

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

APR 11 2016

Form C-141  
Revised August 8, 2011

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

## Release Notification and Corrective Action

## OPERATOR

☐ Initial Report ☒ Final Report

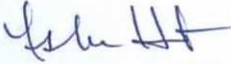

Name of Company <b>ConocoPhillips Company</b>	Contact <b>Lisa Hunter</b>
Address <b>3401 East 30<sup>th</sup> St, Farmington, NM</b>	Telephone No. <b>(505) 258-1607</b>
Facility Name: <b>Newsom 17</b>	Facility Type: <b>Gas Well</b>
Surface Owner <b>Federal</b>	Mineral Owner <b>Federal (SF-078433)</b>
API No. <b>3004511857</b>	

## LOCATION OF RELEASE

Unit Letter <b>H</b>	Section <b>20</b>	Township <b>26N</b>	Range <b>08W</b>	Feet from the <b>1485</b>	North/South Line <b>North</b>	Feet from the <b>1165</b>	East/West Line <b>East</b>	County <b>San Juan</b>
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Latitude **36.476181** Longitude **-107.69982**

## NATURE OF RELEASE

Type of Release <b>Produced Water</b>	Volume of Release <b>7.5 bbls</b>	Volume Recovered <b>5.5 bbls</b>
Source of Release <b>Pit Tank Overflow</b>	Date and Hour of Occurrence <b>Unknown</b>	Date and Hour of Discovery <b>2-25-16 @ 9:32 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.* <b>N/A</b>		
Describe Cause of Problem and Remedial Action Taken.* <b>Pit overflowed into cribbing. SPEC truck called to remove fluid and contaminated soil in cribbing.</b>		
Describe Area Affected and Cleanup Action Taken.* <b>ConocoPhillips will assess the soil to determine a path forward for clean-up if necessary. Contaminated soil and fluids were removed by SPEC truck and release assessment was completed by third-party environmental and Analytical results were below the NMOCD regulatory standards – no further action required. The soil sampling report is attached for review. No further remediation required.</b>		
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>05/02/2016</b>	Expiration Date:
E-mail Address: <b>Lisa.Hunter@cop.com</b>	Conditions of Approval:	Attached <input type="checkbox"/>
Date: <b>April 6, 2016</b>	Phone: <b>(505) 258-1607</b>	

\* Attach Additional Sheets If Necessary

NVF 1606928645

# **Newsom #17 Below Grade Tank Release Report**

Unit Letter H, Section 20, Township 26 North, Range 8 West  
San Juan County, New Mexico

April 5, 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 Newsom #17 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

April 5, 2016

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Appendix B	Analytical Laboratory Report



## 1.0 Introduction

The ConocoPhillips Newsom #17 release site is located in Unit Letter H, Section 20, Township 26 North, Range 8 West, in San Juan County, New Mexico. The release of an estimated 7.5 barrels (bbls) of produced water, due to of overtopping of the below grade tank (BGT), was discovered on February 25, 2016. Remedial activities included recovery of approximately 5.5 bbls of the released fluid and hydro-excavation of soils from within the BGT excavation cribbing. Rule Engineering, LLC (Rule) conducted confirmation soil sampling of impacted soils from within and adjacent to the BGT excavation cribbing.

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>	Newsom #17		
<b>Site Location Description</b>	Unit Letter H, Section 20, Township 26 North, Range 8 West		
<b>Wellhead GPS Location</b>	N36.47616 and W107.70019	<b>BGT Release GPS Location</b>	N36.47640 and W107.69995
<b>Land Jurisdiction</b>	Bureau of Land Management (BLM)		
<b>Discovery Date</b>	February 25, 2016		
<b>Release Source</b>	Below Grade Tank	<b>Substance(s) Released</b>	Produced Water
<b>Volume Released</b>	7.5 bbls	<b>Volume Recovered</b>	5.5 bbls
<b>NMOCD Site Rank</b>	20		
<b>Distance to Nearest Surface Water</b>	Unnamed ephemeral washes approximately 280 feet to the northwest and 440 feet to the south which drain to Blanco Wash		
<b>Estimated Depth to Groundwater</b>	Estimated to be 97 feet below grade surface (bgs)	<b>Distance to Nearest Water Well or Spring</b>	Greater than 1,000 feet
<b>Contractor</b>	Nelson Revegetation, LLC		

## 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 20 (Table 1).

Depth to groundwater at the site is estimated to be 97 feet bgs based on the site specific hydrogeological report submitted in the C-144 below grade tank registration.

