



**Lucid Energy Delaware**

**Pauline 8" Poly Line Release**

**Sec 28, T23S, R31E**

**Eddy County, New Mexico**

**August 24, 2017**

## Location

The leak occurred on an 8" Poly gas line in the north half of Sec 28, T23S, R31E. The leak is located along the pipeline ROW and is not associated with any individual facility.

## Introduction

In January 2017, Lucid Energy Delaware, L.L.C. (Lucid) personnel were conducting a leak survey of the "Bootleg Ridge" gas system. During the survey an area of little to no vegetative growth was discovered, possibly indicating a pipeline leak. An RMLD gas detection device was used to confirm the presence of hydrocarbon vapors, resulting from a gas leak. The area was located directly over the intersection of five pipelines, three belonging to DCP Midstream, one belonging to EOG Resources, and one belonging to Lucid. Lucid excavated our line to determine the source of the leak, which ended up being a buried flange on the 8" poly line.

The failed flange resulted in a leak of an undetermined amount of gas, and no detectable liquids. The soil around the leak displayed minor amounts of discoloration and hydrocarbon odor. Soil samples were collected from the open excavation, and show detectable contamination only in the soil immediately surrounding the flange. Based on field observation, and soil samples, we suspect an affected area of no more than 20' L x 10' W.

## Site Ranking

Based on the *Guidelines for Remediation of Leaks, Spills and Releases* (NMOCD, August 13, 1993), hereafter referred to as "the Guidelines", the site ranking criteria are as follows.

**Depth to Ground Water:** The nearest well on record is C-02954 EXPL, does not record any information regarding the depth to groundwater. Well records for this township show an average depth to groundwater of 232'. Exhibiting a depth to groundwater of greater than 100' results in a site ranking of 0.

**Wellhead Protection Area:** The nearest water well is C-02954 EXPL, is located 4,300' to the northwest of the site. According to the *Guidelines*, not being within 1000 feet of a water source results in a site ranking of 0.

**Distance to Surface Water Body:** The nearest surface water body is the Salt Lake, located 12 miles to the west of the site, resulting in a site ranking of 0.

### Total Site Ranking:

Depth to Ground water

0

Wellhead Protection Area	0
Distance to Surface Water Body	<u>0</u>
Total:	0

## Recommended Remediation Action Level

According to the *Guidelines*, a location with a site ranking of 0 is subject to the following Recommended Remediation Action Level (RRAL).

Benzene	10 ppm
BTEX	50 ppm
TPH	5000 ppm

There are no standards set for chloride contamination set within the *Guidelines*. If chlorides are determined to be present, Lucid will work with the District I Oil Conservation office to determine an appropriate action level, and will attempt to delineate to 1000 ppm chlorides in accordance with standard Bureau of Land Management work practice.

## Proposed Remediation Work

Lucid will excavate the material most affected, immediately around the leaking flange to be disposed of at an NMOCD approved facility. Soil samples will be collected from the sidewalls and floors of the excavation to confirm that RRALs have been met. Soil appearing to be less affected will be sampled, and if below the RRALs will be used to back fill the excavation.

*Update 8/24/2017:* Excavation work has been conducted at the site. Soil sampling shows the area to exhibit contamination levels well below the RRAL for the site. As such Lucid is filing for closure of the release.

Any questions regarding this notification and proposed remediation plan can be directed to:

Kerry Egan

Environmental Compliance Coordinator

Lucid Energy Delaware

Office: (575) 810-6021


Cell: (575) 513-8988

Kegan@lucid-energy.com

## Sampling Summary for Pauline 8" Remediation Project

Analytical Report 1708802							
Sample Date	Description	BTEX	GRO	DRO	CI-	Comments	
1708802-001	8/12/2017	North Sidewall	ND	ND	14	47	Composite sample of the north sidewall from 0-4'.
1708802-002	8/12/2017	South Sidewall	ND	ND	ND	ND	Composite sample of the south sidewall from 0-4'.
1708802-003	8/12/2017	East Sidewall	ND	ND	ND	ND	Composite sample of the East sidewall from 0-4'.
1708802-004	8/12/2017	West Sidewall	ND	ND	72	41	Composite sample of the West sidewall from 0-4'.
1708802-005	8/12/2017	Floor North	ND	ND	ND	140	Sample of the excavation floor on the north end. At 4' depth.
1708802-006	8/12/2017	Floor South	ND	ND	ND	ND	Sample of the excavation floor on the north end. At 4' depth.
Site Ranking: 0 RRAL for Benzene: 10 ppm RRAL for BTEX: 50 ppm RRAL for TPH: 5000 ppm No RRAL for CI-							



