

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

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	Burlington Resources Oil & Gas Co.	Contact	Bobby Spearman
Address	3401 East 30 <sup>th</sup> St, Farmington, NM	Telephone No.	(505)-320-3045
Facility Name	Decker 3	Facility Type	Gas well

Surface Owner:	Fee	Mineral Owner:	Fee	API No.	3004560068
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**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	23	32	12	1090	South	890	West	San Juan

Latitude 36.967226 Longitude -108.070137

**NATURE OF RELEASE**

Type of Release	Condensate	Volume of Release	22.3 bbl	Volume Recovered	0 bbl
Source of Release	Production tank	Date and Hour of Occurrence	1-27-16 11:15A	Date and Hour of Discovery	same
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required				
By Whom?	If YES, To Whom?				
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
If YES, Volume Impacting the Watercourse.					

If a Watercourse was Impacted, Describe Fully.\*

**OIL CONS. DIV DIST. 3**

**AUG 31 2016**

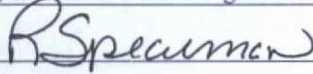

Describe Cause of Problem and Remedial Action Taken.\*  
Hole in tank due to corrosion.

Describe Area Affected and Cleanup Action Taken.\*

8-3-16 Crew completed the following:

Excavation was 17' x 17' x 15' deep. App. 175c/yds of soil was transported to an approved landfarm and clean soil was placed in the excavation site. Analytical results were below NMOCD 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:				<b>OIL CONSERVATION DIVISION</b>	
Printed Name:	Bobby Spearman			Approved by Environmental Specialist: 	
Title:	Field Environmental Specialist			Approval Date:	9/21/2016
E-mail Address:	Robert.E.Spearman@conocophillips.com			Expiration Date:	
Date:	8-29-2016			Conditions of Approval:	NVF1603939780
Phone:	(505) 320-3045			Attached	<input type="checkbox"/>

\* Attach Additional Sheets If Necessary

## **Decker #3 Release Report**

Unit Letter M, Section 23, Township 32 North, Range 12 West  
San Juan County, New Mexico

August 23, 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 Decker #3 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**

August 23, 2016



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## 1.0 Introduction

The ConocoPhillips Decker #3 release site is located in Unit Letter M, Section 23, Township 32 North, Range 12 West, in San Juan County, New Mexico. The release of an estimated 22.3 barrels (bbls) of condensate from the above ground storage tank was discovered on January 27, 2016.

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>	Decker #3		
<b>Site Location Description</b>	Unit Letter M, Section 23, Township 32 North, Range 12 West		
<b>Wellhead GPS Location</b>	N36.96627 and W108.06735	<b>Release GPS Location</b>	N36.96607 and W108.06705
<b>Land Jurisdiction</b>	Private	<b>Discovery Date</b>	January 27, 2016
<b>Release Source</b>	Above Grade Tank	<b>Substance(s) Released</b>	Condensate
<b>Volume Released</b>	Estimated 22.3 bbls	<b>Volume Recovered</b>	0 bbls
<b>NMOCD Site Rank</b>	40		
<b>Distance to Nearest Surface Water</b>	Unnamed, ephemeral wash located approximately 160 feet to the south which ultimately drains to Jaquez Arroyo		
<b>Estimated Depth to Groundwater</b>	Estimated to be less than 50 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 40 (Table 1).

Depth to groundwater at the site is estimated to be less than 50 feet bgs based on the reported depth to water of 63 feet bgs for a test well drilled at the Moore Gas Com E #1S located approximately 2,200 feet to the east at an elevation approximately 108 feet higher than the release location.

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

An unnamed, ephemeral wash traverses the area approximately 160 feet south of the release location which ultimately drains to Jaquez Arroyo.

Based on the ranking score of 40, 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 Initial Site Assessment**

### **4.1 Field Activities**

On May 10, 2016, Rule Engineering, LLC (Rule) personnel conducted an initial site assessment to delineate the extents of the release which included advancing five soil borings (SB-1 through SB-5) utilizing a hand auger. Soil borings were advanced to approximately 13 feet bgs which is the maximum extent of the equipment. A sample location map showing the boring locations is included as Figure 3.

### **4.2 Soil Sampling**

Rule collected soil samples from the soil borings at 2 to 3 foot intervals. The lithology encountered at the site included interbedded clayey sand and poorly graded sand to the maximum depths of the soil borings.

A portion of each sample was field screened for volatile organic compounds (VOCs) and selected samples were analyzed for 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. Field analysis for TPH was conducted for selected samples per United States Environmental Protection Agency (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.

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 USEPA Method 8021B and TPH (GRO/DRO) per USEPA 8015D.

Initial site assessment field screening and laboratory analytical results are summarized in Table 2. The analytical laboratory report is included in Appendix A.



