



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

Analysis No: GW180009  
Cust No: 33050-10360

### Well/Lease Information

Customer Name: GREAT WESTERN DRILLING  
Well Name: ATLANTIC A 101; TBG  
County/State: SAN JUAN NM  
Location:  
Field:  
Formation: BD  
Cust. Stn. No.: API 30-045-25340

Source: TUBING  
Well Flowing: Y  
Pressure: 77 PSIG  
Flow Temp: 55 DEG. F  
Ambient Temp: 47 DEG. F  
Flow Rate: 1 MCF/D  
Sample Method: Purge & Fill  
Sample Date: 11/19/2018  
Sample Time: 1.50 PM  
Sampled By: CULLAN KELLER  
Sampled by (CO): GREAT WESTERN

Heat Trace: N  
Remarks:

NMOC  
DEC 04 2018  
DISTRICT III

### Analysis

| Component:: | Mole%:   | Unnormalized %: | **GPM:  | *BTU:  | *SP Gravity: |
|-------------|----------|-----------------|---------|--------|--------------|
| Nitrogen    | 0.3852   | 0.3894          | 0.0420  | 0.00   | 0.0037       |
| CO2         | 2.9920   | 3.0247          | 0.5120  | 0.00   | 0.0455       |
| Methane     | 94.1353  | 95.1655         | 15.9900 | 950.77 | 0.5214       |
| Ethane      | 2.2363   | 2.2608          | 0.5990  | 39.58  | 0.0232       |
| Propane     | 0.1359   | 0.1374          | 0.0380  | 3.42   | 0.0021       |
| Iso-Butane  | 0.0394   | 0.0398          | 0.0130  | 1.28   | 0.0008       |
| N-Butane    | 0.0148   | 0.0150          | 0.0050  | 0.48   | 0.0003       |
| I-Pentane   | 0.0094   | 0.0095          | 0.0030  | 0.38   | 0.0002       |
| N-Pentane   | 0.0032   | 0.0032          | 0.0010  | 0.13   | 0.0001       |
| Hexane Plus | 0.0485   | 0.0490          | 0.0220  | 2.56   | 0.0016       |
| Total       | 100.0000 | 101.0943        | 17.2250 | 998.59 | 0.5989       |

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

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

COMPRESSIBILITY FACTOR (1/Z): 1.0022  
BTU/CU.FT IDEAL: 1000.9  
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1003.1  
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 985.6  
DRY BTU @ 15.025: 1023.2  
REAL SPECIFIC GRAVITY: 0.6

CYLINDER #: 4201  
CYLINDER PRESSURE: 62 PSIG  
ANALYSIS DATE: 11/27/2018  
ANALYSIS TIME: 02:38:49 PM  
ANALYSIS RUN BY: RICHARD WILSON

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

GPA Standard: GPA-2261

GC: Danalyzer Model 500

Last Cal/Verify: 11/28/2018

GC Method: C6+ Gas



GREAT WESTERN DRILLING  
WELL ANALYSIS COMPARISON

Lease: ATLANTIC A 101; TBG  
Strn. No.: API 30-045-25340  
Mtr. No.:

TUBING  
BD

11/28/2018  
33050-10360

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|            |            |            |
|------------|------------|------------|
| Smpl Date: | 11/19/2018 | 10/25/2017 |
| Test Date: | 11/27/2018 | 10/25/2017 |
| Run No:    | GW180009   | GW170039   |
| Nitrogen:  | 0.3852     | 0.3793     |
| CO2:       | 2.9920     | 3.0140     |
| Methane:   | 94.1353    | 94.0492    |
| Ethane:    | 2.2363     | 2.2551     |
| Propane:   | 0.1359     | 0.1399     |
| I-Butane:  | 0.0394     | 0.0402     |
| N-Butane:  | 0.0148     | 0.0156     |
| I-Pentane: | 0.0094     | 0.0097     |
| N-Pentane: | 0.0032     | 0.0028     |
| Hexane+:   | 0.0485     | 0.0942     |
| BTU:       | 1003.1     | 1005.1     |
| GPM:       | 17.2250    | 17.2400    |
| SPG:       | 0.6000     | 0.6016     |