G	REFERENCE DRAWINGS		SPECIAL NOTES		REVISIONS			DRAWN BY: KE	THIS DRAWING IS THE PROPERTY OF LUCID ENERGY AND SHALL NOT TO BE USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT IS SPECIFICALLY INTENDED		LUCID ENERGY DELAWARE			G							
			1. INSTRUMENT LETTER DESIGNATIONS PER ANSI/ISA-S5.1 (LATEST EDITION) 2. FOR BLOCK VALVES - USE BALL OR GATE VALVES UP TO 275°F DESIGN TEMPERATURES AND GATE VALVES FOR HIGHER DESIGN TEMPERATURES. 3. ALL DRAIN PIPING TO BE FREE DRAINING. 4. ALL PIPING TO PSV'S TO BE FREE DRAINING. 5. PROVIDE VENTS WITH 0.5" VALVES ON ALL HIGH POINTS, AND DRAINS WITH 0.75" VALVES ON ALL LOW POINTS.		REV.	DATE	BY	DESCRIPTION			APP'D.	CHECKED BY:	PAULINE 8" POLY LINE RELEASE DIAGRAM								
															APPROVAL:						
															APPROVAL: N/A						
															DATE: 8/24/2017						
															SCALE: N.T.S.						
1		2		3		4		5		6		7		8		9		10		11	





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 23, 2017

Kerry Egan  
Lucid Energy Delaware  
326 West Quay St  
Artesia, NM 88210  
TEL: (575) 513-8988  
FAX

RE: Pauline 8"

OrderNo.: 1708802

Dear Kerry Egan:

Hall Environmental Analysis Laboratory received 6 sample(s) on 8/12/2017 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 horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1708802

Date Reported: 8/23/2017

**CLIENT:** Lucid Energy Delaware

**Client Sample ID:** North Sidewall

**Project:** Pauline 8"

**Collection Date:** 8/4/2017 8:00:00 AM

**Lab ID:** 1708802-001

**Matrix:** SOIL

**Received Date:** 8/12/2017 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	47	30		mg/Kg	20	8/22/2017 11:45:32 AM	33484
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	14	9.5		mg/Kg	1	8/17/2017 8:06:44 PM	33371
Surr: DNOP	110	70-130		%Rec	1	8/17/2017 8:06:44 PM	33371
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/16/2017 11:31:59 AM	33368
Surr: BFB	77.5	54-150		%Rec	1	8/16/2017 11:31:59 AM	33368
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	8/16/2017 11:31:59 AM	33368
Toluene	ND	0.046		mg/Kg	1	8/16/2017 11:31:59 AM	33368
Ethylbenzene	ND	0.046		mg/Kg	1	8/16/2017 11:31:59 AM	33368
Xylenes, Total	ND	0.091		mg/Kg	1	8/16/2017 11:31:59 AM	33368
Surr: 4-Bromofluorobenzene	107	66.6-132		%Rec	1	8/16/2017 11:31:59 AM	33368

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
	PQL	Practical Quantitative Limit	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 1708802

Date Reported: 8/23/2017

**CLIENT:** Lucid Energy Delaware

**Client Sample ID:** South Sidewall

**Project:** Pauline 8"

**Collection Date:** 8/4/2017 8:00:00 AM

**Lab ID:** 1708802-002

**Matrix:** SOIL

**Received Date:** 8/12/2017 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	ND	30		mg/Kg	20	8/22/2017 12:22:44 PM	33484
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/16/2017 6:07:07 PM	33371
Surr: DNOP	107	70-130		%Rec	1	8/16/2017 6:07:07 PM	33371
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/16/2017 12:43:50 PM	33368
Surr: BFB	77.5	54-150		%Rec	1	8/16/2017 12:43:50 PM	33368
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	8/16/2017 12:43:50 PM	33368
Toluene	ND	0.047		mg/Kg	1	8/16/2017 12:43:50 PM	33368
Ethylbenzene	ND	0.047		mg/Kg	1	8/16/2017 12:43:50 PM	33368
Xylenes, Total	ND	0.093		mg/Kg	1	8/16/2017 12:43:50 PM	33368
Surr: 4-Bromofluorobenzene	107	66.6-132		%Rec	1	8/16/2017 12:43:50 PM	33368

