		1	1	10/06/09 1:37	LT	5233699
Surr: 1,2-Dichloroethane-d4	98.5		% 78-116	1	10/06/09 1:37	LT	5233699
Surr: 4-Bromofluorobenzene	96.8		% 74-125	1	10/06/09 1:37	LT	5233699
Surr: Toluene-d8	89.8		% 82-118	1	10/06/09 1:37	LT	5233699

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



Quality Control Report

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

Conoco Phillips
San Juan 27-5 #34A

Analysis: Metals by Method 6010B, Dissolved
Method: SW6010B

WorkOrder: 09100118
Lab Batch ID: 94319

Method Blank

Samples in Analytical Batch:

RunID: ICP2_091010A-5240009 Units: mg/L
Analysis Date: 10/10/2009 16:14 Analyst: EG
Preparation Date: 10/02/2009 15:00 Prep By: R_V Method SW3005A

Lab Sample ID Client Sample ID
09100118-01B MW-1
09100118-02B MW-2
09100118-03B MW-3
09100118-04B MW-4

Table with 3 columns: Analyte, Result, Rep Limit. Lists various elements like Aluminum, Arsenic, Barium, etc. with results as ND and their respective reporting limits.

Laboratory Control Sample (LCS)

RunID: ICP2_091010A-5240010 Units: mg/L
Analysis Date: 10/10/2009 16:18 Analyst: EG
Preparation Date: 10/02/2009 15:00 Prep By: R_V Method SW3005A

Table with 6 columns: Analyte, Spike Added, Result, Percent Recovery, Lower Limit, Upper Limit. Shows recovery data for various elements like Aluminum, Arsenic, Barium, etc.

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B/V - Analyte detected in the associated Method Blank D - Recovery Unreportable due to Dilution
J - Estimated value between MDL and PQL * - Recovery Outside Advisable QC Limits
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.
NTNC - 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.



Quality Control Report

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

Conoco Phillips
San Juan 27-5 #34A

Analysis: Metals by Method 6010B, Dissolved
Method: SW6010B

WorkOrder: 09100118
Lab Batch ID: 94319

Laboratory Control Sample (LCS)

RunID: ICP2_091010A-5240010 Units: mg/L
Analysis Date: 10/10/2009 16:18 Analyst: EG
Preparation Date: 10/02/2009 15:00 Prep By: R_V Method SW3005A

Table with 6 columns: Analyte, Spike Added, Result, Percent Recovery, Lower Limit, Upper Limit. Rows include Selenium, Silver, and Zinc.

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

Sample Spiked: 09100020-01
RunID: ICP2_091010A-5240012 Units: mg/L
Analysis Date: 10/10/2009 16:27 Analyst: EG
Preparation Date: 10/02/2009 15:00 Prep By: R_V Method SW3005A

Large table with 12 columns: Analyte, Sample Result, MS Spike Added, MS Result, MS % Recovery, MSD Spike Added, MSD Result, MSD % Recovery, RPD, RPD Limit, Low Limit, High Limit. Lists various elements like Aluminum, Arsenic, Barium, etc.

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B/V - Analyte detected in the associated Method Blank D - Recovery Unreportable due to Dilution
J - Estimated value between MDL and PQL * - Recovery Outside Advisable QC Limits
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

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Quality Control Report

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

Conoco Phillips
San Juan 27-5 #34A

Analysis: Mercury, Dissolved
Method: SW7470A

WorkOrder: 09100118
Lab Batch ID: 94627

Method Blank

Samples in Analytical Batch:

RunID: HGLD_091014A-5245335 Units: mg/L
Analysis Date: 10/14/2009 11:20 Analyst: F_S
Preparation Date: 10/14/2009 8:15 Prep By: F_S Method SW7470A

Lab Sample ID Client Sample ID
09100118-01B MW-1
09100118-02B MW-2
09100118-03B MW-3
09100118-04B MW-4

Table with 3 columns: Analyte, Result, Rep Limit. Row: Mercury, ND, 0.0002

Laboratory Control Sample (LCS)

RunID: HGLD_091014A-5245336 Units: mg/L
Analysis Date: 10/14/2009 11:22 Analyst: F_S
Preparation Date: 10/14/2009 8:15 Prep By: F_S Method SW7470A

Table with 6 columns: Analyte, Spike Added, Result, Percent Recovery, Lower Limit, Upper Limit. Row: Mercury, 0.002000, 0.002007, 100.4, 80, 120

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

Sample Spiked: 09100118-01
RunID: HGLD_091014A-5245338 Units: mg/L
Analysis Date: 10/14/2009 11:27 Analyst: F_S
Preparation Date: 10/14/2009 8:15 Prep By: F_S Method SW7470A

Table with 12 columns: Analyte, Sample Result, MS Spike Added, MS Result, MS % Recovery, MSD Spike Added, MSD Result, MSD % Recovery, RPD, RPD Limit, Low Limit, High Limit. Row: Mercury, ND, 0.002, 0.002269, 113.5, 0.002, 0.001939, 96.94, 15.70, 20, 75, 125

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B/V - Analyte detected in the associated Method Blank D - Recovery Unreportable due to Dilution
J - Estimated value between MDL and PQL * - Recovery Outside Advisable QC Limits
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

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.