A review was completed of the New Mexico Office of the State Engineer online New Mexico Water Rights Reporting System 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.

Two ephemeral washes traverse the area approximately 280 feet northwest and 440 feet south of the release location, both of which drain to Blanco Wash.

Based on the ranking score of 20, 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 100 mg/kg total petroleum hydrocarbons (TPH) as gasoline range organics (GRO) and diesel range organics (DRO).

#### **4.0 Field Activities**

On February 29, 2016, Rule personnel advanced one soil boring (SB-1) to establish vertical extent of petroleum hydrocarbon impact and to select the depth for confirmation samples. The soil boring (SB-1) was advanced using a hand auger near the southwest corner of the BGT location, which showed evidence of ponding (downgradient direction), to a depth of approximately nine feet bgs.

Upon completion of the removal of impacted fluids and soils from inside the BGT excavation, resulting in the exposure of the liner and cribbing walls, Rule personnel collected confirmation samples from the exposed soils between the cribbing and liner in the base of the BGT excavation and from hand auger advanced boreholes advanced approximately one to two feet outside the cribbing walls. The liner was visually inspected and found to be in generally good condition with no apparent holes or rips present.

Approximately 110 barrels of hydrocarbon impacted soils and fresh water were removed by hydro-excavation and transported to Envirotech Landfarm near Bloomfield, New Mexico for disposal/remediation. A depiction of the BGT excavation with sample locations is included as Figure 2.

#### **5.0 Soil Sampling**

Rule collected soil samples at selected intervals from soil boring SB-1 from approximately one to nine feet bgs. A portion of each sample was field screened for volatile organic compounds (VOCs). 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. Field analysis for TPH was conducted for selected samples per USEPA Method 418.1, utilizing a total hydrocarbon analyzer. Prior to field analysis, the machine was calibrated following the manufacturer's procedure which includes calculation of a calibration curve using known concentration standards.



Rule collected two composite confirmation soil samples (SC-1 and SC-2). Confirmation sample SC-1 was collected from the base of the BGT excavation where soil was exposed between the cribbing and the in-place liner. Confirmation sample SC-2 was collected from about one foot bgs (the depth of greatest apparent hydrocarbon impact in soil boring SB-1) approximately one to two feet outside the edge of the cribbing. Each confirmation soil sample is a representative composite comprised of four to five equivalent portions of soil collected from the sampled area.

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. Field screening results are summarized in Table 2. Laboratory analytical results are summarized in Table 3, and the analytical laboratory reports are included in Appendix B.

## **6.0 Field Screening Results**

Field screening VOC concentrations for the samples collected from soil boring SB-1 ranged from 106 ppm at 5 feet bgs to 700 ppm at 1 foot bgs. Field screening results for soil confirmation samples SC-1 and SC-2 indicated VOC concentrations of 1.5 ppm and 0.8 ppm, respectively. Field TPH results for soil boring SB-1 indicated TPH concentrations of 35.3 mg/kg at 4 feet bgs and 25.0 mg/kg at 9 feet bgs. The field TPH concentration result for SC-1 was 90.2 mg/kg. Field screening results are summarized in Table 2.