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
	PQL	Practical Quantitative Limit	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 1708802

Date Reported: 8/23/2017

**CLIENT:** Lucid Energy Delaware

**Client Sample ID:** East Sidewall

**Project:** Pauline 8"

**Collection Date:** 8/4/2017 8:00:00 AM

**Lab ID:** 1708802-003

**Matrix:** SOIL

**Received Date:** 8/12/2017 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	ND	30		mg/Kg	20	8/22/2017 12:35:09 PM	33484
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	8/16/2017 6:29:34 PM	33371
Surr: DNOP	110	70-130		%Rec	1	8/16/2017 6:29:34 PM	33371
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/16/2017 1:55:50 PM	33368
Surr: BFB	82.2	54-150		%Rec	1	8/16/2017 1:55:50 PM	33368
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/16/2017 1:55:50 PM	33368
Toluene	ND	0.048		mg/Kg	1	8/16/2017 1:55:50 PM	33368
Ethylbenzene	ND	0.048		mg/Kg	1	8/16/2017 1:55:50 PM	33368
Xylenes, Total	ND	0.096		mg/Kg	1	8/16/2017 1:55:50 PM	33368
Surr: 4-Bromofluorobenzene	112	66.6-132		%Rec	1	8/16/2017 1:55:50 PM	33368

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
	PQL	Practical Quantitative Limit	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 1708802

Date Reported: 8/23/2017

**CLIENT:** Lucid Energy Delaware

**Client Sample ID:** West Sidewall

**Project:** Pauline 8"

**Collection Date:** 8/4/2017 8:00:00 AM

**Lab ID:** 1708802-004

**Matrix:** SOIL

**Received Date:** 8/12/2017 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	41	30		mg/Kg	20	8/22/2017 12:47:34 PM	33484
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	72	10		mg/Kg	1	8/17/2017 9:13:31 PM	33371
Surr: DNOP	109	70-130		%Rec	1	8/17/2017 9:13:31 PM	33371
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/16/2017 2:19:49 PM	33368
Surr: BFB	79.3	54-150		%Rec	1	8/16/2017 2:19:49 PM	33368
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	8/16/2017 2:19:49 PM	33368
Toluene	ND	0.046		mg/Kg	1	8/16/2017 2:19:49 PM	33368
Ethylbenzene	ND	0.046		mg/Kg	1	8/16/2017 2:19:49 PM	33368
Xylenes, Total	ND	0.093		mg/Kg	1	8/16/2017 2:19:49 PM	33368
Surr: 4-Bromofluorobenzene	110	66.6-132		%Rec	1	8/16/2017 2:19:49 PM	33368

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
	PQL	Practical Quantitative Limit	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 1708802

Date Reported: 8/23/2017

**CLIENT:** Lucid Energy Delaware

**Client Sample ID:** Floor-North

**Project:** Pauline 8"

**Collection Date:** 8/4/2017 8:00:00 AM

**Lab ID:** 1708802-005

**Matrix:** SOIL

**Received Date:** 8/12/2017 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	140	30		mg/Kg	20	8/22/2017 1:24:48 PM	33484
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/16/2017 7:14:11 PM	33371
Surr: DNOP	104	70-130		%Rec	1	8/16/2017 7:14:11 PM	33371
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/16/2017 2:43:47 PM	33368
Surr: BFB	78.4	54-150		%Rec	1	8/16/2017 2:43:47 PM	33368
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/16/2017 2:43:47 PM	33368
Toluene	ND	0.050		mg/Kg	1	8/16/2017 2:43:47 PM	33368
Ethylbenzene	ND	0.050		mg/Kg	1	8/16/2017 2:43:47 PM	33368
Xylenes, Total	ND	0.099		mg/Kg	1	8/16/2017 2:43:47 PM	33368
Surr: 4-Bromofluorobenzene	109	66.6-132		%Rec	1	8/16/2017 2:43:47 PM	33368

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
	PQL	Practical Quantitative Limit	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 1708802

