



GCU 133 E  
30-045-25234  
Bradenhead Sample

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

Analysis No: SO180094  
Cust No: 15950-10900

### Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT  
Well Name: GCU 133E; BHD  
County/State: SAN JUAN NM  
Location:  
Field:  
Formation: PC

Cust. Stn. No.:  
API 3004525234

NMOC  
FEB 13 2019  
DISTRICT III

Source: BRADENHEAD  
Well Flowing: Y  
Pressure: 146 PSIA  
Flow Temp: DEG. F  
Ambient Temp: 66 DEG. F  
Flow Rate: MCF/D  
Sample Method: Purge & Fill  
Sample Date: 07/13/2018  
Sample Time: 6:57 AM  
Sampled By: SCOTT WILLARD  
Sampled by (CO): PESCO

Heat Trace: N  
Remarks:

### Analysis

| Component:: | Mole%:   | Unnormalized %: | **GPM:  | *BTU:   | *SP Gravity: |
|-------------|----------|-----------------|---------|---------|--------------|
| Nitrogen    | 0.3112   | 0.3146          | 0.0340  | 0.00    | 0.0030       |
| CO2         | 0.0047   | 0.0048          | 0.0010  | 0.00    | 0.0001       |
| Methane     | 85.7029  | 86.6348         | 14.5710 | 865.60  | 0.4747       |
| Ethane      | 8.4234   | 8.5150          | 2.2590  | 149.07  | 0.0875       |
| Propane     | 3.3343   | 3.3706          | 0.9210  | 83.89   | 0.0508       |
| Iso-Butane  | 0.5068   | 0.5123          | 0.1660  | 16.48   | 0.0102       |
| N-Butane    | 0.8505   | 0.8597          | 0.2690  | 27.75   | 0.0171       |
| I-Pentane   | 0.2586   | 0.2614          | 0.0950  | 10.35   | 0.0064       |
| N-Pentane   | 0.1949   | 0.1970          | 0.0710  | 7.81    | 0.0049       |
| Hexane Plus | 0.4127   | 0.4172          | 0.1850  | 21.75   | 0.0137       |
| Total       | 100.0000 | 101.0874        | 18.5720 | 1182.70 | 0.6682       |

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

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

COMPRESSIBILITY FACTOR (1/Z): 1.0031  
BTU/CU.FT IDEAL: 1185.4  
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1189.0  
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1168.3  
DRY BTU @ 15.025: 1212.8  
REAL SPECIFIC GRAVITY: 0.6699

CYLINDER #: 7061  
CYLINDER PRESSURE: 135 PSIG  
ANALYSIS DATE: 07/24/2018  
ANALYSIS TIME: 09:05:24 AM  
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

GC Method: C6+ Gas

Last Cal/Verify: 07/26/2018



BP - SOUTH BHD PROJECT  
WELL ANALYSIS COMPARISON

Lease: GCU 133E; BHD  
Stn. No.:  
Mtr. No.: API 3004525234

BRADENHEAD  
PC

07/26/2018  
15950-10900

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Smpl Date: 07/13/2018  
Test Date: 07/24/2018  
Run No: SO180094  
  
Nitrogen: 0.3112  
CO2: 0.0047  
Methane: 85.7029  
Ethane: 8.4234  
Propane: 3.3343  
I-Butane: 0.5068  
N-Butane: 0.8505  
I-Pentane: 0.2586  
N-Pentane: 0.1949  
Hexane+: 0.4127  
  
BTU: 1189.0  
GPM: 18.5720  
SPG: 0.6699



GCU 133E  
30-045-25234  
Casing Sample

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

Analysis No: SO180095  
Cust No: 15950-10905

### Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT  
Well Name: GCU 133E; CSG  
County/State: SAN JUAN NM  
Location:  
Field:  
Formation: PC  
Cust. Stn. No.:

API 3004525234

Heat Trace: N

Remarks:

Source: CASING  
Well Flowing: Y  
Pressure: 60 PSIA  
Flow Temp: DEG. F  
Ambient Temp: 65 DEG. F  
Flow Rate: MCF/D  
Sample Method: Purge & Fill  
Sample Date: 07/13/2018  
Sample Time: 7.05 AM  
Sampled By: SCOTT WILLARD  
Sampled by (CO): PESCO

NMOC

FEB 13 2019

DISTRICT III

### Analysis

| Component:: | Mole%:   | Unnormalized %: | **GPM:  | *BTU:   | *SP Gravity: |
|-------------|----------|-----------------|---------|---------|--------------|
| Nitrogen    | 0.3265   | 0.3268          | 0.0360  | 0.00    | 0.0032       |
| CO2         | 1.1335   | 1.1346          | 0.1940  | 0.00    | 0.0172       |
| Methane     | 82.0468  | 82.1264         | 13.9570 | 828.67  | 0.4545       |
| Ethane      | 8.3383   | 8.3464          | 2.2380  | 147.56  | 0.0866       |
| Propane     | 3.8931   | 3.8969          | 1.0760  | 97.95   | 0.0593       |
| Iso-Butane  | 0.6038   | 0.6044          | 0.1980  | 19.63   | 0.0121       |
| N-Butane    | 1.3221   | 1.3234          | 0.4180  | 43.13   | 0.0265       |
| I-Pentane   | 0.4734   | 0.4739          | 0.1740  | 18.94   | 0.0118       |
| N-Pentane   | 0.4622   | 0.4626          | 0.1680  | 18.53   | 0.0115       |
| Hexane Plus | 1.4003   | 1.4017          | 0.6270  | 73.81   | 0.0463       |
| Total       | 100.0000 | 100.0971        | 19.0860 | 1248.23 | 0.7290       |