### **4.3 Field Screening and Results**

Field screening results for samples collected from soil borings SB-1 and SB-5 indicated VOC concentrations ranging from 6.5 ppm to 3,600 ppm. Field TPH results for samples collected from soil borings SB-1 through SB-5 indicated TPH concentrations ranging from below the reporting limit of 20 mg/kg to 1,090 mg/kg. Field screening results are summarized in Table 2.

### **4.4 Laboratory Analytical Results**

Laboratory analytical results for the initial site assessment sample, SB-1 at 13, reported the benzene concentration below the laboratory reporting limit of 0.12 mg/kg, which is below the NMOCD action level of 10 mg/kg. Total BTEX concentration for sample SB-1 at 13 feet was reported at 3.2 mg/kg, which is below the NMOCD action level of 50 mg/kg. Concentrations of TPH (GRO/DRO) for samples SB-1 at 13 feet was reported as 200 mg/kg GRO and 80 mg/kg DRO, which are above the NMOCD action level of 100 mg/kg for a site rank of 40.

Initial site assessment field screening and laboratory analytical results are summarized in Table 2. The analytical laboratory report is included in Appendix A.

## **5.0 Excavation Confirmation Sampling**

### **5.1 Field Activities**

On August 3, 2016, Rule personnel returned to the location to provide excavation guidance and collect confirmation samples from the resultant excavation. The maximum extent of the excavation measured approximately 17 feet by 17 feet by 15 feet deep. Approximately 175 cubic yards of impacted soils were transported to a local NMOCD approved landfarm for disposal/remediation and the excavation was backfilled with clean, imported material. A depiction of the final excavation with sample locations is included on Figure 3.

### **5.2 Soil Sampling**

Rule collected five composite confirmation soil samples (SC-1 through SC-5) from the final excavation for field screening and laboratory analysis. Each confirmation soil sample is a representative composite comprised of five equivalent portions of soil collected from the sampled area.

A portion of each sample was field screened for VOCs and selected samples were also field analyzed for TPH. Field screening for VOC vapors was conducted with a PID. Prior to field screening, the PID was calibrated with 100 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.

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 USEPA Method 8021B, TPH (GRO/DRO) per USEPA Method 8015M/D, and chlorides per Method 300.0.

Field screening and laboratory analytical results are summarized in Table 3. The analytical laboratory report is included in Appendix A.

### **5.3 Field Screening Results**

Field screening results for soil confirmation samples SC-1 through SC-5 indicated VOC concentrations ranging from 0.2 ppm to 1,021 ppm. The field TPH concentration results for samples SC-1 through SC-3 ranged from below the reporting limit of 20 mg/kg to 68.7 mg/kg. Field screening results are summarized in Table 3.

### **5.4 Laboratory Analytical Results**

Laboratory analytical results for excavation confirmation samples SC-1 through SC-5 reported benzene concentrations below the laboratory reporting limits, which are below the NMOCD action level of 10 mg/kg. Total BTEX concentrations for samples SC-1 through SC-5 ranged from below the laboratory reporting limits to 0.37 mg/kg, which are below the NMOCD action level of 50 mg/kg. Concentration of TPH (GRO/DRO) for samples SC-1 through SC-5 ranged from below the laboratory reporting limits to 93 mg/kg, which are below the NMOCD action level of 100 mg/kg for a site rank of 40.

Laboratory analytical results are summarized in Table 3. The analytical laboratory report is included in Appendix A.

## **6.0 Conclusions**

The ConocoPhillips Decker #3 release site is located in Unit Letter M, Section 23, Township 32 North, Range 12 West, in San Juan County, New Mexico. The release of an estimated 22.3 bbls of condensate from the above ground storage tank was discovered on January 27, 2016. Following the excavation of hydrocarbon impacted soils, confirmation samples SC-1 through SC-5 were collected from the resultant excavation which measured approximately 17 feet by 17 feet by 15 feet deep. Laboratory analytical results for confirmation samples SC-1 through SC-5 reported benzene, total BTEX, and total TPH (GRO/DRO) concentrations below the applicable NMOCD action levels for a site rank of 40. Approximately 175 cubic yards of impacted soils were transported to a local NMOCD approved landfarm for disposal/remediation and the excavation was backfilled with clean, imported material.



