

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

OIL CONS. DIV DIST. 3

JUL 22 2016

Submit 1 Copy to appropriate District Office to  
accordance with 19.15.29 NMAC.

Form C-141  
Revised August 8, 2011

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company <b>ConocoPhillips Company</b>	Contact <b>Lisa Hunter</b>	
Address <b>3401 East 30<sup>th</sup> St, Farmington, NM</b>	Telephone No. <b>(505) 258-1607</b>	
Facility Name: <b>San Juan 28-7 Unit 165</b>	Facility Type: <b>Gas Well</b>	
Surface Owner <b>State</b>	Mineral Owner <b>State (E-2825-6)</b>	API No. <b>3003920518</b>

LOCATION OF RELEASE

Unit Letter <b>A</b>	Section <b>16</b>	Township <b>27N</b>	Range <b>07W</b>	Feet from the <b>1040</b>	North/South Line <b>North</b>	Feet from the <b>1180</b>	East/West Line <b>East</b>	County <b>Rio Arriba</b>
-------------------------	----------------------	------------------------	---------------------	------------------------------	----------------------------------	------------------------------	-------------------------------	-----------------------------

Latitude **36.57821** Longitude **-107.57480**

NATURE OF RELEASE

Type of Release <b>Produced Water</b>	Volume of Release <b>11bbl</b>	Volume Recovered <b>3bbl</b>
Source of Release <b>Pit Tank</b>	Date and Hour of Occurrence <b>Unknown</b>	Date and Hour of Discovery <b>02/16/16 @ 8:00 a.m.</b>
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom? <b>N/A</b>	
By Whom? <b>N/A</b>	Date and Hour <b>N/A</b>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. <b>N/A</b>	

If a Watercourse was Impacted, Describe Fully.\*

**N/A**

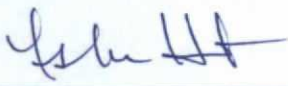
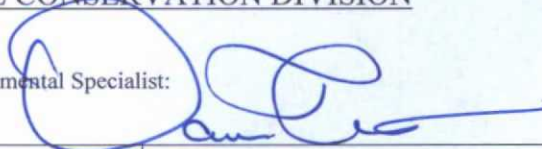
Describe Cause of Problem and Remedial Action Taken.\*

**During routine maintenance visit leak was discovered at bottom of pit tank. Truck was called to recover standing fluid (3bbls).**

Describe Area Affected and Cleanup Action Taken.\*

**Excavation was 16' x 16' x 3' Deep. 115 c/yds of soil was transported to Envirotech Land Farm. Analytical results were below the regulatory standards – no further action required. The soil sampling report is attached for review.**

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 		OIL CONSERVATION DIVISION	
Printed Name: <b>Lisa Hunter</b>		Approved by Environmental Specialist: 	
Title: <b>Field Environmental Specialist</b>		Approval Date: <b>7/27/2016</b>	Expiration Date:
E-mail Address: <b>Lisa.Hunter@cop.com</b>		Conditions of Approval:	Attached <input type="checkbox"/>
Date: <b>July 19, 2016</b> Phone: <b>(505) 258-1607</b>		<b>NCS1610542560</b>	

\* Attach Additional Sheets If Necessary

OIL CONS. DIV DIST. 3

JUL 22 2016

## **San Juan 28-7 Unit 165 Release Report**

Unit Letter A, Section 16, Township 27 North, Range 7 West  
Rio Arriba County, New Mexico

June 15, 2016

Prepared for:  
ConocoPhillips  
5525 Highway 64  
Farmington, New Mexico 87401

Prepared by:  
Rule Engineering, LLC  
501 Airport Drive, Suite 205  
Farmington, New Mexico 87401

# ConocoPhillips San Juan 28-7 Unit 165 Release Report

Prepared for:

ConocoPhillips  
5525 Highway 64  
Farmington, New Mexico 87401

Prepared by:

Rule Engineering, LLC  
501 Airport Drive, Suite 205  
Farmington, New Mexico 87401



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Heather M. Woods, P.G., Area Manager

Reviewed by:



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Russell Knight, PG, Principal Hydrogeologist