Date Reported: 8/23/2017

**CLIENT:** Lucid Energy Delaware

**Client Sample ID:** Floor-South

**Project:** Pauline 8"

**Collection Date:** 8/4/2017 8:00:00 AM

**Lab ID:** 1708802-006

**Matrix:** SOIL

**Received Date:** 8/12/2017 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	ND	30		mg/Kg	20	8/22/2017 1:37:13 PM	33484
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	8/16/2017 7:36:41 PM	33371
Surr: DNOP	102	70-130		%Rec	1	8/16/2017 7:36:41 PM	33371
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/16/2017 3:07:47 PM	33368
Surr: BFB	86.0	54-150		%Rec	1	8/16/2017 3:07:47 PM	33368
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	8/16/2017 3:07:47 PM	33368
Toluene	ND	0.046		mg/Kg	1	8/16/2017 3:07:47 PM	33368
Ethylbenzene	ND	0.046		mg/Kg	1	8/16/2017 3:07:47 PM	33368
Xylenes, Total	ND	0.093		mg/Kg	1	8/16/2017 3:07:47 PM	33368
Surr: 4-Bromofluorobenzene	116	66.6-132		%Rec	1	8/16/2017 3:07:47 PM	33368

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
	PQL	Practical Quantitative Limit	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#: 1708802

23-Aug-17

Client: Lucid Energy Delaware

Project: Pauline 8"

Sample ID	MB-33484		SampType: mblk		TestCode: EPA Method 300.0: Anions					
Client ID:	PBS		Batch ID: 33484		RunNo: 45131					
Prep Date:	8/22/2017		Analysis Date: 8/22/2017		SeqNo: 1429509		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-33484		SampType: lcs		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 33484		RunNo: 45131					
Prep Date:	8/22/2017		Analysis Date: 8/22/2017		SeqNo: 1429510		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  
PQL Practical Quantitative Limit  
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#: 1708802

23-Aug-17

Client: Lucid Energy Delaware

Project: Pauline 8"

Sample ID	MB-33371		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 33371		RunNo: 44981					
Prep Date:	8/15/2017		Analysis Date: 8/16/2017		SeqNo: 1423234		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	11		10.00		105	70	130			

Sample ID	LCS-33371		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 33371		RunNo: 44981					
Prep Date:	8/15/2017		Analysis Date: 8/16/2017		SeqNo: 1423518		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	94.2	73.2	114			
Surr: DNOP	5.0		5.000		101	70	130			

Sample ID	1708802-001AMS		SampType: MS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	North Sidewall		Batch ID: 33371		RunNo: 45010					
Prep Date:	8/15/2017		Analysis Date: 8/17/2017		SeqNo: 1425971		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	58	9.6	47.76	14.08	92.5	55.8	122			
Surr: DNOP	5.3		4.776		111	70	130			

Sample ID	1708802-001AMSD		SampType: MSD		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	North Sidewall		Batch ID: 33371		RunNo: 45010					
Prep Date:	8/15/2017		Analysis Date: 8/17/2017		SeqNo: 1425972		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	61	9.9	49.50	14.08	95.0	55.8	122	4.76	20	
Surr: DNOP	5.2		4.950		106	70	130	0	0	

### 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  
PQL Practical Quantitative Limit  
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#: 1708802

23-Aug-17

Client: Lucid Energy Delaware

Project: Pauline 8"

Sample ID	MB-33368		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 33368		RunNo: 44983					
Prep Date:	8/15/2017		Analysis Date: 8/16/2017		SeqNo: 1423807		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	810		1000		80.9	54	150			

Sample ID	LCS-33368		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 33368		RunNo: 44983					
Prep Date:	8/15/2017		Analysis Date: 8/16/2017		SeqNo: 1423808		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.2	76.4	125			
Surr: BFB	900		1000		90.4	54	150			

Sample ID	1708802-002AMS		SampType: MS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	South Sidewall		Batch ID: 33368		RunNo: 44983					
Prep Date:	8/15/2017		Analysis Date: 8/16/2017		SeqNo: 1423816		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.9	24.34	0	107	77.8	128			
Surr: BFB	880		973.7		90.7	54	150			

Sample ID	1708802-002AMSD		SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	South Sidewall		Batch ID: 33368		RunNo: 44983					
Prep Date:	8/15/2017		Analysis Date: 8/16/2017		SeqNo: 1423817		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.8	24.11	0	109	77.8	128	0.965	20	
Surr: BFB	850		964.3		88.6	54	150	0	0	

### Qualifiers:

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D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
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#: 1708802

23-Aug-17

Client: Lucid Energy Delaware

Project: Pauline 8"