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

## **7.0 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**  
**Decker #3**  
**San Juan County, New Mexico**

Ranking Criteria	Ranking Score	Site-Based Ranking Score	Basis for Determination	Data Sources
Depth to Groundwater				
<50 feet	20	20	Elevation differential information derived from the topographic map of the area and depth to water of 63 feet bgs reported from a test well installed at the Moore Gas Com E #1S located approximately 2,200 feet to the east. The release location elevation is approximately 108 feet higher in elevation, indicating groundwater may be present at less than 50 feet bgs.	NMOCD Online database, Adobe Downs Ranch 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, Adobe Downs Ranch Quadrangle, Google Earth, and Visual Inspection
	0 (No)			
Distance to Surface Water Body				
<200 horizontal feet	20	20	An unnamed, ephemeral wash located approximately 160 feet south of release location which ultimately drains to Jaquez Arroyo.	Adobe Downs Ranch Quadrangle, Google Earth, and Visual Inspection
200 to 1,000 horizontal feet	10			
>1,000 horizontal feet	0			
Site Based Total Ranking Score		40		

**Table 2. Initial Site Assessment Field Screening and Laboratory Analytical Results**  
**ConocoPhillips**  
**Decker #3**  
**San Juan County, New Mexico**

Sample Name	Date	Approximate Sample Depth (ft bgs)	Field VOCs by PID (ppm)	Field TPH by 418.1 (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)
NMOCD Action Level*			100	100	10	NE	NE	NE	50	100	
SB-1	5/10/2016	1	3,600	--	--	--	--	--	--	--	--
		2.5	2,000	--	--	--	--	--	--	--	--
		4	2,100	--	--	--	--	--	--	--	--
		6.5	1,250	--	--	--	--	--	--	--	--
		9	1,300	--	--	--	--	--	--	--	--
		11	2,300	--	--	--	--	--	--	--	--
		13	2,800	1,090	<0.12	<0.25	<0.25	3.2	3.2	200	80
SB-2	5/10/2016	0.5	300	--	--	--	--	--	--	--	--
		1.5	650	--	--	--	--	--	--	--	--
		3.5	667	--	--	--	--	--	--	--	--
		5	812	--	--	--	--	--	--	--	--
		7	900	21.7	--	--	--	--	--	--	--
		9	380	--	--	--	--	--	--	--	--
		11	750	--	--	--	--	--	--	--	--
SB-3	5/10/2016	13	350	<20.0	--	--	--	--	--	--	--
		1	13.0	--	--	--	--	--	--	--	--
		3	52.3	--	--	--	--	--	--	--	--
		5	68.3	--	--	--	--	--	--	--	--
		7	88.7	<20.0	--	--	--	--	--	--	--
		9	15.6	--	--	--	--	--	--	--	--
		11	6.5	--	--	--	--	--	--	--	--
SB-4	5/10/2016	13	6.6	--	--	--	--	--	--	--	--
		1	28.9	--	--	--	--	--	--	--	--
		5	39.1	--	--	--	--	--	--	--	--
		7	85.1	--	--	--	--	--	--	--	--
		9	39.1	--	--	--	--	--	--	--	--
		11	13.2	--	--	--	--	--	--	--	--
		13	53.1	--	--	--	--	--	--	--	--
SB-5	5/10/2016	1	2,045	--	--	--	--	--	--	--	--
		3	2,040	--	--	--	--	--	--	--	--
		5	1,892	--	--	--	--	--	--	--	--
		7	2,546	--	--	--	--	--	--	--	--
		9	2,116	--	--	--	--	--	--	--	--
		11.5	1,611	--	--	--	--	--	--	--	--
		13	1,457	--	--	--	--	--	--	--	--

Notes: VOCs - volatile organic compounds  
PID - photoionization detector  
ft bgs - feet below grade surface  
ppm - parts per million  
mg/kg - milligrams per kilogram  
\*Based on the NMOCD Guidelines for Remediation of Leaks, Spills and Releases (August 1993)  
\*\*Based on a site ranking of 20.

TPH - total petroleum hydrocarbons  
GRO - gasoline range organics  
DRO - diesel range organics  
BTEX - benzene, toluene, ethylbenzene, and xylenes  
NMOCD - New Mexico Oil Conservation Division



**Table 3. Excavation Confirmation Field Screening and Laboratory Analytical Results**  
**ConocoPhillips**  
**Decker #3**  
**San Juan County, New Mexico**