June 15, 2016



## Table of Contents

1.0	Introduction.....	1
2.0	Release Summary .....	1
3.0	NMOCD Site Ranking.....	1
4.0	Field Activities .....	2
5.0	Soil Sampling .....	2
6.0	Field Screening Results.....	3
7.0	Laboratory Analytical Results .....	3
8.0	Conclusions .....	3
9.0	Closure and Limitations .....	4

## Tables

Table 1	NMOCD Site Ranking Determination
Table 2	Field Screening and Laboratory Analytical Results

## Figures

Figure 1	Topographic Map
Figure 2	Aerial Site Map

## Appendices

Appendix A	Executed C-138 Soil Waste Acceptance Form
Appendix B	Analytical Laboratory Report

## 1.0 Introduction

The ConocoPhillips San Juan 28-7 Unit 165 release site is located in Unit Letter A, Section 16, Township 27 North, Range 7 West, in Rio Arriba County, New Mexico. The release of an estimated 11 barrels (bbls) of produced water, discovered on February 16, 2016, was the result of the development of a corrosion hole in the below grade tank (BGT) and approximately 3 bbls of the liquid was recovered.

A topographic map of the location reproduced from the United States Geological Society quadrangle map of the area is included as Figure 1 and an aerial site map is included as Figure 2.

## 2.0 Release Summary

<b>Site Name</b>	San Juan 28-7 Unit 165		
<b>Site Location Description</b>	Unit Letter A, Section 16, Township 27 North, Range 7 West		
<b>Wellhead GPS Location</b>	N36.57813 and W107.57503	<b>Release GPS Location</b>	N36.57821 and W107.57480
<b>Land Jurisdiction</b>	State of New Mexico	<b>Discovery Date</b>	February 16, 2016
<b>Release Source</b>	Below Grade Tank	<b>Substance(s) Released</b>	Produced Water
<b>Volume Released</b>	11 bbls	<b>Volume Recovered</b>	3 bbls
<b>NMOCD Site Rank</b>	0		
<b>Distance to Nearest Surface Water</b>	Unnamed, ephemeral washes are located over 1,000 feet to the west and east which drain to Cuervo Canyon		
<b>Estimated Depth to Groundwater</b>	Greater than 100 feet below grade surface (bgs)	<b>Distance to Nearest Water Well or Spring</b>	Greater than 1,000 feet

## 3.0 NMOCD Site Ranking

In accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills, and Releases (August 1993), this site was assigned a ranking score of 0 (Table 1).

Depth to groundwater at the site is estimated to be greater than 100 feet bgs based on the elevation differential between the release location and the local major washes, in addition to the depth to groundwater information published on the New Mexico Office of



the State Engineer (NMOSE) online New Mexico Water Rights Reporting System (NMWRRS) for local registered water wells.

A review was completed of the NMWRRS and no water wells were identified within a 1,000 foot radius of the location. No water wells were observed within a 1,000 foot radius of the location during a visual inspection.

Unnamed, ephemeral washes are located over 1,000 feet to the east and west of the release location, which drain to the wash in Cuervo Canyon.

Based on the ranking score of 0, action levels for remediated soils at the site are as follows: 10 milligrams per kilogram (mg/kg) benzene, 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 5,000 mg/kg total petroleum hydrocarbons (TPH) as gasoline range organics (GRO) and diesel range organics (DRO).

#### **4.0 Field Activities**

On March 23, 2016, Rule Engineering, LLC (Rule) personnel collected confirmation samples from the remedial excavation. Hydrocarbon impacted soils and soft rock had from within the BGT depression had been removed by a ConocoPhillips contractor prior to sampling.

Approximately 115 bbls of soil were excavated and transported to Envirotech Landfarm near Bloomfield, New Mexico for disposal/remediation. The maximum extent of the excavation measured approximately 16 feet by 16 feet by 3 feet in depth below the surrounding ground level. The excavation was backfilled with clean, imported material to the appropriate level for replacement of the tank. A depiction of the final excavation with sample locations is included as Figure 2. A copy of the executed C-138 Solid Waste Acceptance Form is included in Appendix A.

#### **5.0 Soil Sampling**

Rule collected two composite confirmation soil samples (SC-1 and SC-2) from the final excavation. Each confirmation soil sample is a representative composite comprised of four to five equivalent portions of soil collected from the sampled area.