## **7.0 Laboratory Analytical Results**

Laboratory analytical results for excavation confirmation sample SC-1 reported benzene, total BTEX, TPH (GRO/DRO), and chloride concentrations below the laboratory reporting limits, which are below the applicable NMOCD action levels. Laboratory analytical results for confirmation sample SC-2 reported a benzene concentration of 0.18 mg/kg and total BTEX concentration of 2.8 mg/kg, which are below the applicable NMOCD action levels. TPH (GRO/DRO) concentrations for confirmation sample SC-2 was reported as 40 mg/kg GRO and 52 mg/kg DRO, which are below the NMOCD action level of 100 mg/kg for a site rank of 20. Chloride concentration reported for confirmation sample SC-2 was reported as 32 mg/kg. Laboratory analytical results are summarized in Table 3.

## **8.0 Conclusions**

The ConocoPhillips Newsom #17 release site is located in Unit Letter H, Section 20, Township 26 North, Range 8 West, in San Juan County, New Mexico. The release of an estimated 7.5 barrels (bbls) of produced water, due to of overtopping of the below grade tank (BGT), was discovered on February 25, 2016. Remedial activities included recovery

of approximately 5.5 bbls of the released fluid and hydro-excavation of soils from within the BGT excavation cribbing. Rule conducted confirmation soil sampling of impacted soils from within and adjacent to the BGT excavation cribbing. Confirmation sample SC-1 was collected from the base of the BGT excavation where soil was exposed between the cribbing and the in-place liner. Confirmation sample SC-2 was collected from about one foot bgs (the depth of greatest apparent hydrocarbon impact in soil boring SB-1) approximately one to two feet outside the edge of the cribbing. Laboratory analytical results for the soil confirmation samples (SC-1 and SC-2) reported benzene, total BTEX, and total TPH (GRO/DRO) concentrations below the applicable NMOCD action levels. Approximately 110 bbls of hydrocarbon impacted soils and fresh water removed by hydro-excavation were transported to Envirotech Landfarm near Bloomfield, New Mexico for disposal/remediation.

Based on laboratory analytical results of the confirmation soil samples, no further work is recommended at this time, however additional consideration of the presence of soil contaminated in excess of the NMOCD action levels is recommended during below grade tank closure activities when removal of the cribbing and liner will provide more through access to the soils in direct contact with those components.

## **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**  
**Newsom #17**  
**San Juan County, New Mexico**  
**ConocoPhillips**

Ranking Criteria	Ranking Score	Site-Based Ranking Score	Basis for Determination	Data Sources
Depth to Groundwater				
<50 feet	20	10	Depth to groundwater is estimated to be 97 feet on the site specific hydrogeological report included in the C-144 below grade tank registration for the Newsom #17.	NMOCD Online database, Santos Peak 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 feet radius of location.	NMOSE NMWRRS, Santos Peak Quadrangle, Google Earth, and Visual Inspection
	0 (No)			
Distance to Surface Water Body				
<200 horizontal feet	20	10	Two ephemeral washes traverse the area approximately 280 feet northwest and 440 feet south of the release location, both of which drain to Blanco Wash.	Santos Peak Quadrangle, Google Earth, and Visual Inspection
200 to 1,000 horizontal feet	10			
>1,000 horizontal feet	0			
Site Based Total Ranking Score		20		



**Table 2. Field Soil Sampling Results - VOCs and TPH**  
**Newsom #17**  
**San Juan County, New Mexico**  
**ConocoPhillips**

Sample ID	Date	Sample Depth (ft bgs)	VOCs* (PID) (ppm)	TPH* (418.1) (mg/kg)
NMOCD Action Levels**			100	100
SB-1	2/29/16	1	700	---
		2	578	---
		3	572	---
		4	560	35.3
		5	106	---
		6.5	147	---
		7	237	---
		9	220	25.0
SC-1	2/29/16	2	1.5	90.2
SC-2	2/29/16	4	0.8	---

Notes: VOCs - volatile organic compounds

PID - photo-ionization detector

ft bgs - feet below ground surface

ppm - parts per million

mg/kg - milligrams/kilograms

BTEX - benzene, toluene, ethylbenzene, and xylenes

TPH-total petroleum hydrocarbons per USEPA Method 418.1

\* field results

\*\*NMOCD Guidelines for Remediation of Leaks, Spills, and Releases (1993)