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

Analysis No: GW180008  
Cust No: 33050-10365

### Well/Lease Information

Customer Name: GREAT WESTERN DRILLING  
Well Name: ATLANTIC A 101; CSG  
County/State: SAN JUAN NM  
Location:  
Field:  
Formation: BD  
Cust. Stn. No.: API 30-045-25340

Source: CASING  
Well Flowing: Y  
Pressure: 77 PSIG  
Flow Temp: 55 DEG. F  
Ambient Temp: 47 DEG. F  
Flow Rate: 1 MCF/D  
Sample Method: Purge & Fill  
Sample Date: 11/19/2018  
Sample Time: 1.40 PM  
Sampled By: CULLAN KELLER  
Sampled by (CO): GREAT WESTERN

Heat Trace: N  
Remarks:

### Analysis

| Component:: | Mole%:   | Unnormalized %: | **GPM:  | *BTU:  | *SP Gravity: |
|-------------|----------|-----------------|---------|--------|--------------|
| Nitrogen    | 0.3796   | 0.3726          | 0.0420  | 0.00   | 0.0037       |
| CO2         | 2.9953   | 2.9400          | 0.5120  | 0.00   | 0.0455       |
| Methane     | 94.0850  | 92.3483         | 15.9810 | 950.26 | 0.5211       |
| Ethane      | 2.2609   | 2.2192          | 0.6060  | 40.01  | 0.0235       |
| Propane     | 0.1475   | 0.1448          | 0.0410  | 3.71   | 0.0022       |
| Iso-Butane  | 0.0412   | 0.0404          | 0.0140  | 1.34   | 0.0008       |
| N-Butane    | 0.0175   | 0.0172          | 0.0060  | 0.57   | 0.0004       |
| I-Pentane   | 0.0102   | 0.0100          | 0.0040  | 0.41   | 0.0003       |
| N-Pentane   | 0.0033   | 0.0032          | 0.0010  | 0.13   | 0.0001       |
| Hexane Plus | 0.0595   | 0.0584          | 0.0270  | 3.14   | 0.0020       |
| Total       | 100.0000 | 98.1541         | 17.2340 | 999.57 | 0.5995       |

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

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

COMPRESSIBILITY FACTOR (1/Z): 1.0022  
BTU/CU.FT IDEAL: 1001.9  
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1004.1  
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 986.6  
DRY BTU @ 15.025: 1024.2  
REAL SPECIFIC GRAVITY: 0.6006

CYLINDER #: 4088  
CYLINDER PRESSURE: 65 PSIG  
ANALYSIS DATE: 11/27/2018  
ANALYSIS TIME: 02:36:13 PM  
ANALYSIS RUN BY: PATRICIA KING

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

GPA Standard: GPA-2261

GC: Danalyzer Model 500

Last Cal/Verify: 11/28/2018

GC Method: C6+ Gas



GREAT WESTERN DRILLING  
WELL ANALYSIS COMPARISON

Lease: ATLANTIC A 101; CSG  
Stn. No.: API 30-045-25340  
Mtr. No.:

CASING  
BD

11/28/2018  
33050-10365

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|            |            |            |
|------------|------------|------------|
| Smpl Date: | 11/19/2018 | 10/25/2017 |
| Test Date: | 11/27/2018 | 10/25/2017 |
| Run No:    | GW180008   | GW170038   |
| Nitrogen:  | 0.3796     | 0.3788     |
| CO2:       | 2.9953     | 3.0182     |
| Methane:   | 94.0850    | 94.0516    |
| Ethane:    | 2.2609     | 2.2565     |
| Propane:   | 0.1475     | 0.1425     |
| I-Butane:  | 0.0412     | 0.0405     |
| N-Butane:  | 0.0175     | 0.0166     |
| I-Pentane: | 0.0102     | 0.0100     |
| N-Pentane: | 0.0033     | 0.0030     |
| Hexane+:   | 0.0595     | 0.0823     |
| BTU:       | 1004.1     | 1004.7     |
| GPM:       | 17.2340    | 17.2380    |
| SPG:       | 0.6006     | 0.6014     |



2030 Afton Place  
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(505) 325-6622

Analysis No: GW180007  
Cust No: 33050-10125

### Well/Lease Information

Customer Name: GREAT WESTERN DRILLING  
Well Name: ATLANTIC A 101 BHD  
County/State: SAN JUAN  
Location:  
Field:  
Formation: BASIN DAKOTA  
Cust. Stn. No.: 94574

