Submit 1 Copy To Appropriate District Office <u>District I</u> – (575) 393-6161 1625 N. French Dr., Hobbs, NM 88240 District II – (575) 748-1283	State of New Mexico Energy, Minerals and Natural Resources	Form C-103 Revised July 18, 2013 WELL API NO.
$\frac{D1Strict II}{District II} = (575) 748-1285$ 811 S. First St., Artesia, NM 88210 $\frac{D1Strict III}{District III} = (505) 334-6178$ 1000 Rio Brazos Rd., Aztec, NM 87410 $\frac{D1Strict IV}{D1220} = (505) 476-3460$ 1220 S. St. Francis Dr., Santa Fe, NM 97505	OIL CONSERVATION DIVISION 1220 South St. Francis Dr. Santa Fe, NM 87505	5. Indicate Type of Lease         STATE       FEE         6. State Oil & Gas Lease No.         NMLC063798
SUNDRY NOTIC (DO NOT USE THIS FORM FOR PROPOS. DIFFERENT RESERVOIR. USE "APPLIC. PROPOSALS.)	7. Lease Name or Unit Agreement Name Red Hills AGI	
1. Type of Well: Oil Well	Gas Well 🛛 Other Acid Gas Injection	8. Well Number 1
2. Name of Operator Lucid Energy Delaware, LLC	¥	9. OGRID Number 372422
<ol> <li>Address of Operator</li> <li>3100 McKinnon Street, Suite 800, D</li> </ol>	Dallas, TX 75201	10. Pool name or Wildcat Exploratory Cherry Canyon
4. Well Location Unit LetterI:	1600feet from theSouthline and	150feet from theEastline
Section 13	Township 24S Range 33E	NMPM County Lea
	11. Elevation (Show whether DR, RKB, RT, GR, etc., 3580 ft GL	)

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:			SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK	PLUG AND ABANDON		REMEDIAL WORK ALTERING CASING	
TEMPORARILY ABANDON	CHANGE PLANS		COMMENCE DRILLING OPNS. P AND A	
PULL OR ALTER CASING	MULTIPLE COMPL		CASING/CEMENT JOB	
DOWNHOLE COMMINGLE				
CLOSED-LOOP SYSTEM	]			
OTHER:			OTHER: TAG Gas concentration & injection volume per	
			R-13507F	$\boxtimes$

 Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Six month report of TAG composition and injection volumes from the Red Hills Plant being injected into the Red Hills AGI #1 as required by NMOCC Order R-13507 item F and agreements with NMOCD staff.

During the period of January - June 2020 the measured  $H_2S$  concentrations in the TAG ranged from about 13.36% to 17.69 % with an average value of about 15.51% as derived from direct sampling and analysis of the TAG entering the well. Appendix A table 1 details the gas analysis of eight TAG samples Lucid Energy took during the report period to measure  $H_2S$  concentration directly. Average daily TAG volume injected is about 803 MSCFD for the reporting period.

This report is submitted to fulfill the reporting requirement established by NMOCD for sampling of TAG concentrations every six-months beginning in June 2018. The following information is contained herein:

- 1. Measured TAG concentrations and volumes for each of eight TAG sampling events (Appendix A, Table 1)
- 2. Graph of TAG volumes January 1, 2020 June 30, 2020 (Appendix A, Figure 1)
- 3. C6+ Gas/Vapor Fractional Analysis report for each sample date (Appendix B)
- 4. Anticipated range of H2S concentrations in TAG under normal operating conditions.

Attachment A to this C-103 includes all supporting analyses and data. NMOCD requested that sampling be done and reported any time a major source change occurs and every six months normally. These results will be submitted to Santa Fe and the Hobbs District office on a C-103 form to be incorporated into the well file by NMOCD upon receipt.

Based on an analysis of the data attached herein, Lucid Energy anticipates the H<sub>2</sub>S concentrations being injected into the Red Hills AGI #1 to range between 13% and 17%. Lucid Energy will notify the NM OCD if concentrations differ substantially based on inlet gas chances or gathering system updates.