**Table 3. Laboratory Analytical Results - Benzene, BTEX, TPH (GRO/DRO), and Chloride  
Newsom #17  
San Juan County, New Mexico  
ConocoPhillips**

Sample ID	Date	Sample Time	Sample Type	Sample Depth (ft)	Laboratory Analytical Results							
					Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	Chloride (mg/kg)
NMOCD Action Levels*					10	---	---	---	50	100		---
SC-1	2/29/16	12:20	Composite	4	<0.049	<0.049	<0.049	<0.099	<0.246	<4.9	<9.7	<30
SC-2	2/29/16	13:00	Composite	1	0.18	0.29	0.25	2.1	2.8	40	52	32

Notes: mg/kg - milligrams/kilograms  
 TPH - total petroleum hydrocarbons  
 BTEX - benzene, toluene, ethylbenzene, and total xylenes  
 GRO - gasoline range organics  
 DRO - diesel range organics  
 \*NMOCD Guidelines for Remediation of Leaks, Spills, and Releases (1993)



## 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

96052-2524  
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: |  
ConocoPhillips  
3401 E 30th. St.  
Farmington, New Mexico 87402  
Feb 2016

2. Originating Site: |  
NEWSOM 17 (ConocoPhillips) API# 3004511857

Billing Information: 21337803 / T110 / 702015 / HZF1 / MCINNSK - House, Curtis Lee

3. Location of Material (Street Address, City, State or ULSTR): |  
Unit H, Section 20, T026N, R008W  
SAN JUAN, 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) 110 yd3 (bbls)

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, Curtis Lee House 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, Curtis Lee House 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: 2-26-16

SIGNATURE: E. Liese  
Surface Waste Management Facility Authorized Agent

TELEPHONE NO.: 505-632-0615

## 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 08, 2016

Heather Woods

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

RE: CoP Newsom #17

OrderNo.: 1603074

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 2 sample(s) on 3/2/2016 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,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109



# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1603074

Date Reported: 3/8/2016

CLIENT: Rule Engineering LLC

Client Sample ID: SC-1

Project: CoP Newsom #17

Collection Date: 2/29/2016 12:20:00 PM

Lab ID: 1603074-001

Matrix: SOIL

Received Date: 3/2/2016 7:00:00 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	3/7/2016 12:25:45 PM	24109
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	3/4/2016 2:46:55 PM	24040
Surr: DNOP	80.1	70-130		%Rec	1	3/4/2016 2:46:55 PM	24040
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/3/2016 10:58:58 PM	24049
Surr: BFB	111	66.2-112		%Rec	1	3/3/2016 10:58:58 PM	24049
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.049		mg/Kg	1	3/3/2016 10:58:58 PM	24049
Toluene	ND	0.049		mg/Kg	1	3/3/2016 10:58:58 PM	24049
Ethylbenzene	ND	0.049		mg/Kg	1	3/3/2016 10:58:58 PM	24049
Xylenes, Total	ND	0.099		mg/Kg	1	3/3/2016 10:58:58 PM	24049
Surr: 4-Bromofluorobenzene	116	80-120		%Rec	1	3/3/2016 10:58:58 PM	24049