Quality Control Report

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

Conoco Phillips
San Juan 27-5 #34A

Analysis: Volatile Organics by Method 8260B
Method: SW8260B

WorkOrder: 09100118
Lab Batch ID: R285623

Method Blank

Samples in Analytical Batch:

RunID: N_091005F-5233698 Units: ug/L
Analysis Date: 10/06/2009 1:09 Analyst: LT

Lab Sample ID Client Sample ID
09100118-01A MW-1
09100118-02A MW-2
09100118-03A MW-3
09100118-04A MW-4
09100118-05A DUPLICATE
09100118-06A Trip Blank

Table with 3 columns: Analyte, Result, Rep Limit. Rows include Benzene, Ethylbenzene, Toluene, m,p-Xylene, o-Xylene, Xylenes, Total, and various Surrogate standards.

Laboratory Control Sample (LCS)

RunID: N_091005F-5233744 Units: ug/L
Analysis Date: 10/06/2009 0:15 Analyst: LT

Table with 6 columns: Analyte, Spike Added, Result, Percent Recovery, Lower Limit, Upper Limit. Rows include Benzene, Ethylbenzene, Toluene, m,p-Xylene, o-Xylene, Xylenes, Total, and various Surrogate standards.

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

Sample Spiked: 09100118-05
RunID: N_091005F-5233746 Units: ug/L
Analysis Date: 10/06/2009 2:31 Analyst: LT

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B/V - Analyte detected in the associated Method Blank D - Recovery Unreportable due to Dilution
J - Estimated value between MDL and PQL * - Recovery Outside Advisable QC Limits
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

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Quality Control Report

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

Conoco Phillips
San Juan 27-5 #34A

Analysis: Volatile Organics by Method 8260B
Method: SW8260B

WorkOrder: 09100118
Lab Batch ID: R285623

Table with 12 columns: Analyte, Sample Result, MS Spike Added, MS Result, MS % Recovery, MSD Spike Added, MSD Result, MSD % Recovery, RPD, RPD Limit, Low Limit, High Limit. Rows include Benzene, Ethylbenzene, Toluene, m,p-Xylene, o-Xylene, Xylenes, Total, and various surrogates.

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.



Quality Control Report

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

Conoco Phillips
San Juan 27-5 #34A

Analysis: Total Dissolved Solids
Method: SM2540 C

WorkOrder: 09100118
Lab Batch ID: R285374

Method Blank

Samples in Analytical Batch:

RunID: WET_091003F-5229574 Units: mg/L
Analysis Date: 10/02/2009 17:00 Analyst: CFS

Lab Sample ID Client Sample ID
09100118-03C MW-3
09100118-04C MW-4

Table with 3 columns: Analyte, Result, Rep Limit. Row: Total Dissolved Solids (Residue, Filterable) ND 10

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

RunID: WET_091003F-5229576 Units: mg/L
Analysis Date: 10/02/2009 17:00 Analyst: CFS

Table with 11 columns: Analyte, LCS Spike Added, LCS Result, LCS Percent Recovery, LCSD Spike Added, LCSD Result, LCSD Percent Recovery, RPD, RPD Limit, Lower Limit, Upper Limit. Row: Total Dissolved Solids (Residue, Filterabl) 200.0 202.0 101.0 200.0 201.0 100.5 0.5 10 95 107

Sample Duplicate

Original Sample: 09100121-03
RunID: WET_091003F-5229594 Units: mg/L
Analysis Date: 10/02/2009 17:00 Analyst: CFS

Table with 5 columns: Analyte, Sample Result, DUP Result, RPD, RPD Limit. Row: Total Dissolved Solids (Residue, Filterabl) 3340 3338 0.0599 10

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B/V - Analyte detected in the associated Method Blank D - Recovery Unreportable due to Dilution
J - Estimated value between MDL and PQL * - Recovery Outside Advisable QC Limits
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

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Quality Control Report

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

Conoco Phillips
San Juan 27-5 #34A

Analysis: Total Dissolved Solids
Method: SM2540 C

WorkOrder: 09100118
Lab Batch ID: R285374A

Method Blank

Samples in Analytical Batch:

RunID: WET_091003F-5229574 Units: mg/L
Analysis Date: 10/02/2009 17:00 Analyst: CFS