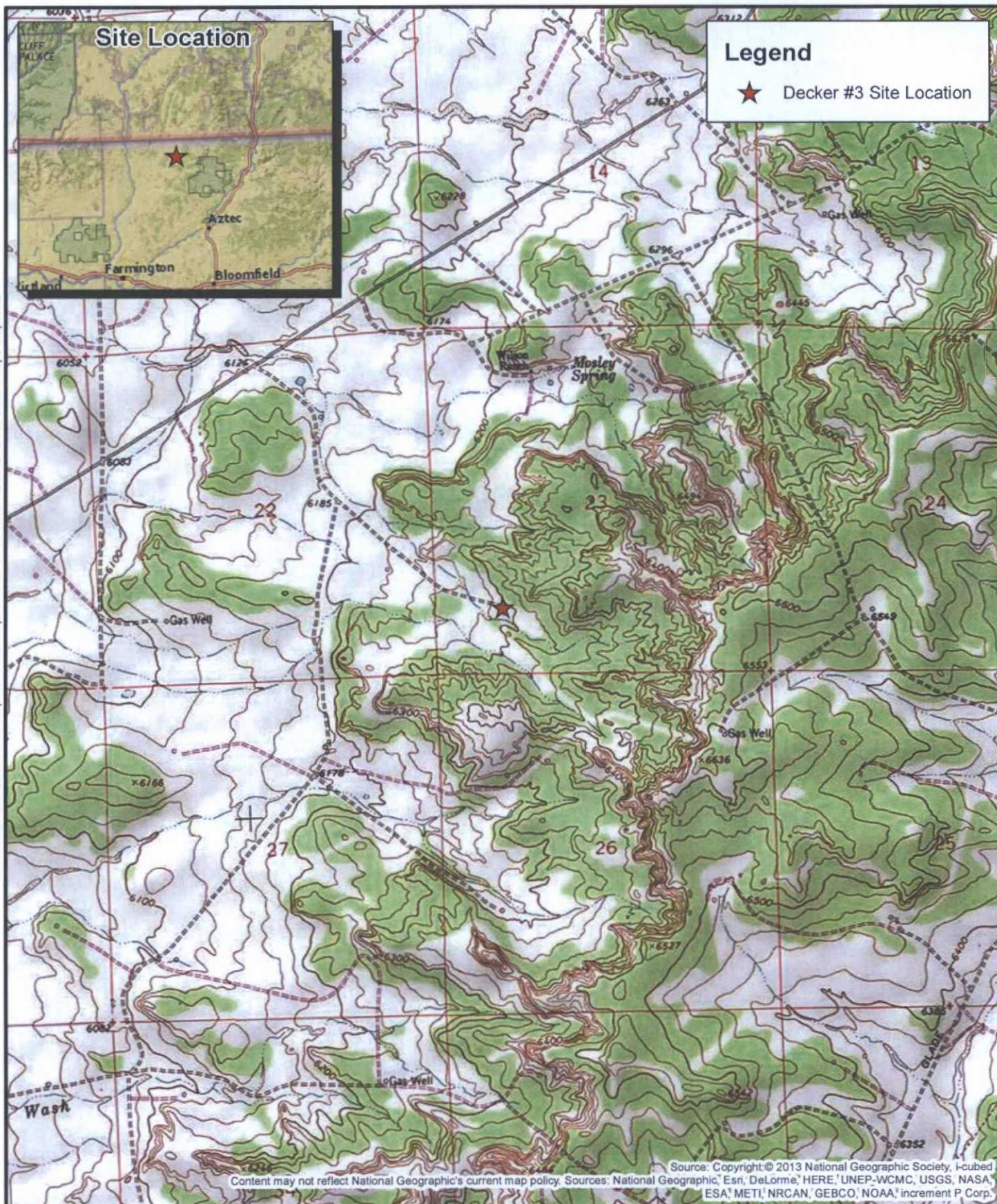
Sample Name	Date	Approximate Sample Depth (ft bgs)	Field VOCs by PID (ppm)	Field TPH by 418.1 (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)	Chlorides (mg/kg)
<b>NMOCD Action Level*</b>			<b>100**</b>	<b>100</b>	<b>10</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>50</b>	<b>100**</b>		<b>NE</b>
SC-1	8/3/2016	15	<b>1,021</b>	68.7	<0.019	<0.037	<0.037	0.37	0.37	77	16	<30
SC-2	8/3/2016	1 to 15	0.5	<20.0	<0.019	<0.038	<0.038	<0.076	<0.171	<3.8	<9.6	<30
SC-3	8/3/2016	1 to 15	0.2	<20.0	<0.019	<0.039	<0.039	<0.077	<0.174	<3.9	<9.7	<30
SC-4	8/3/2016	1 to 15	3.5	--	<0.020	<0.041	<0.041	<0.081	<0.183	<4.1	<9.7	<30
SC-5	8/3/2016	1 to 15	2.9	--	<0.019	<0.037	<0.037	<0.075	<0.168	<3.7	<9.6	<30

Notes: VOCs - volatile organic compounds ND - not detected above laboratory reporting limits  
PID - photoionization detector BTEX - benzene, toluene, ethylbenzene, and xylenes  
ft bgs - feet below grade surface TPH - total petroleum hydrocarbons  
ppm - parts per million GRO - gasoline range organics  
mg/kg - milligrams per kilogram DRO - diesel range organics  
NE - not-established NMOCD - New Mexico Oil Conservation Division  
\*Based on the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases (August 1993)*  
\*\*Based on a site ranking of 40.