A portion of each sample was field screened for volatile organic compounds (VOCs) and TPH. Field screening for VOC vapors was conducted with a photoionization detector (PID). Prior to field screening, the PID was calibrated with 100 parts per million (ppm) isobutylene gas.

Soil samples collected for laboratory analysis were placed into laboratory supplied glassware, labeled, and maintained on ice until delivery to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico. All samples were analyzed for BTEX per U.S. Environmental Protection Agency (USEPA) Method 8021B, TPH (GRO/DRO) per USEPA



8015D and chloride per USEPA Method 300.0. Laboratory analytical results are summarized in Table 2. The analytical laboratory report is included in Appendix B.

## **6.0 Field Screening Results**

Field screening results for soil confirmation samples SC-1 and SC-2 indicated VOC concentrations of 2.5 ppm and 250 ppm, respectively. Field screening results are summarized in Table 2.

## **7.0 Laboratory Analytical Results**

Laboratory analytical results for excavation confirmation sample SC-1 reported the benzene and total BTEX concentrations below the laboratory reporting limits of 0.024 mg/kg and 0.216 mg/kg, which are below the NMOCD action levels of 10 mg/kg and 50 mg/kg, respectively. The TPH (GRO/DRO) concentration for SC-1 was reported as 23 mg/kg, which is below the NMOCD action level 5,000 mg/kg for a site rank of 0. The chloride concentration for SC-1 was reported below the laboratory reporting limit of 30 mg/kg.

Laboratory analytical results for excavation confirmation sample SC-2 reported the benzene concentration below the laboratory reporting limits of 0.099 mg/kg, which is below the NMOCD action level of 10 mg/kg. The total BTEX concentration for SC-2 was reported at 3.0 mg/kg, which is below the NMOCD action level of 50 mg/kg. The TPH (GRO/DRO) concentration for SC-2 was reported as 4,140 mg/kg, which is below the NMOCD action level 5,000 mg/kg for a site rank of 0. The chloride concentration for SC-1 was reported as 42 mg/kg.

Laboratory analytical results are summarized in Table 2. The analytical laboratory report is included in Appendix B.

## **8.0 Conclusions**

The ConocoPhillips San Juan 28-7 Unit 165 release site is located in Unit Letter A, Section 16, Township 27 North, Range 7 West, in Rio Arriba County, New Mexico. The release of an estimated 11 barrels of produced water, discovered on February 16, 2016, was the result of the development of a corrosion hole in the BGT and approximately 3 bbls of the liquid was recovered. Following the excavation of hydrocarbon impacted soils, two confirmation samples (SC-1 and SC-2) were collected from the resultant excavation which measured approximately 16 feet by 16 feet by 3 feet in depth below the surrounding ground level. Laboratory analytical results for confirmation samples SC-1 and SC-2 reported benzene, total BTEX, and total TPH (GRO/DRO) concentrations below the applicable NMOCD action levels for a site rank of 0. Approximately 115 bbls of soil were excavated and transported to Envirotech Landfarm near Bloomfield, New Mexico for disposal/remediation. The excavation was backfilled with clean, imported material to an appropriate level for replacement of the tank.

Based on laboratory analytical results of the confirmation soil samples, no further work is recommended at this time.

## **9.0 Closure and Limitations**

This report has been prepared for the exclusive use of ConocoPhillips and is subject to the terms, conditions, and limitations stated in Rule's report and Service Agreement with ConocoPhillips. All work has been performed in accordance with generally accepted professional environmental consulting practices. No other warranty is expressed or implied.