Spud Date:	Rig Release Date:	
I hereby certify that the information above is true and	complete to the best of my knowledge and belief.	
SIGNATURE_ Matt Cales	TITLE VP of EHS&R	DATE August 20, 2020
Type or print name Matt Eales For State Use Only	E-mail address: meales@lucid-energy.co	m <sub>PHONE:</sub> 832-496-7513
APPROVED BY: Conditions of Approval (if any):	TITLE	DATE

Appendix A: Summarized TAG Concentrations and Injection Volumes for Red Hills AGI #1



	Sample Dates								
TAG Component	1/3/2020	1/17/2020	2/14/2020	3/13/2020	4/9/2020	4/24/2020	6/5/2020	6/19/2020	Average
H <sub>2</sub> S %	15.47	15.01	14.60	13.36	16.34	16.80	14.84	17.69	15.51
CO <sub>2</sub> %	83.02	84.15	84.92	85.93	82.46	82.68	84.87	79.16	83.40

Table 1: Summary of TAG Concentrations from Eight samples for Red Hills AGI #1

# Appendix B: Red Hills AGI #1 C6+ Gas/Vapor Fractional Analysis by Date



0.089

0.068

0.041

0.061

119.50

118.30

120.20

119.10

41.492

99.25

G/100

9,821.58

**MW** 42.230

# C6+ GAS/VAPOR FRACTIONAL ANALYSIS

#### SAMPLE ID

Customer	Lucid Energy Delaware
Operator	Lucid Energy Delaware
Location	Red Hills
Station/Meter/Well	N/A
Sample Point/Source	AGI Inlet to Compressor
	·
Pressure	12 psig
Sample Temp	N/A
Atm Temp	46 F
Sample Date	01/03/20
Sample Time	10:00:00 AM
Sampled By	Pantechs/DCB
Analysis Date	01/08/20
ContainerID	PL2142

COMPONENT	SYM	MOL %	WT %	GPM
Nitrogen	N2	0.208	0.138	0.023
Carbon Dioxide	CO2	83.024	86.523	14.162
*Hydrogen Sulfide	H2S	15.467	12.482	2.085
Methane	C1	0.875	0.332	0.148
Ethane	C2	0.168	0.120	0.045
Propane	C3	0.075	0.078	0.021
i-Butane	iC4	0.048	0.066	0.016
n-Butane	nC4	0.035	0.048	0.011
i-Pentane	iC5	0.012	0.021	0.004
n-Pentane	nC5	0.013	0.022	0.005
Hexanes+	C6+	0.075	0.170	0.032
	Totals:	100.000	100.000	16.552

SG

1.467

1.453

Ζ

PPMV

156,163.1

0.994

0.993

**GASOLINE CONTENT (GPM)** 

HEATING VALUE (Gross Btu/CF)

**\*H2S DETERMINATION METHOD** 

Onsite Tutwiler (ASTM D2385)

**Ethane & Heavier** 

Propane & Heavier Butanes & Heavier

Pentanes & Heavier

Ideal, Water Saturated

**Real, Water Saturated** 

CALC. PROPERTIES

Wobbe Index, Real

G/100 = Grains/100 SCF.

Water Saturated

26# Gasoline

Ideal, Dry

Real, Dry

Dry

#### **RELATIVE CONCENTRATION**



■ MOL % ■ WT %

#### CALCULATIONS / METHODS

Pressure Base, PSIA	14.65
Temp Base, DEG F	60
Ideal/Real Gas	Real
Test Method	GPA 2261

APPLICABLE CURRENT GPA & ASTM METHODS, PROCEDURES, AND CONSTANTS ARE USED

#### **REMARKS / COMMENTS / OTHER**



0.136

113.20

112.10

113.90

112.90

41.813

93.69

**MW** 42.557

G/100

9,528.21

# C6+ GAS/VAPOR FRACTIONAL ANALYSIS

Pentanes & Heavier

Ideal, Water Saturated

**Real, Water Saturated** 

CALC. PROPERTIES

Wobbe Index, Real

G/100 = Grains/100 SCF.