## Figures



Document Path: U:\ConocoPhillips\ConocoPhillips\Decker 3 Pro Rem 1\Decker 3 Pro Rem 1 Topo Map.mxd



**Rule Engineering, LLC**  
Solutions to Regulations for Industry

0 0.2 0.4 0.8  
Miles  
Adobe Downs Ranch Quadrangle  
1:24,000

**ConocoPhillips**

M-S23-T32N-R12W  
N36.96607, W108.06705  
San Juan County, NM  
API: 30-045-60068





**Figure 1**  
**Topographic Map**  
Decker #3







## Legend

-  Excavation
-  Excavation Sample Locations
-  Soil Boring Locations
-  Berm



Source: Google Maps

**Rule** Engineering, LLC  
Solutions to Regulations for Industry

0 2.5 5 10 15 20  
Feet  
1 inch = 10 feet

**ConocoPhillips**

M-S23-T32N-R12W  
N36.96607, W108.06705  
San Juan County, NM  
API: 30-045-60068

**Figure 2**  
**Sample Location Map**  
Decker #3

Appendix A

Analytical Laboratory Reports



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)

May 20, 2016

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

RE: CoP Decker #3

OrderNo.: 1605554

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/12/2016 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 1605554

Date Reported: 5/20/2016

CLIENT: Rule Engineering LLC

Client Sample ID: SB-1 @ 13

Project: CoP Decker #3

Collection Date: 5/10/2016 10:30:00 AM

Lab ID: 1605554-001

Matrix: SOIL

Received Date: 5/12/2016 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: KJH
Diesel Range Organics (DRO)	80	10		mg/Kg	1	5/18/2016 3:13:51 PM	25376
Surr: DNOP	101	70-130		%Rec	1	5/18/2016 3:13:51 PM	25376
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	200	25	D	mg/Kg	5	5/13/2016 10:49:19 PM	25287
Surr: BFB	321	80-120	SD	%Rec	5	5/13/2016 10:49:19 PM	25287
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.12	D	mg/Kg	5	5/13/2016 10:49:19 PM	25287
Toluene	ND	0.25	D	mg/Kg	5	5/13/2016 10:49:19 PM	25287
Ethylbenzene	ND	0.25	D	mg/Kg	5	5/13/2016 10:49:19 PM	25287
Xylenes, Total	3.2	0.49	D	mg/Kg	5	5/13/2016 10:49:19 PM	25287
Surr: 4-Bromofluorobenzene	118	80-120	D	%Rec	5	5/13/2016 10:49:19 PM	25287

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#: 1605554

20-May-16

Client: Rule Engineering LLC

Project: CoP Decker #3

Sample ID	LCS-25376	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	25376	RunNo:	34312					
Prep Date:	5/18/2016	Analysis Date:	5/18/2016	SeqNo:	1057969	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	92.6	62.6	124			
Surr: DNOP	4.7		5.000		94.9	70	130			

Sample ID	MB-25376	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	25376	RunNo:	34312					
Prep Date:	5/18/2016	Analysis Date:	5/18/2016	SeqNo:	1057971	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	9.6		10.00		95.7	70	130			

Sample ID	LCS-25321	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	25321	RunNo:	34313					
Prep Date:	5/16/2016	Analysis Date:	5/18/2016	SeqNo:	1058336	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.4		5.000		88.6	70	130			

Sample ID	LCS-25322	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	25322	RunNo:	34313					
Prep Date:	5/16/2016	Analysis Date:	5/18/2016	SeqNo:	1058337	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.1		5.000		82.7	70	130			

Sample ID	MB-25321	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	25321	RunNo:	34313					
Prep Date:	5/16/2016	Analysis Date:	5/18/2016	SeqNo:	1058338	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.1		10.00		91.0	70	130			

Sample ID	MB-25322	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	25322	RunNo:	34313					
Prep Date:	5/16/2016	Analysis Date:	5/18/2016	SeqNo:	1058339	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.5		10.00		95.1	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#: 1605554

20-May-16

Client: Rule Engineering LLC

Project: CoP Decker #3

Sample ID	MB-25287		SampType:	MBLK		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	PBS		Batch ID:	25287		RunNo:	34211				
Prep Date:	5/12/2016		Analysis Date:	5/13/2016		SeqNo:	1055224		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	1000		1000		102	80	120				

Sample ID	LCS-25287		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 25287		RunNo: 34211					
Prep Date:	5/12/2016		Analysis Date: 5/13/2016		SeqNo: 1055225		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	91.8	80	120			
Surr: BFB	1100		1000		111	80	120			

Sample ID	5ML RB		SampType:	MBLK		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	PBS		Batch ID:	B34260		RunNo:	34260				
Prep Date:			Analysis Date:	5/16/2016		SeqNo:	1056341		Units: %Rec		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: BFB	1000		1000		101	80	120				

Sample ID	2.5UG GRO LCS		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: B34260		RunNo: 34260					
Prep Date:			Analysis Date: 5/16/2016		SeqNo: 1056342		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1200		1000		118	80	120			