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 1603074

Date Reported: 3/8/2016

CLIENT: Rule Engineering LLC

Client Sample ID: SC-2

Project: CoP Newsom #17

Collection Date: 2/29/2016 1:00:00 PM

Lab ID: 1603074-002

Matrix: SOIL

Received Date: 3/2/2016 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	32	30		mg/Kg	20	3/7/2016 1:27:48 PM	24109
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	40	9.6		mg/Kg	1	3/4/2016 3:08:58 PM	24040
Surr: DNOP	87.6	70-130		%Rec	1	3/4/2016 3:08:58 PM	24040
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	52	4.8		mg/Kg	1	3/3/2016 11:22:14 PM	24049
Surr: BFB	138	66.2-112	S	%Rec	1	3/3/2016 11:22:14 PM	24049
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	0.18	0.048		mg/Kg	1	3/3/2016 11:22:14 PM	24049
Toluene	0.29	0.048		mg/Kg	1	3/3/2016 11:22:14 PM	24049
Ethylbenzene	0.25	0.048		mg/Kg	1	3/3/2016 11:22:14 PM	24049
Xylenes, Total	2.1	0.097		mg/Kg	1	3/3/2016 11:22:14 PM	24049
Surr: 4-Bromofluorobenzene	121	80-120	S	%Rec	1	3/3/2016 11:22:14 PM	24049

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



# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1603074

08-Mar-16

Client: Rule Engineering LLC

Project: CoP Newsom #17

Sample ID	MB-24109	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	24109	RunNo:	32638					
Prep Date:	3/7/2016	Analysis Date:	3/7/2016	SeqNo:	998627	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-24109	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	24109	RunNo:	32638					
Prep Date:	3/7/2016	Analysis Date:	3/7/2016	SeqNo:	998628	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.9	90	110			

## 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#: 1603074

08-Mar-16

Client: Rule Engineering LLC

Project: CoP Newsom #17

Sample ID	MB-24040	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	24040	RunNo:	32568					
Prep Date:	3/2/2016	Analysis Date:	3/4/2016	SeqNo:	996469	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	8.7		10.00		86.7	70	130			

Sample ID	LCS-24040	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	24040	RunNo:	32568					
Prep Date:	3/2/2016	Analysis Date:	3/4/2016	SeqNo:	996471	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	92.4	65.8	136			
Surr: DNOP	4.0		5.000		80.8	70	130			

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- S % Recovery outside of range due to dilution or matrix

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- 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#: 1603074

08-Mar-16

Client: Rule Engineering LLC

Project: CoP Newsom #17

Sample ID	MB-24035		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 24035		RunNo: 32556					
Prep Date:	3/2/2016		Analysis Date: 3/3/2016		SeqNo: 995976		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		104	66.2	112			

Sample ID	LCS-24035		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 24035		RunNo: 32556					
Prep Date:	3/2/2016		Analysis Date: 3/3/2016		SeqNo: 995977		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		113	66.2	112			S

Sample ID	MB-24049		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 24049		RunNo: 32556					
Prep Date:	3/2/2016		Analysis Date: 3/3/2016		SeqNo: 995999		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		106	66.2	112			

Sample ID	LCS-24049		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 24049		RunNo: 32556					
Prep Date:	3/2/2016		Analysis Date: 3/3/2016		SeqNo: 996000		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	80	120			
Surr: BFB	1200		1000		117	66.2	112			S

## 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#: 1603074

08-Mar-16

Client: Rule Engineering LLC

Project: CoP Newsom #17

Sample ID	MB-24035		SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	PBS		Batch ID:	24035		RunNo:	32556			
Prep Date:	3/2/2016		Analysis Date:	3/3/2016		SeqNo:	996019		Units: %Rec	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		108	80	120			

Sample ID	LCS-24035		SampType:	LCS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	LCSS		Batch ID:	24035		RunNo:	32556			
Prep Date:	3/2/2016		Analysis Date:	3/3/2016		SeqNo:	996020		Units: %Rec	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.2		1.000		116	80	120			

Sample ID	MB-24049		SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	PBS		Batch ID:	24049		RunNo:	32556			
Prep Date:	3/2/2016		Analysis Date:	3/3/2016		SeqNo:	996036		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		112	80	120			

Sample ID	LCS-24049		SampType:	LCS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	LCSS		Batch ID:	24049		RunNo:	32556			
Prep Date:	3/2/2016		Analysis Date:	3/3/2016		SeqNo:	996037		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.83	0.050	1.000	0	82.6	80	120			
Toluene	0.93	0.050	1.000	0	93.0	80	120			
Ethylbenzene	1.0	0.050	1.000	0	101	80	120			
Xylenes, Total	3.0	0.10	3.000	0	101	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		116	80	120			

