

Submit 1 Copy To Appropriate District  
Office  
District I - (575) 393-6161  
1625 N. French Dr., Hobbs, NM 88240  
District II - (575) 748-1283  
811 S. First St., Artesia, NM 88210  
District III - (505) 334-6178  
1000 Rio Brazos Rd., Aztec, NM 87410  
District IV - (505) 476-3460  
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

**CONFIDENTIAL** Form C-103  
TIGHT HOLE  
Revised July 18, 2013

|                                                                                                                                                                                                                             |  |                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------|
| <b>SUNDRY NOTICES AND REPORTS ON WELLS</b><br>(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)               |  | WELL API NO.<br>30-039-31309                                                                        |
| 1. Type of Well: Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/>                                                                                              |  | 5. Indicate Type of Lease<br>STATE <input type="checkbox"/> FEE <input checked="" type="checkbox"/> |
| 2. Name of Operator<br>Energen Resources Corporation                                                                                                                                                                        |  | 6. State Oil & Gas Lease No.                                                                        |
| 3. Address of Operator<br>2010 Afton Place, Farmington, NM 87401                                                                                                                                                            |  | 7. Lease Name or Unit Agreement Name<br>Many Canyons 24 03 8                                        |
| 4. Well Location<br>Unit Letter <u>P</u> : <u>1230</u> feet from the <u>South</u> line and <u>716</u> feet from the <u>East</u> line<br>Section <u>8</u> Township <u>24N</u> Range <u>03W</u> NMPM County <u>Rio Arriba</u> |  | 8. Well Number<br>#4H                                                                               |
| 11. Elevation (Show whether DR, RKB, RT, GR, etc.)<br>6878' GL                                                                                                                                                              |  | 9. OGRID Number<br>162928                                                                           |
|                                                                                                                                                                                                                             |  | 10. Pool name or Wildcat<br>West Lindrith Gallup-Dakota                                             |

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

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐  
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐  
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐  
DOWNHOLE COMMINGLE ☐  
CLOSED-LOOP SYSTEM ☐  
OTHER: ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐  
COMMENCE DRILLING OPNS. ☐ P AND A ☐  
CASING/CEMENT JOB ☐  
OTHER: Inter-Well Communication ☒

13. 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.

Energen Resources Corporation conducted stimulation on Many Canyons 24-03 8 #4H

Start Date: 09/20/2015  
End Date: 09/29/2015  
Type: Nitrogen Foam  
Pressure: 6478.8 psig  
Volume: 78,910,153 scf N2  
3,294,187 gallons fluid  
3,114,400 lbs total proppant

OIL CONS. DIV DIST. 3

OCT 21 2015

Results of any investigation conducted: Gas Analysis  
Attached: Spreadsheet listing affected wells due to stimulation activity

Spud Date: 07/01/2015 Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Theresa McAndrews TITLE Production Supervisor DATE 10/20/15

Type or print name Theresa McAndrews E-mail address: tmcnadre@energen.com PHONE: 505-324-4168

For State Use Only

ACCEPTED FOR RECORD

APPROVED BY: Ar TITLE DATE  
Conditions of Approval (if any):



OIL CONS. DIV DIST. 3

OCT 21 2015

2030 Afton Place  
Farmington, NM 87401  
(505) 325-6622Analysis No: EN150220  
Cust No: 73500-14620**Well/Lease Information**Customer Name: ENERGEN RESOURCES CORP.  
Well Name: LITTLE FEDERAL 29 #1  
County/State: RIO ARRIBA  
Location:  
Field:  
Formation:  
Cust. Stn. No.:Source: METER RUN  
Pressure: 91 PSIG  
Sample Temp: 80 DEG. F  
Well Flowing: Y  
Date Sampled: 09/29/2015  
Sampled By: BILLY STALCUP  
Foreman/Engr.:

Remarks:

**Analysis**

| Component:: | Mole%:  | **GPM:  | *BTU:  | *SP Gravity: |
|-------------|---------|---------|--------|--------------|
| Nitrogen    | 76.890  | 8.4660  | 0.00   | 0.7437       |
| CO2         | 0.261   | 0.0450  | 0.00   | 0.0040       |
| Methane     | 15.535  | 2.6360  | 156.90 | 0.0860       |
| Ethane      | 2.239   | 0.5990  | 39.62  | 0.0232       |
| Propane     | 2.174   | 0.5990  | 54.70  | 0.0331       |
| Iso-Butane  | 0.280   | 0.0920  | 9.11   | 0.0056       |
| N-Butane    | 1.047   | 0.3300  | 34.16  | 0.0210       |
| I-Pentane   | 0.304   | 0.1110  | 12.16  | 0.0076       |
| N-Pentane   | 0.340   | 0.1230  | 13.63  | 0.0085       |
| Hexane Plus | 0.930   | 0.4150  | 49.02  | 0.0308       |
| Total       | 100.000 | 13.4160 | 369.30 | 0.9635       |