## 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#: 1605554

20-May-16

Client: Rule Engineering LLC

Project: CoP Decker #3

Sample ID	MB-25287		SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	PBS		Batch ID:	25287		RunNo:	34211			
Prep Date:	5/12/2016		Analysis Date:	5/13/2016		SeqNo:	1055265		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	1.0		1.000		104	80	120			

Sample ID	LCS-25287		SampType:	LCS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	LCSS		Batch ID:	25287		RunNo:	34211			
Prep Date:	5/12/2016		Analysis Date:	5/13/2016		SeqNo:	1055266		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	101	75.3	123			
Toluene	1.0	0.050	1.000	0	99.9	80	124			
Ethylbenzene	0.99	0.050	1.000	0	98.8	82.8	121			
Xylenes, Total	3.0	0.10	3.000	0	98.9	83.9	122			
Surr: 4-Bromofluorobenzene	1.1		1.000		112	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

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



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: 1605554

RcptNo: 1

Received by/date:

Logged By: Ashley Gallegos

5/12/2016 7:20:00 AM

Completed By: Ashley Gallegos

5/12/2016 10:07:09 AM

Reviewed By: IO

05/12/16

### 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	1.0	Good	Yes			



Chain-of-Custody Record		Turn-Around Time:
Client: <u>Rule Engineering, LLC</u>	<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush _____	Project Name: <u>COP Decker #3</u>
Mailing Address: <u>501 Airport Dr, Suite 205</u>	Project #: _____	
<u>Farmington, NM 87401</u>	Project Manager: <u>Heather Woods</u>	Sampler: <u>H. Woods / J. Valdez</u>
Phone #: <u>(505) 716-2787</u>	On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
email or Fax#: <u>hwoods@ruleengineering.com</u>	Sample Temperature: <u>1.0</u>	
QA/QC Package:		
<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)		
Accreditation		
<input type="checkbox"/> NELAP <input type="checkbox"/> Other _____		
<input type="checkbox"/> EDD (Type) _____		

Sample Temperature: 1.0



X	BTEX + <del>MTHB</del> + <del>TCE</del> s (8021)
	BTEX + <del>MTHB</del> + TPH (Gas only)
X	TPH 8015B (GRO / DRO / <del>MTHB</del> )
	TPH (Method 418.1)
	EDB (Method 504.1)
	PAH's (8310 or 8270 SIMS)
	RCRA 8 Metals
	Anions ( $F, Cl, NO_3, NO_2, PO_4, SO_4$ )
	8081 Pesticides / 8082 PCB's
	8260B (VOA)
	8270 (Semi-VOA)
	Air Bubbles (Y or N)

[illegible]

Date: 5/11/16	Time: 1814	Relinquished by: Heather M. Wood	Received by: Christine Wacker	Date: 5/11/16	Time: 1814
Date: 5/11/16	Time: 1836	Relinquished by: Christine Wacker	Received by: [Signature]	Date: 05/12/16	Time: 0720

Remarks:  
Direct Bill to Conocophillips  
WO: User ID: MKSPENC  
Area: 1 Order By: Bobby Spearman  
Area Supervisor: Billy Schaapink

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 notated on the analytical 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)

August 05, 2016

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

RE: Decker 3

OrderNo.: 1608192

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 5 sample(s) on 8/4/2016 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 1608192

Date Reported: 8/5/2016

CLIENT: Rule Engineering LLC

Client Sample ID: SC-1

Project: Decker 3

Collection Date: 8/3/2016 10:10:00 AM

Lab ID: 1608192-001

Matrix: MEOH (SOIL)

Received Date: 8/4/2016 6:30:00 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	8/4/2016 12:18:06 PM	26787
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	16	9.5		mg/Kg	1	8/4/2016 3:24:24 PM	26779
Surr: DNOP	80.4	70-130		%Rec	1	8/4/2016 3:24:24 PM	26779
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	77	3.7		mg/Kg	1	8/4/2016 10:12:13 AM	26763
Surr: BFB	893	49.4-163	S	%Rec	1	8/4/2016 10:12:13 AM	26763
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.019		mg/Kg	1	8/4/2016 10:12:13 AM	26763
Toluene	ND	0.037		mg/Kg	1	8/4/2016 10:12:13 AM	26763
Ethylbenzene	ND	0.037		mg/Kg	1	8/4/2016 10:12:13 AM	26763
Xylenes, Total	0.37	0.074		mg/Kg	1	8/4/2016 10:12:13 AM	26763
Surr: 4-Bromofluorobenzene	128	80-120	S	%Rec	1	8/4/2016 10:12:13 AM	26763