Water Saturated

HEATING VALUE (Gross Btu/CF)

**\*H2S DETERMINATION METHOD** 

Onsite Tutwiler (ASTM D2385)

26# Gasoline

Ideal, Dry

Real, Dry

Dry

SAMPLE ID	
Customer	Lucid Energy Delaware
Operator	Lucid Energy Delaware
Location	Red Hills
Station/Meter/Well	N/A
Sample Point/Source	AGI Inlet to Compressor
Pressure	12 psig
Sample Temp	N/A
Atm Temp	39 F
Sample Date	01/17/20
Sample Time	10:20:00 AM
Sampled By	Pantechs/DCB
Analysis Date	01/21/20
ContainerID	PI 1199

COMPONENT	SYM	MOL %	WT %	GPM
Nitrogen	N2	0.309	0.203	0.034
Carbon Dioxide	CO2	84.152	87.025	14.355
*Hydrogen Sulfide	H2S	15.005	12.016	2.023
Methane	C1	0.145	0.055	0.025
Ethane	C2	0.032	0.023	0.009
Propane	C3	0.029	0.030	0.008
i-Butane	iC4	0.023	0.031	0.008
n-Butane	nC4	0.039	0.053	0.012
i-Pentane	iC5	0.029	0.049	0.011
n-Pentane	nC5	0.034	0.058	0.012
Hexanes+	C6+	0.203	0.457	0.087
	Totals:	100.000	100.000	16.584
GASOLINE CONTENT (GPM)				
Ethane & Heavier	0.147			
Propane & Heavier				0.138
Butanes & Heavier				0.130

SG

1.478

1.464

Ζ

PPMV

151,498.6

0.994

0.993

#### **RELATIVE CONCENTRATION**



■ MOL % ■ WT %

#### CALCULATIONS / METHODS

Pressure Base, PSIA	14.65
Temp Base, DEG F	60
Ideal/Real Gas	Real
Test Method	GPA 2261

APPLICABLE CURRENT GPA & ASTM METHODS, PROCEDURES, AND CONSTANTS ARE USED

#### **REMARKS / COMMENTS / OTHER**



0.051

0.047

0.040

0.050

100.50

99.60

101.10

100.30

41.791

83.18

**MW** 42.534

G/100

9,273.36

# C6+ GAS/VAPOR FRACTIONAL ANALYSIS

SA	M	PL	Е	ID
5			_	~

-	
Customer	Lucid Energy Delaware
Operator	Lucid Energy Delaware
Location	Red Hills
Station/Meter/Well	N/A
Sample Point/Source	AGI Inlet to Compressor
	·
Pressure	12 psig
Sample Temp	N/A
Atm Temp	38 F
Sample Date	02/14/20
Sample Time	11:00:00 AM
Sampled By	Pantechs/DCB
Analysis Date	02/21/20
ContainerID	PL2110

COMPONENT	SYM	MOL %	WT %	GPM
Nitrogen	N2	0.171	0.113	0.019
Carbon Dioxide	CO2	84.915	87.862	14.484
*Hydrogen Sulfide	H2S	14.604	11.701	1.969
Methane	C1	0.152	0.057	0.026
Ethane	C2	0.025	0.018	0.007
Propane	C3	0.013	0.013	0.004
i-Butane	iC4	0.005	0.007	0.002
n-Butane	nC4	0.016	0.022	0.005
i-Pentane	iC5	0.014	0.024	0.005
n-Pentane	nC5	0.015	0.025	0.005
Hexanes+	C6+	0.070	0.158	0.030
	Totals:	100.000	100.000	16.556

SG

1.477

1.463

Ζ

PPMV

147,446.4

0.994

0.993

**GASOLINE CONTENT (GPM)** 

HEATING VALUE (Gross Btu/CF)

**\*H2S DETERMINATION METHOD** 

Onsite Tutwiler (ASTM D2385)

**Ethane & Heavier** 

**Propane & Heavier** 

**Butanes & Heavier** 

Pentanes & Heavier

Ideal, Water Saturated

**Real, Water Saturated** 

CALC. PROPERTIES

Wobbe Index, Real

G/100 = Grains/100 SCF.