\* @ 14.730 PSIA DRY &amp; UNCORRECTED FOR COMPRESSIBILITY

\*\*@ 14.730 PSIA &amp; 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.001  
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 370.5  
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 364.1  
REAL SPECIFIC GRAVITY: 0.9641GPM, BTU, and SPG calculations as shown  
above are based on current GPA factors.DRY BTU @ 14.650: 368.5  
DRY BTU @ 14.696: 369.6  
DRY BTU @ 14.730: 370.5  
DRY BTU @ 15.025: 377.9CYLINDER #: 4215  
CYLINDER PRESSURE: 72 PSIG  
DATE RUN: 10/1/15 9:33 AM  
ANALYSIS RUN BY: PATRICIA KING



2030 Afton Place  
Farmington, NM 87401  
(505) 325-6622

Analysis No: EN150219  
Cust No: 73500-14615

### Well/Lease Information

Customer Name: ENERGEN RESOURCES CORP.  
Well Name: LITTLE FEDERAL 20 #1  
County/State: RIO ARRIBA  
Location:  
Field:  
Formation:  
Cust. Stn. No.:

Source: METER RUN  
Pressure: 90 PSIG  
Sample Temp: 79 DEG. F  
Well Flowing: Y  
Date Sampled: 09/29/2015  
Sampled By: BILLY STALCUP  
Foreman/Engr.:

Remarks:

### Analysis

| Component:: | Mole%:  | **GPM:  | *BTU:   | *SP Gravity: |
|-------------|---------|---------|---------|--------------|
| Nitrogen    | 30.001  | 3.3100  | 0.00    | 0.2902       |
| CO2         | 0.676   | 0.1160  | 0.00    | 0.0103       |
| Methane     | 46.187  | 7.8520  | 466.49  | 0.2558       |
| Ethane      | 11.916  | 3.1960  | 210.88  | 0.1237       |
| Propane     | 6.589   | 1.8200  | 165.79  | 0.1003       |
| Iso-Butane  | 0.901   | 0.2960  | 29.30   | 0.0181       |
| N-Butane    | 1.920   | 0.6070  | 62.64   | 0.0385       |
| I-Pentane   | 0.545   | 0.2000  | 21.80   | 0.0136       |
| N-Pentane   | 0.474   | 0.1720  | 19.00   | 0.0118       |
| Hexane Plus | 0.791   | 0.3540  | 41.69   | 0.0262       |
| Total       | 100.000 | 17.9230 | 1017.59 | 0.8885       |

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

\*\*@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0031  
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1023.1  
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1005.3  
REAL SPECIFIC GRAVITY: 0.8909

GPM, BTU, and SPG calculations as shown  
above are based on current GPA factors.

DRY BTU @ 14.650: 1017.5  
DRY BTU @ 14.696: 1020.7  
DRY BTU @ 14.730: 1023.1  
DRY BTU @ 15.025: 1043.6

CYLINDER #: 7001  
CYLINDER PRESSURE: 76 PSIG  
DATE RUN: 10/1/15 9:18 AM  
ANALYSIS RUN BY: Shyann Elledge



2030 Afton Place  
Farmington, NM 87401  
(505) 325-6622

Analysis No: EN150223  
Cust No: 73500-14635

### Well/Lease Information

Customer Name: ENERGEN RESOURCES CORP.  
Well Name: WO HUGHES 7; WH  
County/State: RIO ARRIBA  
Location:  
Field:  
Formation:  
Cust. Stn. No.:

Source: WELL HEAD  
Pressure: 65 PSIG  
Sample Temp: DEG. F  
Well Flowing: Y  
Date Sampled: 10/03/2015  
Sampled By: LUCKY LASATER  
Foreman/Engr.:

Remarks:

### Analysis

| Component:: | Mole%:  | **GPM:  | *BTU:  | *SP Gravity: |
|-------------|---------|---------|--------|--------------|
| Nitrogen    | 57.019  | 6.2820  | 0.00   | 0.5515       |
| CO2         | 0.380   | 0.0650  | 0.00   | 0.0058       |
| Methane     | 32.060  | 5.4420  | 323.80 | 0.1776       |
| Ethane      | 4.513   | 1.2090  | 79.87  | 0.0469       |
| Propane     | 3.015   | 0.8320  | 75.86  | 0.0459       |
| Iso-Butane  | 0.333   | 0.1090  | 10.83  | 0.0067       |
| N-Butane    | 1.135   | 0.3580  | 37.03  | 0.0228       |
| I-Pentane   | 0.315   | 0.1150  | 12.60  | 0.0078       |
| N-Pentane   | 0.340   | 0.1230  | 13.63  | 0.0085       |
| Hexane Plus | 0.890   | 0.3970  | 46.91  | 0.0295       |
| Total       | 100.000 | 14.9320 | 600.54 | 0.9028       |

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

\*\*@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0016

BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 602.9

BTU/CU.FT (WET) CORRECTED FOR (1/Z): 592.4

REAL SPECIFIC GRAVITY: 0.9039

GPM, BTU, and SPG calculations as shown  
above are based on current GPA factors.