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



## Analytical Report

Lab Order 1608192

Date Reported: 8/5/2016

**Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-2**Project:** Decker 3**Collection Date:** 8/3/2016 10:15:00 AM**Lab ID:** 1608192-002**Matrix:** MEOH (SOIL)**Received Date:** 8/4/2016 6:30:00 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	8/4/2016 12:30:31 PM	26787
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/4/2016 3:46:10 PM	26779
Surr: DNOP	88.3	70-130		%Rec	1	8/4/2016 3:46:10 PM	26779
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	8/4/2016 10:35:41 AM	26763
Surr: BFB	104	49.4-163		%Rec	1	8/4/2016 10:35:41 AM	26763
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.019		mg/Kg	1	8/4/2016 10:35:41 AM	26763
Toluene	ND	0.038		mg/Kg	1	8/4/2016 10:35:41 AM	26763
Ethylbenzene	ND	0.038		mg/Kg	1	8/4/2016 10:35:41 AM	26763
Xylenes, Total	ND	0.076		mg/Kg	1	8/4/2016 10:35:41 AM	26763
Surr: 4-Bromofluorobenzene	94.3	80-120		%Rec	1	8/4/2016 10:35:41 AM	26763

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

## Analytical Report

Lab Order 1608192

Date Reported: 8/5/2016

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: SC-3

Project: Decker 3

Collection Date: 8/3/2016 10:20:00 AM

Lab ID: 1608192-003

Matrix: MEOH (SOIL)

Received Date: 8/4/2016 6:30:00 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	8/4/2016 12:42:56 PM	26787
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/4/2016 4:07:45 PM	26779
Surr: DNOP	94.9	70-130		%Rec	1	8/4/2016 4:07:45 PM	26779
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	8/4/2016 10:59:14 AM	26763
Surr: BFB	95.9	49.4-163		%Rec	1	8/4/2016 10:59:14 AM	26763
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.019		mg/Kg	1	8/4/2016 10:59:14 AM	26763
Toluene	ND	0.039		mg/Kg	1	8/4/2016 10:59:14 AM	26763
Ethylbenzene	ND	0.039		mg/Kg	1	8/4/2016 10:59:14 AM	26763
Xylenes, Total	ND	0.077		mg/Kg	1	8/4/2016 10:59:14 AM	26763
Surr: 4-Bromofluorobenzene	89.8	80-120		%Rec	1	8/4/2016 10:59:14 AM	26763

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



## Analytical Report

Lab Order 1608192

Date Reported: 8/5/2016

**Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-4**Project:** Decker 3**Collection Date:** 8/3/2016 10:25:00 AM**Lab ID:** 1608192-004**Matrix:** MEOH (SOIL)**Received Date:** 8/4/2016 6:30:00 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	8/4/2016 12:55:20 PM	26787
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/4/2016 4:29:31 PM	26779
Surr: DNOP	97.4	70-130		%Rec	1	8/4/2016 4:29:31 PM	26779
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	8/4/2016 11:22:46 AM	26763
Surr: BFB	96.1	49.4-163		%Rec	1	8/4/2016 11:22:46 AM	26763
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.020		mg/Kg	1	8/4/2016 11:22:46 AM	26763
Toluene	ND	0.041		mg/Kg	1	8/4/2016 11:22:46 AM	26763
Ethylbenzene	ND	0.041		mg/Kg	1	8/4/2016 11:22:46 AM	26763
Xylenes, Total	ND	0.081		mg/Kg	1	8/4/2016 11:22:46 AM	26763
Surr: 4-Bromofluorobenzene	90.4	80-120		%Rec	1	8/4/2016 11:22:46 AM	26763

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 1608192

Date Reported: 8/5/2016

CLIENT: Rule Engineering LLC

Client Sample ID: SC-5

Project: Decker 3

Collection Date: 8/3/2016 10:30:00 AM

Lab ID: 1608192-005

Matrix: MEOH (SOIL)

Received Date: 8/4/2016 6:30:00 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	8/4/2016 1:07:45 PM	26787
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/4/2016 4:51:11 PM	26779
Surr: DNOP	96.5	70-130		%Rec	1	8/4/2016 4:51:11 PM	26779
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	8/4/2016 11:46:20 AM	26763
Surr: BFB	96.6	49.4-163		%Rec	1	8/4/2016 11:46:20 AM	26763
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.019		mg/Kg	1	8/4/2016 11:46:20 AM	26763
Toluene	ND	0.037		mg/Kg	1	8/4/2016 11:46:20 AM	26763
Ethylbenzene	ND	0.037		mg/Kg	1	8/4/2016 11:46:20 AM	26763
Xylenes, Total	ND	0.075		mg/Kg	1	8/4/2016 11:46:20 AM	26763
Surr: 4-Bromofluorobenzene	89.1	80-120		%Rec	1	8/4/2016 11:46:20 AM	26763