## Tables

**Table 1. NMOCD Site Ranking Determination**  
**ConocoPhillips**  
**San Juan 28-7 Unit 165**  
**Rio Arriba County, New Mexico**

Ranking Criteria	Ranking Score	Site-Based Ranking Score	Basis for Determination	Data Sources
Depth to Groundwater				
<50 feet	20	0	Elevation differential information between location and major washes derived from the topographic map of the area and depth to groundwater information published on the New Mexico Office of the State Engineer's iWaters database.	NMOCD Online database, NMOSE NMWRRS, Gould Pass Quadrangle, Google Earth, and Visual Inspection
50-99 feet	10			
>100 feet	0			
Wellhead Protection Area				
<1,000 feet from a water source, or <200 feet from private domestic water source	20 (Yes)	0	No water source or recorded water wells within 1,000 foot radius of location.	NMOSE NMWRRS, Gould Pass Quadrangle, Google Earth, and Visual Inspection
	0 (No)			
Distance to Surface Water Body				
<200 horizontal feet	20	0	Unnamed, ephemeral washes to the west and east are located over 1,000 feet from release location, which drain to the wash in Cuervo Canyon.	Gould Pass Quadrangle, Google Earth, and Visual Inspection
200 to 1,000 horizontal feet	10			
>1,000 horizontal feet	0			
Site Based Total Ranking Score 0				



**Table 2. Field Screening and Laboratory Analytical Results**  
**ConocoPhillips**  
**San Juan 28-7 Unit 165**  
**Rio Arriba County, New Mexico**

Sample ID	Date	Sample Time	Sample Type	Sample Depth (ft)	VOCs* (PID) (ppm)	Laboratory Analytical Results							
						Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	Chlorides (mg/kg)
NMOCD Action Levels**					100	10	--	--	--	50	5,000		--
SC-1	3/23/16	12:00	Composite	0 to 1.5	2.5	<0.024	<0.048	<0.048	<0.096	<0.216	<4.8	23	<30
SC-2	3/23/16	12:10	Composite	0 to 1.5	250	<0.099	<0.20	0.21	2.8	3.0	140	4,000	42

Notes: VOCs - volatile organic compounds

PID - photoionization detector

BTEX - benzene, toluene, ethylbenzene, and total xylenes

TPH - total petroleum hydrocarbons

NMOCD - New Mexico Oil Conservation Division

\*Field screening results

\*\*NMOCD Guidelines for Remediation of Leaks, Spills, and Releases (1993) for a site rank of 0