Water Saturated

26# Gasoline

Ideal, Dry

Real, Dry

Dry

#### **RELATIVE CONCENTRATION**



■ MOL % ■ WT %

#### CALCULATIONS / METHODS

14.65
60
Real
GPA 2261

APPLICABLE CURRENT GPA & ASTM METHODS, PROCEDURES, AND CONSTANTS ARE USED

#### **REMARKS / COMMENTS / OTHER**



# C6+ GAS/VAPOR FRACTIONAL ANALYSIS

#### SAMPLE ID

Customer	Lucid Energy Delaware
Operator	Lucid Energy Delaware
Location	Red Hills
Station/Meter/Well	N/A
Sample Point/Source	AGI Inlet to Compressor
	·
Pressure	12 psig
Sample Temp	N/A
Atm Temp	60 F
Sample Date	03/13/20
Sample Time	10:45:00 AM
Sampled By	Pantechs/CCS
Analysis Date	03/16/20
ContainerID	PL2336

COMPONENT	SYM	MOL %	WT %	GPM
Nitrogen	N2	0.008	0.005	0.001
Carbon Dioxide	CO2	85.925	88.594	14.656
*Hydrogen Sulfide	H2S	13.364	10.670	1.802
Methane	C1	0.277	0.104	0.047
Ethane	C2	0.059	0.042	0.016
Propane	C3	0.028	0.029	0.008
i-Butane	iC4	0.212	0.289	0.069
n-Butane	nC4	0.012	0.016	0.004
i-Pentane	iC5	0.006	0.010	0.002
n-Pentane	nC5	0.007	0.012	0.003
Hexanes+	C6+	0.102	0.229	0.044
	Totals:	100.000	100.000	16.652

#### **RELATIVE CONCENTRATION**



■ MOL % ■ WT %

#### **CALCULATIONS / METHODS**

14.65
60
Real
GPA 2261

APPLICABLE CURRENT GPA & ASTM METHODS, PROCEDURES, AND CONSTANTS ARE USED

#### **REMARKS / COMMENTS / OTHER**

Value of "0.000" interpreted as below detectable limit (BDL), unless otherwise stated below.

Ethane & Heavier	
Propane & Heavier	
Butanes & Heavier	

Propane & Heavier	0.130
Butanes & Heavier	0.122
Pentanes & Heavier	0.049
26# Gasoline	0.070

#### HEATING VALUE (Gross Btu/CF)

**GASOLINE CONTENT (GPM)** 

Ideal, Dry	102.50
Ideal, Water Saturated	101.60
Real, Dry	103.10
Real, Water Saturated	102.30

CALC. PROPERTIES	SG	Z	MW
Dry	1.482	0.994	42.684
Water Saturated	1.468	0.993	41.938
Wobbe Index, Real			84.68
			C/100

	PPIVIV	G/100
Onsite Tutwiler (ASTM D2385)	134,929.1	8,486.11
G/100 = Grains/100 SCF.		



0.264

0.240

0.187

0.246

138.70

137.20

139.60

138.10

42.495

41.752

114.90

G/100

MW

# C6+ GAS/VAPOR FRACTIONAL ANALYSIS

#### SAMPLE ID

Customer	Lucid Energy Delaware
Operator	Lucid Energy Delaware
Location	Red Hills
Station/Meter/Well	N/A
Sample Point/Source	AGI Inlet to Compressor
	·
Pressure	12 psig
Sample Temp	N/A
Atm Temp	73 F
Sample Date	04/09/20
Sample Time	11:30:00 AM
Sampled By	Pantechs/DCB
Analysis Date	04/16/20
ContainerID	PL2272