DRY BTU @ 14.650: 599.6

DRY BTU @ 14.696: 601.5

DRY BTU @ 14.730: 602.9

DRY BTU @ 15.025: 615.0

CYLINDER #: 6014

CYLINDER PRESSURE: 72 PSIG

DATE RUN: 10/5/15 9:06 AM

ANALYSIS RUN BY: JENNIFER DEAN



2030 Afton Place  
Farmington, NM 87401  
(505) 325-6622

Analysis No: EN150233  
Cust No: 73500-14670

### Well/Lease Information

Customer Name: ENERGEN RESOURCES CORP.  
Well Name: WO HUGHES #5; WH  
County/State: RIO ARRIBA  
Location:  
Field:  
Formation: GL/DK  
Cust. Stn. No.:

Source: WELLHEAD  
Pressure: 55 PSIA  
Sample Temp: DEG. F  
Well Flowing: N  
Date Sampled: 10/19/2015  
Sampled By: JASON PEACE  
Foreman/Engr.:

Remarks:

### Analysis

| Component:: | Mole%:  | **GPM:  | *BTU:  | *SP Gravity: |
|-------------|---------|---------|--------|--------------|
| Nitrogen    | 63.992  | 7.0460  | 0.00   | 0.6189       |
| CO2         | 0.551   | 0.0940  | 0.00   | 0.0084       |
| Methane     | 27.967  | 4.7450  | 282.47 | 0.1549       |
| Ethane      | 3.589   | 0.9610  | 63.52  | 0.0373       |
| Propane     | 2.434   | 0.6710  | 61.24  | 0.0371       |
| Iso-Butane  | 0.233   | 0.0760  | 7.58   | 0.0047       |
| N-Butane    | 0.696   | 0.2200  | 22.71  | 0.0140       |
| I-Pentane   | 0.137   | 0.0500  | 5.48   | 0.0034       |
| N-Pentane   | 0.132   | 0.0480  | 5.29   | 0.0033       |
| Hexane Plus | 0.269   | 0.1200  | 14.18  | 0.0089       |
| Total       | 100.000 | 14.0310 | 462.46 | 0.8908       |

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

\*\*@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0011  
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 464.0  
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 455.9  
REAL SPECIFIC GRAVITY: 0.8914

GPM, BTU, and SPG calculations as shown  
above are based on current GPA factors.

DRY BTU @ 14.650: 461.5  
DRY BTU @ 14.696: 462.9  
DRY BTU @ 14.730: 464.0  
DRY BTU @ 15.025: 473.3

CYLINDER #: 5021  
CYLINDER PRESSURE: 62 PSIG  
DATE RUN: 10/20/15 8:26 AM  
ANALYSIS RUN BY: Shyann Elledge



2030 Afton Place  
Farmington, NM 87401  
(505) 325-6622

Analysis No: EN150230  
Cust No: 73500-14665

### Well/Lease Information

Customer Name: ENERGEN RESOURCES CORP.  
Well Name: WO HUGHES #6; WHD  
County/State: RIO ARRIBA  
Location:  
Field:  
Formation: GL/DK  
Cust. Str. No.:

Source: WELLHEAD  
Pressure: 30 PSIG  
Sample Temp: DEG. F  
Well Flowing: Y  
Date Sampled: 10/12/2015  
Sampled By: JASON PEACE  
Foreman/Engr.: BILLY STALCUP

Remarks:

### Analysis

| Component:: | Mole%:  | **GPM:  | *BTU:  | *SP Gravity: |
|-------------|---------|---------|--------|--------------|
| Nitrogen    | 42.042  | 4.6330  | 0.00   | 0.4066       |
| CO2         | 0.439   | 0.0750  | 0.00   | 0.0067       |
| Methane     | 43.422  | 7.3730  | 438.56 | 0.2405       |
| Ethane      | 8.043   | 2.1550  | 142.34 | 0.0835       |
| Propane     | 4.053   | 1.1180  | 101.98 | 0.0617       |
| Iso-Butane  | 0.410   | 0.1340  | 13.33  | 0.0082       |
| N-Butane    | 0.878   | 0.2770  | 28.64  | 0.0176       |
| I-Pentane   | 0.174   | 0.0640  | 6.96   | 0.0043       |
| N-Pentane   | 0.152   | 0.0550  | 6.09   | 0.0038       |
| Hexane Plus | 0.387   | 0.1730  | 20.40  | 0.0128       |
| Total       | 100.000 | 16.0570 | 758.31 | 0.8458       |

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

\*\*@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0019  
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 761.5  
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 748.2  
REAL SPECIFIC GRAVITY: 0.8471

GPM, BTU, and SPG calculations as shown  
above are based on current GPA factors.

DRY BTU @ 14.650: 757.4  
DRY BTU @ 14.696: 759.7  
DRY BTU @ 14.730: 761.5  
DRY BTU @ 15.025: 776.8

CYLINDER #: 7038  
CYLINDER PRESSURE: 68 PSIG  
DATE RUN: 10/13/15 8:22 AM  
ANALYSIS RUN BY: Shyann Elledge

**Stimulated Well: Many Canyons 24-03 08 #4H (API 30-039-31309)**

[illegible]

OIL CONS. DIV DIST. 3

OCT 21 2015