Sample ID	1603074-001AMS		SampType:	MS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	SC-1		Batch ID:	24049		RunNo:	32556			
Prep Date:	3/2/2016		Analysis Date:	3/3/2016		SeqNo:	996039		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.047	0.9390	0.04864	93.8	71.5	122			
Toluene	0.92	0.047	0.9390	0	97.5	71.2	123			
Ethylbenzene	0.97	0.047	0.9390	0.01492	102	75.2	130			
Xylenes, Total	2.9	0.094	2.817	0.06798	101	72.4	131			

### 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#: 1603074

08-Mar-16

Client: Rule Engineering LLC

Project: CoP Newsom #17

Sample ID	1603074-001AMS	SampType:	MS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	SC-1	Batch ID:	24049	RunNo:	32556					
Prep Date:	3/2/2016	Analysis Date:	3/3/2016	SeqNo:	996039	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		0.9390		116	80	120			

Sample ID	1603074-001AMSD	SampType:	MSD	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	SC-1	Batch ID:	24049	RunNo:	32556					
Prep Date:	3/2/2016	Analysis Date:	3/3/2016	SeqNo:	996040	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.047	0.9434	0.04864	106	71.5	122	12.0	20	
Toluene	0.99	0.047	0.9434	0	105	71.2	123	7.70	20	
Ethylbenzene	1.0	0.047	0.9434	0.01492	107	75.2	130	4.85	20	
Xylenes, Total	3.1	0.094	2.830	0.06798	106	72.4	131	4.42	20	
Surr: 4-Bromofluorobenzene	1.1		0.9434		116	80	120	0	0	

## Qualifiers:

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- D Sample Diluted Due to 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: 1603074

RcptNo: 1

Received by/date: AT 03/02/16

Logged By: Lindsay Mangin 3/2/2016 7:00:00 AM

Completed By: Lindsay Mangin 3/2/2016 7:50:38 AM

Reviewed By: JA 03/02/16

### 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: ☐ eMail ☐ Phone ☐ Fax ☐ 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	1.4	Good	Yes			



## ent: Rule Engineering, LLC

☒ Standard ☐ Rush

CoP Newsom #17

Project Manager:

Heather Woods

Sampler: Heather Woods

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.4

Container	Preservative	HEAL No.
-----------	--------------	----------

Type and #	Type	160307
1) 4oz Glass	Gold	-201

(1) 4 oz Glass	Cold	-002
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[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

## Analysis Request

BTEX + <del>toluene</del> + <del>xylenes</del> (8021)
BTEX + MTBE + TPH (Gas only)
TPH 8015B (GRO / DRO / <del>MO</del> )
TPH (Method 418.1)
EDB (Method 504.1)
PAH's (8310 or 8270 SIMS)
RCRA 8 Metals
300.0 <del>Chlorides</del>
Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )
8081 Pesticides / 8082 PCB's
8260B (VOA)
8270 (Semi-VOA)
Air Bubbles (Y or N)

Date	Time	Matrix	Sample Request ID
------	------	--------	-------------------

Container Type and #	Preservative Type
-------------------------	----------------------

9/16/22	Soil	SC-1	(1) 4oz Glass	Cold
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1/16	1300	Soil	SC-2	(1) 4 oz Glass	Cold
------	------	------	------	----------------	------

ite:	Time:	Relinquished by:
116	1707	Heather M. Woods

Received by:	Date	Time
<i>Christa Walz</i>	3/1/16	1707

ite:	Time:	Relinquished by:
1/16	1757	Christine Libotens

Received by: *[Signature]* Date: 03/02/16 Time: 0700

Remarks:  
Direct Bill to ConocoPhillips

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly noted on the analytical report.