COMPONENT	SYM	MOL %	WT %	GPM
Nitrogen	N2	0.046	0.030	0.005
Carbon Dioxide	CO2	82.456	85.396	14.068
*Hydrogen Sulfide	H2S	16.338	13.103	2.203
, ,				
Methane	C1	0.363	0.137	0.062
Ethane	C2	0.089	0.063	0.024
Propane	C3	0.088	0.091	0.024
i-Butane	iC4	0.080	0.109	0.026
n-Butane	nC4	0.087	0.119	0.027
i-Pentane	iC5	0.062	0.105	0.023
n-Pentane	nC5	0.063	0.107	0.023
Hexanes+	C6+	0.328	0.740	0.141
	Totals:	100.000	100.000	16.626

SG

1.476 1.462 Ζ

PPMV

0.994

0.993

164,951.2 10,374.29

**GASOLINE CONTENT (GPM)** 

HEATING VALUE (Gross Btu/CF)

**\*H2S DETERMINATION METHOD** 

Onsite Stain Tube (GPA 2377)

**Ethane & Heavier** 

Propane & Heavier Butanes & Heavier

Pentanes & Heavier

Ideal, Water Saturated

**Real, Water Saturated** 

CALC. PROPERTIES

Wobbe Index, Real

G/100 = Grains/100 SCF.

Water Saturated

26# Gasoline

Ideal, Dry

Real, Dry

Dry

#### **RELATIVE CONCENTRATION**



■ MOL % ■ WT %

#### CALCULATIONS / METHODS

Pressure Base, PSIA	14.65
Temp Base, DEG F	60
Ideal/Real Gas	Real
Test Method	GPA 2261

APPLICABLE CURRENT GPA & ASTM METHODS, PROCEDURES, AND CONSTANTS ARE USED

#### **REMARKS / COMMENTS / OTHER**



0.174

0.163

0.131

0.168

126.80

125.50

127.60

126.40

42.485

41.743

105.04

G/100

MW

# C6+ GAS/VAPOR FRACTIONAL ANALYSIS

SA	M	PLE	E ID

COMPONENT	SYM	MOL %	WT %	GPM
Nitrogen	N2	0.019	0.013	0.002
Carbon Dioxide	CO2	82.682	85.649	14.106
*Hydrogen Sulfide	H2S	16.800	13.476	2.265
Methane	C1	0.021	0.008	0.004
Ethane	C2	0.015	0.011	0.004
Propane	C3	0.041	0.043	0.011
i-Butane	iC4	0.029	0.040	0.009
n-Butane	nC4	0.072	0.099	0.023
i-Pentane	iC5	0.056	0.095	0.021
n-Pentane	nC5	0.057	0.097	0.021
Hexanes+	C6+	0.208	0.469	0.089
	Totals:	100.000	100.000	16.555

SG

1.476 1.462 Ζ

PPMV

0.994

0.993

169,620.9 10,667.98

**GASOLINE CONTENT (GPM)** 

HEATING VALUE (Gross Btu/CF)

**\*H2S DETERMINATION METHOD** 

Onsite Stain Tube (GPA 2377)

Ethane & Heavier

Propane & Heavier Butanes & Heavier

Pentanes & Heavier

Ideal, Water Saturated

**Real, Water Saturated** 

CALC. PROPERTIES

Wobbe Index, Real

G/100 = Grains/100 SCF.

Water Saturated

26# Gasoline

Ideal, Dry

Real, Dry

Dry

#### **RELATIVE CONCENTRATION**



■ MOL % ■ WT %

#### CALCULATIONS / METHODS

14.65
60
Real
GPA 2261

APPLICABLE CURRENT GPA & ASTM METHODS, PROCEDURES, AND CONSTANTS ARE USED

#### **REMARKS / COMMENTS / OTHER**

# Pantechs Laboratories, Inc. Order: 049-757 Order Date: 6/5/2020 Order Description: BiWeekly Collection

SAMPLE ID		COLLECTION DATA	
Operator	Lucid Energy Delaware	Pressure	14 psig
Location	Red Hills Plant	Sample Temp	N/A
Site	AGI Plant	Atm Temp	80 F
Site Type	Station	Collection Date	06/05/2020
Sample Point	Inlet to Compressor	Collection Time	9:07 AM
Spot/Composite	Spot	Collection By	Cody Carson
Meter ID		Pressure Base	14.73 psi
Purchaser		Temperature Base	60 F
Fluid	Gas	Container(s)	PL0634 , PL2375