GRO - gasoline range organics

DRO - diesel range organics

ppm - parts per million

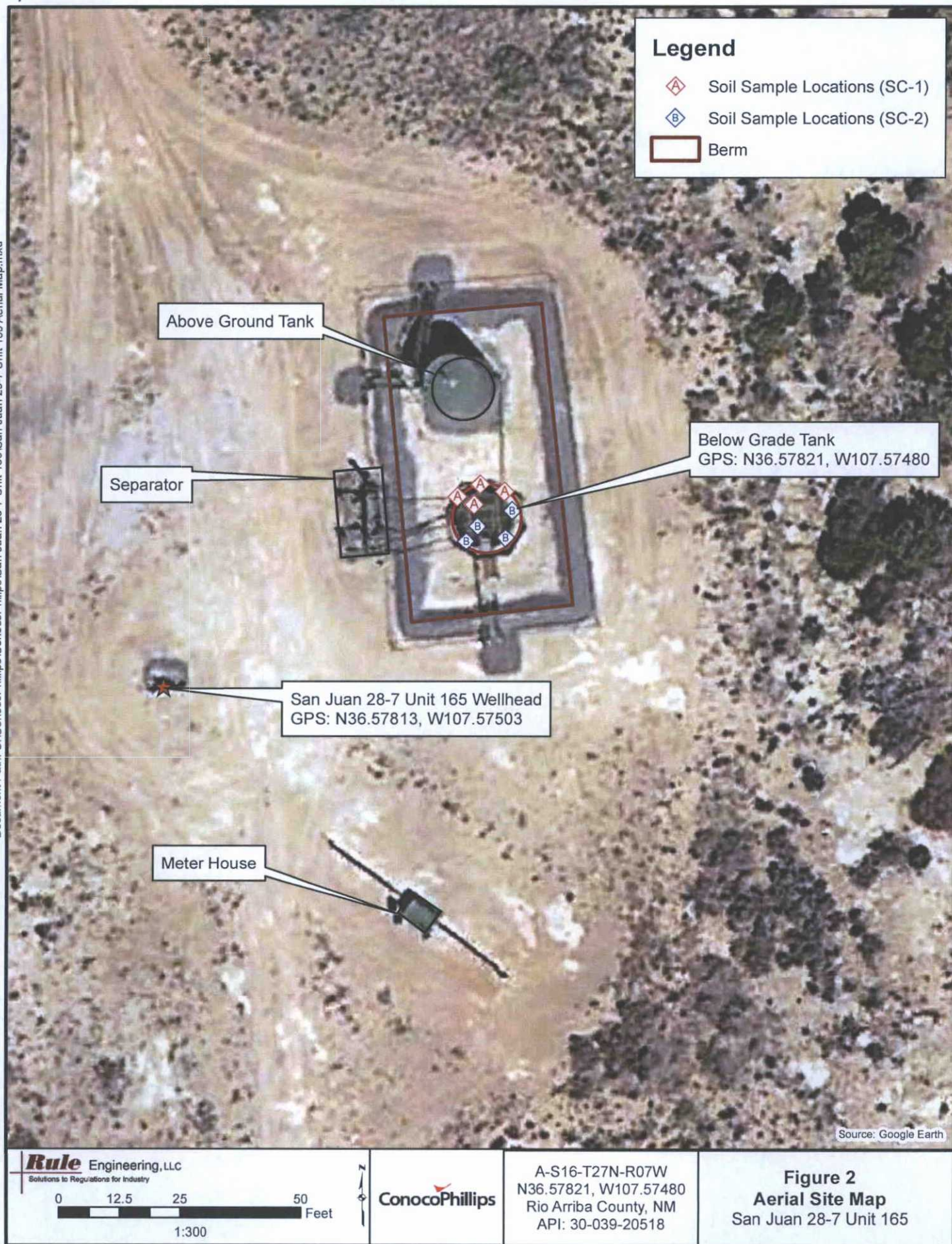
mg/kg - milligram per kilogram

## Figures











## Appendix A

### Executed C-138 Soil Waste Acceptance Form

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

96052-2527

Form C-138  
Revised August 1, 2011

\*Surface Waste Management Facility Operator  
and Generator shall maintain and make this  
documentation available for Division inspection

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address:	March 2016
ConocoPhillips 3401 E 30th. St. Farmington, New Mexico 87402	
2. Originating Site:	
SAN JUAN 28-7 UNIT 165 (ConocoPhillips) API# 3003920518	
Billing Information: 3003920518 / T110 / 702015 / HZF1 / MCINNSK - McKnight, Mark P	
3. Location of Material (Street Address, City, State or ULSTR):	
Unit A, Section 16, T027N, R007W RIO ARRIBA, NM	
4. Source and Description of Waste:	
Impacted Soil From condensed fluids spill (produced water/condensate)	
Estimated Volume 12 yd3	Known Volume (to be entered by the operator at the end of the haul) 115 yd3 (bbls)

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, Mal McKnight representative or authorized agent for ConocoPhillips Company do hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)

☒ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. Operator Use Only: Waste Acceptance Frequency ☒ Monthly ☐ Weekly ☐ Per Load

☐ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS |

I, Mal McKnight representative for ConocoPhillips Company do hereby certify that representative samples of the oil field oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.

6. Transporter: Nelson Revegetation

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: Envirotech Inc. Soil Remediation Facility Permit # NM-01-0011

Address of Facility: #43 Road 7175, south of Bloomfield NM

Method of Treatment and/or Disposal:

☐ Evaporation ☐ Injection ☐ Treating Plant ☒ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status: ☒ APPROVED ☐ DENIED (Must Be Maintained As Permanent Record)

PRINT NAME: Eric Liese TITLE: Land Farm Administrator DATE: 3-22-16

SIGNATURE: [Signature] TELEPHONE NO.: 505-632-0615  
Surface Waste Management Facility Authorized Agent



Appendix B  
Analytical Laboratory Report



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

March 29, 2016

Heather Woods  
Rule Engineering LLC  
501 Airport Dr., Ste 205  
Farmington, NM 87401  
TEL: (505) 325-1055  
FAX

RE: CoP San Juan 28-7 #165

OrderNo.: 1603B95

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 2 sample(s) on 3/24/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1603B95