Sample ID	<b>MB-33368</b>		SampType:	<b>MBLK</b>		TestCode:	<b>EPA Method 8021B: Volatiles</b>			
Client ID:	<b>PBS</b>		Batch ID:	<b>33368</b>		RunNo:	<b>44983</b>			
Prep Date:	<b>8/15/2017</b>		Analysis Date:	<b>8/16/2017</b>		SeqNo:	<b>1423831</b>		Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		111	66.6	132			

Sample ID	<b>LCS-33368</b>		SampType:	<b>LCS</b>		TestCode:	<b>EPA Method 8021B: Volatiles</b>			
Client ID:	<b>LCSS</b>		Batch ID:	<b>33368</b>		RunNo:	<b>44983</b>			
Prep Date:	<b>8/15/2017</b>		Analysis Date:	<b>8/16/2017</b>		SeqNo:	<b>1423832</b>		Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	102	80	120			
Toluene	1.0	0.050	1.000	0	103	80	120			
Ethylbenzene	1.0	0.050	1.000	0	103	80	120			
Xylenes, Total	3.1	0.10	3.000	0	104	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		117	66.6	132			

Sample ID	<b>1708802-001AMS</b>		SampType:	<b>MS</b>		TestCode:	<b>EPA Method 8021B: Volatiles</b>			
Client ID:	<b>North Sidewall</b>		Batch ID:	<b>33368</b>		RunNo:	<b>44983</b>			
Prep Date:	<b>8/15/2017</b>		Analysis Date:	<b>8/16/2017</b>		SeqNo:	<b>1423837</b>		Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.024	0.9653	0	116	80.9	132			
Toluene	1.2	0.048	0.9653	0	121	79.8	136			
Ethylbenzene	1.2	0.048	0.9653	0	124	79.4	140			
Xylenes, Total	3.6	0.097	2.896	0	125	78.5	142			
Surr: 4-Bromofluorobenzene	1.1		0.9653		115	66.6	132			

Sample ID	<b>1708802-001AMSD</b>		SampType:	<b>MSD</b>		TestCode:	<b>EPA Method 8021B: Volatiles</b>			
Client ID:	<b>North Sidewall</b>		Batch ID:	<b>33368</b>		RunNo:	<b>44983</b>			
Prep Date:	<b>8/15/2017</b>		Analysis Date:	<b>8/16/2017</b>		SeqNo:	<b>1423838</b>		Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	0.9950	0	111	80.9	132	2.06	20	
Toluene	1.1	0.050	0.9950	0	114	79.8	136	2.75	20	
Ethylbenzene	1.2	0.050	0.9950	0	116	79.4	140	3.06	20	
Xylenes, Total	3.6	0.10	2.985	0	119	78.5	142	1.96	20	
Surr: 4-Bromofluorobenzene	1.1		0.9950		108	66.6	132	0	0	

### Qualifiers:

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H Holding times for preparation or analysis exceeded  
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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: LUCID ENERGY DELAW

Work Order Number: 1708802

RcptNo: 1

Received By: Andy Freeman 8/12/2017 10:05:00 AM

Completed By: Ashley Gallegos 8/13/2017 4:36:29 PM

Reviewed By: IO 8/15/17

### Chain of Custody

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

### Log In

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

# of preserved  
bottles checked  
for pH:

(<2 or >12 unless noted)

Adjusted? \_\_\_\_\_

Checked by: \_\_\_\_\_

### Special Handling (if applicable)

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

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

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.4	Good	Yes			

## Chain-of-Custody Record

Client: Lucid Energy Delaware

Mailing Address: 326 West Quay St.

Artesia, NM 88210

Phone #: (575) 513-8988

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

**Accreditation:**

☐ NELAP      ☐ Other

☐ EDD (Type)

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

Matrix

Matrix

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

8/4/17	8:00 AM	coil
--------	---------	------

North sidewall

8/4/17	8:00 AM	soil
--------	---------	------

South sidewall

9/14/47	9:00 AM	Call
---------	---------	------

East Sidewall

8/14/17	8:00 AM	soil
---------	---------	------

West Sidewall

8/4/17	8:00 AM	soil
--------	---------	------

Floor - North

8/14/17	8:00 AM	soil
---------	---------	------

Floor - South

Date:	Time:
-------	-------

KKH207	local
--------	-------

Date:	Time:
-------	-------

Date:	Time:
-------	-------

Relinquished by:

111

Relinquished By:

Relinquished By:

Received by:

2

Received by:

Received by:

Date	Time
------	------

1/10/19

Date, Time

Date, Time

Remarks: Run BTEX, TPH, and Cl-analysis

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.