# **GPA 2261 Gas Fractional Analysis**

COMPOUND	FORMULA	MOL%	WT%	GPM
NITROGEN	N2	0.006	0.004	0.001
CARBON DIOXIDE	C02	84.867	87.742	14.556
HYDROGEN SULFIDE	H2S	14.840	11.881	2.012
METHANE	C1	0.103	0.039	0.018
ETHANE	C2	0.021	0.015	0.006
PROPANE	C3	0.015	0.015	0.004
I-BUTANE	iC4	0.008	0.011	0.003
N-BUTANE	nC4	0.013	0.018	0.004
I-PENTANE	iC5	0.008	0.014	0.003
N-PENTANE	nC5	0.009	0.015	0.003
HEXANES PLUS	C6+	0.109	0.246	0.047
TOTALS:		100.000	100.000	16.656

*Value of "0.000" in fractional interpreted as below detectable limit. If Onsite H2S testing is performed, its resulting value is used in fractional table* 

LIQUID YIELD	C2+	C3+	C4+	C5+	26# Gasoline
GALLONS/MSCF (GPM)	0.070	0.065	0.061	0.054	0.064
CALCULATED PROPERTIES	BTU/CF	Specific Gr.	Z Factor	Mol Weight	Wobbe Index
CALCULATED PROPERTIES DRY	BTU/CF 104.34	Specific Gr. 1.479	Z Factor 0.994	Mol Weight 42.568	Wobbe Index 85.81

### **Onsite Testing by Stain Tube**

Method	Туре	Mol%	Grains/100	PPMV
GPA2377	H2S	14.8397	9,423.24	149,829.5

# Pantechs Laboratories, Inc. Order: 097-811 Order Date: 6/19/2020 Order Description: BiWeekly Collection

SAMPLE ID		COLLECTION DATA	
Operator	Lucid Energy Delaware	Pressure	14 psig
Location	Red Hills Plant	Sample Temp	N/A
Site	AGI Plant	Atm Temp	80 F
Site Type	Station	Collection Date	06/19/2020
Sample Point	Inlet to Compressor	Collection Time	10:16 AM
Spot/Composite	Spot	Collection By	Darin Buske
Meter ID		Pressure Base	14.73 psi
Purchaser		Temperature Base	60 F
Fluid	Gas	Container(s)	PL2078 , PL1982

# **GPA 2261 Gas Fractional Analysis**

COMPOUND	FORMULA	MOL%	WT%	GPM
NITROGEN	N2	0.019	0.012	0.002
CARBON DIOXIDE	C02	79.162	80.545	13.591
HYDROGEN SULFIDE	H2S	17.694	13.941	2.401
METHANE	C1	0.087	0.032	0.015
ETHANE	C2	0.073	0.050	0.020
PROPANE	C3	0.221	0.226	0.061
I-BUTANE	iC4	0.144	0.194	0.048
N-BUTANE	nC4	0.423	0.569	0.134
I-PENTANE	iC5	0.355	0.592	0.131
N-PENTANE	nC5	0.359	0.598	0.131
HEXANES PLUS	C6+	1.462	3.240	0.632
TOTALS:		100.000	100.000	17.166

*Value of "0.000" in fractional interpreted as below detectable limit. If Onsite H2S testing is performed, its resulting value is used in fractional table* 

LIQUID YIELD	C2+	C3+	C4+	C5+	26# Gasoline
GALLONS/MSCF (GPM)	1.157	1.138	1.076	0.894	1.120
				-	-
CALCULATED PROPERTIES	BTU/CF	Specific Gr.	Z Factor	Mol Weight	Wobbe Index
CALCULATED PROPERTIES DRY	BTU/CF 246.45	Specific Gr. 1.504	Z Factor 0.993	Mol Weight 43.255	Wobbe Index 200.97

### **Onsite Testing by Stain Tube**

Method	Туре	Mol%	Grains/100	PPMV
GPA2377	H2S	17.6935	11,235.40	178,642.9