Date Reported: 3/29/2016

CLIENT: Rule Engineering LLC

Client Sample ID: SC-1

Project: CoP San Juan 28-7 #165

Collection Date: 3/23/2016 12:00:00 PM

Lab ID: 1603B95-001

Matrix: SOIL

Received Date: 3/24/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	ND	30		mg/Kg	20	3/24/2016 5:17:33 PM	24423
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	23	10		mg/Kg	1	3/28/2016 7:32:17 PM	24429
Surr: DNOP	95.2	70-130		%Rec	1	3/28/2016 7:32:17 PM	24429
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/25/2016 1:56:55 AM	A33039
Surr: BFB	109	66.2-112		%Rec	1	3/25/2016 1:56:55 AM	A33039
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	3/25/2016 1:56:55 AM	B33039
Toluene	ND	0.048		mg/Kg	1	3/25/2016 1:56:55 AM	B33039
Ethylbenzene	ND	0.048		mg/Kg	1	3/25/2016 1:56:55 AM	B33039
Xylenes, Total	ND	0.096		mg/Kg	1	3/25/2016 1:56:55 AM	B33039
Surr: 4-Bromofluorobenzene	114	80-120		%Rec	1	3/25/2016 1:56:55 AM	B33039

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified



# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1603B95

Date Reported: 3/29/2016

CLIENT: Rule Engineering LLC

Client Sample ID: SC-2

Project: CoP San Juan 28-7 #165

Collection Date: 3/23/2016 12:10:00 PM

Lab ID: 1603B95-002

Matrix: SOIL

Received Date: 3/24/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	42	30		mg/Kg	20	3/24/2016 5:29:58 PM	24423
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	4000	93		mg/Kg	10	3/25/2016 5:01:33 PM	24429
Surr: DNOP	0	70-130	S	%Rec	10	3/25/2016 5:01:33 PM	24429
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	140	20		mg/Kg	5	3/24/2016 11:50:07 AM	A33039
Surr: BFB	289	66.2-112	S	%Rec	5	3/24/2016 11:50:07 AM	A33039
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.099		mg/Kg	5	3/24/2016 11:50:07 AM	B33039
Toluene	ND	0.20		mg/Kg	5	3/24/2016 11:50:07 AM	B33039
Ethylbenzene	0.21	0.20		mg/Kg	5	3/24/2016 11:50:07 AM	B33039
Xylenes, Total	2.8	0.40		mg/Kg	5	3/24/2016 11:50:07 AM	B33039
Surr: 4-Bromofluorobenzene	124	80-120	S	%Rec	5	3/24/2016 11:50:07 AM	B33039

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1603B95

29-Mar-16

Client: Rule Engineering LLC

Project: CoP San Juan 28-7 #165

Sample ID	MB-24423	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	24423	RunNo:	33065					
Prep Date:	3/24/2016	Analysis Date:	3/24/2016	SeqNo:	1014659	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-24423	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	24423	RunNo:	33065					
Prep Date:	3/24/2016	Analysis Date:	3/24/2016	SeqNo:	1014660	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.6	90	110			

## Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1603B95

29-Mar-16

Client: Rule Engineering LLC  
Project: CoP San Juan 28-7 #165

Sample ID	LCS-24429		SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range Organics			
Client ID:	LCSS		Batch ID:	24429		RunNo:	33066			
Prep Date:	3/24/2016		Analysis Date:	3/25/2016		SeqNo:	1015745		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	99.9	65.8	136			
Surr: DNOP	6.3		5.000		127	70	130			

Sample ID	MB-24429		SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range Organics			
Client ID:	PBS		Batch ID:	24429		RunNo:	33066			
Prep Date:	3/24/2016		Analysis Date:	3/25/2016		SeqNo:	1015746		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	13		10.00		126	70	130			

Sample ID	MB-24458		SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range Organics			
Client ID:	PBS		Batch ID:	24458		RunNo:	33107			
Prep Date:	3/28/2016		Analysis Date:	3/28/2016		SeqNo:	1016586		Units: %Rec	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	7.0		10.00		70.3	70	130			

Sample ID	LCS-24458		SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range Organics			
Client ID:	LCSS		Batch ID:	24458		RunNo:	33107			
Prep Date:	3/28/2016		Analysis Date:	3/28/2016		SeqNo:	1016589		Units: %Rec	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.6		5.000		72.6	70	130			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1603B95