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#: 1608192

05-Aug-16

Client: Rule Engineering LLC

Project: Decker 3

Sample ID	MB-26787		SampType: MBLK		TestCode: EPA Method 300.0: Anions					
Client ID:	PBS		Batch ID: 26787		RunNo: 36231					
Prep Date:	8/4/2016		Analysis Date: 8/4/2016		SeqNo: 1122323		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-26787		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 26787		RunNo: 36231					
Prep Date:	8/4/2016		Analysis Date: 8/4/2016		SeqNo: 1122324		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.5	90	110			

Sample ID	MB-26787		SampType:	MBLK		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS		Batch ID:	26787		RunNo:	36257				
Prep Date:	8/4/2016		Analysis Date:	8/4/2016		SeqNo:	1123236		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	LCS-26787		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 26787		RunNo: 36257					
Prep Date:	8/4/2016		Analysis Date: 8/4/2016		SeqNo: 1123237		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.9	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#: 1608192

05-Aug-16

Client: Rule Engineering LLC

Project: Decker 3

Sample ID	MB-26779	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	26779	RunNo:	36220					
Prep Date:	8/3/2016	Analysis Date:	8/4/2016	SeqNo:	1122005	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	9.9		10.00		98.8	70	130			

Sample ID	LCS-26779	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	26779	RunNo:	36220					
Prep Date:	8/3/2016	Analysis Date:	8/4/2016	SeqNo:	1122006	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	97.0	62.6	124			
Surr: DNOP	5.2		5.000		104	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#: 1608192

05-Aug-16

Client: Rule Engineering LLC

Project: Decker 3

Sample ID	MB-26763	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	26763	RunNo:	36215					
Prep Date:	8/3/2016	Analysis Date:	8/4/2016	SeqNo:	1122450	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	970		1000		97.0	49.4	163			

Sample ID	LCS-26763	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	26763	RunNo:	36215					
Prep Date:	8/3/2016	Analysis Date:	8/4/2016	SeqNo:	1122452	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	102	80	120			
Surr: BFB	1000		1000		105	49.4	163			

## 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#: 1608192

05-Aug-16

Client: Rule Engineering LLC

Project: Decker 3

Sample ID	MB-26763		SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	PBS		Batch ID:	26763		RunNo:	36215			
Prep Date:	8/3/2016		Analysis Date:	8/4/2016		SeqNo:	1122473	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	0.92		1.000		91.5	80	120			

Sample ID	LCS-26763		SampType:	LCS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	LCSS		Batch ID:	26763		RunNo:	36215			
Prep Date:	8/3/2016		Analysis Date:	8/4/2016		SeqNo:	1122474	Units:	mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	94.4	75.3	123			
Toluene	0.92	0.050	1.000	0	91.9	80	124			
Ethylbenzene	0.96	0.050	1.000	0	95.8	82.8	121			
Xylenes, Total	2.9	0.10	3.000	0	96.4	83.9	122			
Surr: 4-Bromofluorobenzene	0.95		1.000		95.0	80	120			

## 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 |





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: 1608192

RcptNo: 1

Received by/date:

AG

08/04/16

Logged By: Ashley Gallegos

8/4/2016 6:30:00 AM

Completed By: Ashley Gallegos

8/4/2016 6:54:02 AM

Reviewed By:

AG

08/4/16

AG

### 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 ☐ # of preserved bottles checked for pH: ☐ ( $<2$  or  $>12$  unless noted)
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐ Adjusted? ☐
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 ☐ 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	2.5	Good	Yes			

# Chain-of-Custody Record

Client: Rule Engineering, LLC

Mailing Address: 501 Airport Dr. Suite 205

Albuquerque, NM

Phone #: 505 793 9486

Email or Fax#: jvaldez@ruleengineering.com

VOQC Package:

Standard ☐ Level 4 (Full Validation)

Creditation

NELAP ☐ Other

EDD (Type)

Turn-Around Time:

☒ Standard ☒ Rush Same Day

Project Name: Decker ~~Pro Rata~~ #3

Project #:

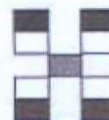
Project Manager:

Heather & Woods

Sampler: Justin Valdez

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.5



## HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

### Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TPH (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / TPO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	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)
3/6	1010	Soil	SL-1	4oz Glass	Cold	11008192-001	+	+	+					X				
3/6	1015	Soil	SL-2			-002	+	+	+					X				
3/6	1020	Soil	SL-3			-003	+	+	+					X				
3/6	1025	Soil	SL-4			-004	+	+	+					X				
3/6	1030	Soil	SL-5			-005	+	+	+					X				

Relinquished by: [Signature]

Received by: [Signature] Date: 8/3/10 Time: 1705

Remarks: Direct Bill to ConocoPhillips  
WO: 21466492  
Approved: MKSPNCE  
Area: 1  
Area Supervisor: Billy Schapok  
ordered by: Bobby Spearman

Relinquished by: [Signature]

Received by: [Signature] Date: 08/04/10 Time: 0630

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 notated on the analytical report