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

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

COMPRESSIBILITY FACTOR (1/Z): 1.0037  
BTU/CU.FT IDEAL: 1251.1  
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1255.8  
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1233.9  
DRY BTU @ 15.025: 1281.0  
REAL SPECIFIC GRAVITY: 0.7314

CYLINDER #: 7082  
CYLINDER PRESSURE: 58 PSIG  
ANALYSIS DATE: 07/23/2018  
ANALYSIS TIME: 03:48:07 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

GC Method: C6+ Gas

Last Cal/Verify: 07/26/2018



BP - SOUTH BHD PROJECT  
WELL ANALYSIS COMPARISON

Lease: GCU 133E; CSG  
Stn. No.:  
Mtr. No.: API 3004525234

CASING  
PC

07/26/2018  
15950-10905

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Smpl Date: 07/13/2018  
Test Date: 07/23/2018  
Run No: SO180095  
Nitrogen: 0.3265  
CO2: 1.1335  
Methane: 82.0468  
Ethane: 8.3383  
Propane: 3.8931  
I-Butane: 0.6038  
N-Butane: 1.3221  
I-Pentane: 0.4734  
N-Pentane: 0.4622  
Hexane+: 1.4003  
BTU: 1255.8  
GPM: 19.0860  
SPG: 0.7314



GCU 133 E  
30-045-25234  
Tubing Sample

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

Analysis No: SO180096  
Cust No: 15950-10910

### Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT  
Well Name: GCU 133E; TBG  
County/State: SAN JUAN NM  
Location:  
Field:  
Formation: PC  
Cust. Stn. No.:  
API 3004525234

Source: TUBING  
Well Flowing: Y  
Pressure: 61 PSIA  
Flow Temp: DEG. F  
Ambient Temp: 65 DEG. F  
Flow Rate: MCF/D  
Sample Method: Purge & Fill  
Sample Date: 07/13/2018  
Sample Time: 7.14 AM  
Sampled By: SCOTT WILLARD  
Sampled by (CO): PESCO

Heat Trace: N  
Remarks:

NMOC  
FEB 13 2019  
DISTRICT III

### Analysis

| Component:: | Mole%:   | Unnormalized %: | **GPM:  | *BTU:   | *SP Gravity: |
|-------------|----------|-----------------|---------|---------|--------------|
| Nitrogen    | 0.3241   | 0.3252          | 0.0360  | 0.00    | 0.0031       |
| CO2         | 1.3726   | 1.3772          | 0.2350  | 0.00    | 0.0209       |
| Methane     | 84.4625  | 84.7453         | 14.3640 | 853.07  | 0.4678       |
| Ethane      | 7.5742   | 7.5996          | 2.0320  | 134.04  | 0.0786       |
| Propane     | 2.9695   | 2.9794          | 0.8210  | 74.72   | 0.0452       |
| Iso-Butane  | 0.4794   | 0.4810          | 0.1570  | 15.59   | 0.0096       |
| N-Butane    | 0.8934   | 0.8964          | 0.2830  | 29.15   | 0.0179       |
| I-Pentane   | 0.3107   | 0.3117          | 0.1140  | 12.43   | 0.0077       |
| N-Pentane   | 0.2837   | 0.2846          | 0.1030  | 11.37   | 0.0071       |
| Hexane Plus | 1.3299   | 1.3344          | 0.5950  | 70.10   | 0.0440       |
| Total       | 100.0000 | 100.3348        | 18.7400 | 1200.47 | 0.7020       |

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

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

COMPRESSIBILITY FACTOR (1/Z): 1.0034  
BTU/CU.FT IDEAL: 1203.2  
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1207.3  
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1186.3  
DRY BTU @ 15.025: 1231.5  
REAL SPECIFIC GRAVITY: 0.7042

CYLINDER #: 7056  
CYLINDER PRESSURE: 60 PSIG  
ANALYSIS DATE: 07/23/2018  
ANALYSIS TIME: 03:16:06 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

GC Method: C6+ Gas

Last Cal/Verify: 07/26/2018



BP - SOUTH BHD PROJECT  
WELL ANALYSIS COMPARISON

Lease: GCU 133E; TBG  
Stn. No.:  
Mtr. No.: API 3004525234

TUBING  
PC

07/26/2018  
15950-10910

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Smpl Date: 07/13/2018  
Test Date: 07/23/2018  
Run No: SO180096  
Nitrogen: 0.3241  
CO2: 1.3726  
Methane: 84.4625  
Ethane: 7.5742  
Propane: 2.9695  
I-Butane: 0.4794  
N-Butane: 0.8934  
I-Pentane: 0.3107  
N-Pentane: 0.2837  
Hexane+: 1.3299  
BTU: 1207.3  
GPM: 18.7400  
SPG: 0.7042