Source: BRADENHEAD  
Well Flowing: Y  
Pressure: 77 PSIG  
Flow Temp: 55 DEG. F  
Ambient Temp: 45 DEG. F  
Flow Rate: 1 MCF/D  
Sample Method: Purge & Fill  
Sample Date: 11/19/2018  
Sample Time: 1.30 PM  
Sampled By: CULLAN KELLER  
Sampled by (CO): GREAT WESTERN

Heat Trace: N  
Remarks:

### Analysis

| Component:: | Mole%:   | Unnormalized %: | **GPM:  | *BTU:   | *SP Gravity: |
|-------------|----------|-----------------|---------|---------|--------------|
| Nitrogen    | 0.5847   | 0.5957          | 0.0640  | 0.00    | 0.0057       |
| CO2         | 0.0030   | 0.0031          | 0.0010  | 0.00    | 0.0000       |
| Methane     | 90.2547  | 91.9454         | 15.3370 | 911.57  | 0.4999       |
| Ethane      | 5.6714   | 5.7776          | 1.5200  | 100.37  | 0.0589       |
| Propane     | 2.1049   | 2.1443          | 0.5810  | 52.96   | 0.0320       |
| Iso-Butane  | 0.3537   | 0.3603          | 0.1160  | 11.50   | 0.0071       |
| N-Butane    | 0.5023   | 0.5117          | 0.1590  | 16.39   | 0.0101       |
| I-Pentane   | 0.1725   | 0.1757          | 0.0630  | 6.90    | 0.0043       |
| N-Pentane   | 0.1156   | 0.1178          | 0.0420  | 4.63    | 0.0029       |
| Hexane Plus | 0.2372   | 0.2416          | 0.1060  | 12.50   | 0.0079       |
| Total       | 100.0000 | 101.8732        | 17.9890 | 1116.83 | 0.6288       |

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

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

COMPRESSIBILITY FACTOR (1/Z): 1.0026  
BTU/CU.FT IDEAL: 1119.4  
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1122.3  
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1102.8  
DRY BTU @ 15.025: 1144.8  
REAL SPECIFIC GRAVITY: 0.6301

CYLINDER #: 6125  
CYLINDER PRESSURE: 191 PSIG  
ANALYSIS DATE: 11/27/2018  
ANALYSIS TIME: 02:26:39 PM  
ANALYSIS RUN BY: RICHARD WILSON

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

GPA Standard: GPA-2261

GC: Danalyzer Model 500

Last Cal/Verify: 11/28/2018

GC Method: C6+ Gas



GREAT WESTERN DRILLING  
WELL ANALYSIS COMPARISON

Lease: ATLANTIC A 101 BHD  
Stn. No.: 94574  
Mtr. No.:

BRADENHEAD  
BASIN DAKOTA

11/28/2018  
33050-10125

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|            |            |            |            |
|------------|------------|------------|------------|
| Smpl Date: | 11/19/2018 | 10/25/2017 | 09/04/2014 |
| Test Date: | 11/27/2018 | 10/25/2017 | 09/04/2014 |
| Run No:    | GW180007   | GW170037   | GW140011   |
| Nitrogen:  | 0.5847     | 0.5860     | 0.4150     |
| CO2:       | 0.0030     | 0.0031     | 0.0110     |
| Methane:   | 90.2547    | 90.1723    | 90.2839    |
| Ethane:    | 5.6714     | 5.7064     | 5.7251     |
| Propane:   | 2.1049     | 2.1338     | 2.1310     |
| I-Butane:  | 0.3537     | 0.3612     | 0.3590     |
| N-Butane:  | 0.5023     | 0.5109     | 0.5080     |
| I-Pentane: | 0.1725     | 0.1755     | 0.1800     |
| N-Pentane: | 0.1156     | 0.1156     | 0.1240     |
| Hexane+:   | 0.2372     | 0.2352     | 0.2630     |
| BTU:       | 1122.3     | 1123.4     | 1126.6     |
| GPM:       | 17.9890    | 17.9980    | 18.0230    |
| SPG:       | 0.6301     | 0.6308     | 0.6312     |