29-Mar-16

Client: Rule Engineering LLC  
Project: CoP San Juan 28-7 #165

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	A33039	RunNo:	33039					
Prep Date:		Analysis Date:	3/24/2016	SeqNo:	1014095	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		107	66.2	112			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	A33039	RunNo:	33039					
Prep Date:		Analysis Date:	3/24/2016	SeqNo:	1014096	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	98.2	80	120			
Surr: BFB	1100		1000		115	66.2	112			S

Sample ID	MB-24391	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	24391	RunNo:	33039					
Prep Date:	3/23/2016	Analysis Date:	3/24/2016	SeqNo:	1014105	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		103	66.2	112			

Sample ID	LCS-24391	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	24391	RunNo:	33039					
Prep Date:	3/23/2016	Analysis Date:	3/24/2016	SeqNo:	1014106	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		111	66.2	112			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
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H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1603B95

29-Mar-16

Client: Rule Engineering LLC  
Project: CoP San Juan 28-7 #165

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	B33039	RunNo:	33039					
Prep Date:		Analysis Date:	3/24/2016	SeqNo:	1014128	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		108	80	120			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	B33039	RunNo:	33039					
Prep Date:		Analysis Date:	3/24/2016	SeqNo:	1014129	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	95.6	75.3	123			
Toluene	0.98	0.050	1.000	0	97.9	80	124			
Ethylbenzene	1.0	0.050	1.000	0	100	82.8	121			
Xylenes, Total	3.0	0.10	3.000	0	99.7	83.9	122			
Surr: 4-Bromofluorobenzene	1.2		1.000		119	80	120			

Sample ID	MB-24391	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	24391	RunNo:	33039					
Prep Date:	3/23/2016	Analysis Date:	3/24/2016	SeqNo:	1014146	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120			

Sample ID	LCS-24391	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	24391	RunNo:	33039					
Prep Date:	3/23/2016	Analysis Date:	3/24/2016	SeqNo:	1014147	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		113	80	120			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

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W Sample container temperature is out of limit as specified





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: RULE ENGINEERING LL

Work Order Number: 1603B95

RcptNo: 1

Received by/date: LM 03/24/16

Logged By: Anne Thorne 3/24/2016 7:30:00 AM

Completed By: Anne Thorne 3/24/2016

Reviewed By: [Signature]

[Signature]  
[Signature]

### Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒  
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐  
3. How was the sample delivered? Courier

### Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐  
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐  
6. Sample(s) in proper container(s)? Yes ☒ No ☐  
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐  
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐  
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐  
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒  
11. Were any sample containers received broken? Yes ☐ No ☒  
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐  
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐  
14. Is it clear what analyses were requested? Yes ☒ No ☐  
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH: \_\_\_\_\_  
( $<2$  or  $>12$  unless noted)  
Adjusted? \_\_\_\_\_  
Checked by: \_\_\_\_\_

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good	Yes			

Turn-Around Time:	Results 3/29 Afternoon
<input type="checkbox"/> Standard	<input checked="" type="checkbox"/> Rush 3 Day TAT
Project Name:	

Project Name: COP San Juan 28-7 #1105

Project #:

Project Manager:

100

Heather Woods


Sampler: 4 Woods / 1 Valdez

On Ice: ☒ Yes ☐ No

Sample Temperature: 22-10cf

Date	Time	Matrix	Sample Request ID	AT 03/24/16 Container Type and # Meat Kits	Preservative Type	HEAL No. 1103B95
13/14	1200	Soil	SC-1	(1) 4 oz Glass	Cold	201
13/16	1210	Soil	SC-2	(1) 4 oz Glass	Cold	202
<del>NFS #110</del>						

[illegible]

ite:	Time:	Relinquished by:	Received by:	Date	Time
3/16	1653	Heather M. Woods	Christine Ward	3/23/16	1653
ite:	Time:	Relinquished by:	Received by:	Date	Time
23/16	1843	Christine Wheeler		03/24/16	0730

Remarks:  
Direct Bill to ConocoPhillips      User ID: MCINNSK  
WO: 21372067      ordered by: Lisa Hunter  
Area: 7  
Area Supervisor: Ervin Wyckoff