Lab Sample ID Client Sample ID
09100118-01C MW-1
09100118-02C MW-2

Table with 3 columns: Analyte, Result, Rep Limit. Row: Total Dissolved Solids (Residue, Filterable) ND 10

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

RunID: WET_091003F-5229576 Units: mg/L
Analysis Date: 10/02/2009 17:00 Analyst: CFS

Table with 11 columns: Analyte, LCS Spike Added, LCS Result, LCS Percent Recovery, LCSD Spike Added, LCSD Result, LCSD Percent Recovery, RPD, RPD Limit, Lower Limit, Upper Limit. Row: Total Dissolved Solids (Residue, Filterabl) 200.0 202.0 101.0 200.0 201.0 100.5 0.5 10 95 107

Sample Duplicate

Original Sample: 09100118-01
RunID: WET_091003F-5229586 Units: mg/L
Analysis Date: 10/02/2009 17:00 Analyst: CFS

Table with 5 columns: Analyte, Sample Result, DUP Result, RPD, RPD Limit. Row: Total Dissolved Solids (Residue, Filterabl) 737 739 0.271 10

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B/V - Analyte detected in the associated Method Blank D - Recovery Unreportable due to Dilution
J - Estimated value between MDL and PQL * - Recovery Outside Advisable QC Limits
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

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*Sample Receipt Checklist
And
Chain of Custody*



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

Sample Receipt Checklist

Workorder:	09100118	Received By:	T_B
Date and Time Received:	10/2/2009 9:15:00 AM	Carrier name:	Fedex-Priority
Temperature:	2.0°C	Chilled by:	Water Ice

1. Shipping container/cooler in good condition? Yes No Not Present
2. Custody seals intact on shipping 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.

331733

09100118

page of

Client Name: Teta Tech / Conoco Phillips
 Address: 6121 Indian School Rd Ste 200
 City: Albuquerque State: NM Zip: 87110
 Phone/Fax: 505-237-9656
 Client Contact: Jolly Blanchard Email: jolly.blanchard@conoco.com
 Project Name/No.: San Juan 27-5 #34A

Site Name: Bio Ambya NM
 Site Location: Conoco Phillips
 Invoice To: Conoco Phillips

SAMPLE ID	DATE	TIME	comp	grab	matrix	bottle	size	pres.	Number of Containers	Requested Analysis
MW-1	9-29-09	1008		X	W	V	40	1	3	BTEX ONLY
MW-1	9-29-09	1008		X	W	P	16	NONE	2	X
MW-2	9-29-09	1100		X	W	V	40	1	3	X
MW-2	9-29-09	1100		X	W	P	16	NONE	2	X
MW-3	9-29-09	1030		X	W	V	40	1	3	X
MW-3	9-29-09	1030		X	W	P	16	NONE	2	X
MW-4	9-29-09	1045		X	W	V	40	1	3	X
MW-4	9-29-09	1045		X	W	P	16	NONE	2	X
Duplicate	9-29-09	1015		X	W	V	40	1	3	X
Trip Blank	10-1-09	1625		X	W	V	40	1	2	X

Laboratory remarks:

Client/Consultant Remarks: Metals = 7470A - Mercury
6010 B - Aluminum, Iron, Barium
6020 A - Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Lead

Requested TAT

- 1 Business Day Contract
- 2 Business Days Standard
- 3 Business Days
- Other

Special Reporting Requirements Results: Fax Email PDF LA RECAP

Standard QC Level 3 QC Level 4 QC TX TRRP

7. Relinquished by: [Signature] date: 10-1-09

8. Relinquished by: [Signature] date: 10-2-09

9. Relinquished by: [Signature] date: 10-2-09

10. Relinquished by: [Signature] date: 10-2-09

11. Relinquished by: [Signature] date: 10-2-09

12. Relinquished by: [Signature] date: 10-2-09

13. Relinquished by: [Signature] date: 10-2-09

14. Relinquished by: [Signature] date: 10-2-09

15. Relinquished by: [Signature] date: 10-2-09

Intact? Y N
 Ice? Y N
 Temp: 2.2

Special Detection Limits (specify):

PM review (initials): [Signature]

1. Received by: [Signature] time: 1630

2. Received by: [Signature] time: 1630

3. Received by: [Signature] time: 1630

4. Received by: [Signature] time: 1630

5. Received by: [Signature] time: 1630

6. Received by: [Signature] time: 1630

7. Received by: [Signature] time: 1630

8. Received by: [Signature] time: 1630

9. Received by: [Signature] time: 1630

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

6020A (continued) Manganese, Molybdenum, Nickel, Selenium, Silver and Zinc (Also please filter & preserve before Analysis)