



NEW MEXICO ENERGY, MINERALS  
AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION  
AZTEC DISTRICT OFFICE  
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<http://www.emnrd.state.nm.us/ocd/>

OIL CONS. DIV DIST. 3

BRADENHEAD TEST REPORT  
(Submit 2 copies to above address)

DEC 18 2015

Date of Test 6/25/15 Operator BP America Production Company API # 3004525203

Property Name GCU 186E-DK Location: Unit N Section 33 Township 28 Range 12  
(Well Name and Number)

Pressure (Shut-in or Producing) Tubing 150 Intermediate - Casing 162 Bradenhead 73

OPEN BRADENHEAD AND INTERMEDIATE TO ATMOSPHERE INDIVIDUALLY FOR 15 MINUTES EACH

| Time        | Bradenhead     |                   |                                                                                    | Intermediate                                                                       |                                                                                    | Bradenhead Intermediate<br>Flowed Flowed |                                                                                      |
|-------------|----------------|-------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------|--------------------------------------------------------------------------------------|
|             | BH<br>Blowdown | Casing<br>Monitor | Intermediate<br>Monitor                                                            | Intermediate<br>Blowdown                                                           | Casing<br>Monitor                                                                  |                                          |                                                                                      |
| 5 minutes   | <u>Ø</u>       | <u>1166</u>       |  |  |  | Steady Flow                              |  |
| 10 minutes  | <u>Ø</u>       | <u>162</u>        |                                                                                    |                                                                                    |                                                                                    | Surges                                   |                                                                                      |
| 15 minutes  | <u>Ø</u>       | <u>162</u>        |                                                                                    |                                                                                    |                                                                                    | Down to Nothing                          |                                                                                      |
| 20 minutes  |                |                   |                                                                                    |                                                                                    |                                                                                    | No Flow                                  |                                                                                      |
| 25 minutes  |                |                   |                                                                                    |                                                                                    |                                                                                    | Gas                                      |                                                                                      |
| 30 minutes  |                |                   |                                                                                    |                                                                                    |                                                                                    | Gas and Water                            |                                                                                      |
| 5 minute SI | <u>Ø</u>       | <u>1163</u>       |                                                                                    |                                                                                    |                                                                                    | Water                                    |                                                                                      |

If bradenhead flowed water, check all of the descriptions that apply below:

Clear        Fresh        Salty        Sulfur        Black       

5 Minute Shut-in Bradenhead Ø Intermediate -

REMARKS:

Blew from 1" valve BH blew down to nothing in 3 min.

By  Witness       

(Position)



OIL CONS. DIV DIST. 3

DEC 18 2015

UPI 30-045-2520

Casing

## Gas Analysis Certificate

GPA Standard 2261-13

Acquisition Method Name au\_report\_150\_C6+  
Last calibration date 7/10/2015 10:21:38 AM

|                    |               |                |                  |
|--------------------|---------------|----------------|------------------|
| Client:            | BP            | Project #:     | 03143-0880       |
| Site Name:         | GCU 186E      | Meter ID:      | 3004525203 (CSG) |
| Sampled by:        | Daniel F.     | Date Sampled   | 06-25-15         |
| Analyzed by:       | Logan Richter | Date Received: | 07-13-15         |
| Sample Pressure:   | 162 psig      | Date Analyzed: | 07-15-15         |
| Sample Temperature | N/R           | Analysis Time: | Standard         |

## Component Results (14.696)

| Name           | Qty (Norm)<br>[Mol %] | Wt Percent<br>(%) | GPM    |
|----------------|-----------------------|-------------------|--------|
| Helium         | 0.075                 | 0.015             | 0.008  |
| Oxygen         | 0.011                 | 0.018             | 0.001  |
| Nitrogen       | 0.752                 | 1.071             | 0.083  |
| Carbon Dioxide | 0.859                 | 1.922             | 0.147  |
| Methane        | 84.972                | 69.321            | 14.413 |
| Ethane         | 8.207                 | 12.550            | 2.196  |
| Propane        | 2.577                 | 5.779             | 0.710  |
| i-Butane       | 0.446                 | 1.319             | 0.146  |
| n-Butane       | 0.694                 | 2.052             | 0.219  |
| i-Pentane      | 0.334                 | 1.226             | 0.122  |
| n-Pentane      | 0.283                 | 1.040             | 0.103  |
| C6+            | 0.789                 | 3.687             | 0.344  |
|                | 100.000               | 100.000           | 18.492 |

## Calculations at Pressure Base 14.696

|                                     |         |                                     |         |
|-------------------------------------|---------|-------------------------------------|---------|
| Compressibility (Z) (Dry Gas)       | 0.99692 | C2+                                 | 3.841   |
| Density (G) (Dry Gas)               | 0.67931 | C3+                                 | 1.645   |
| Component MW Total                  | 19.66   | C5+                                 | 0.569   |
| Heating Value (Dry Ideal) Total BTU | 1170.66 | Heating Value (Sat Ideal) Total BTU | 1150.23 |
| Heating Value (Dry Real) Total BTU  | 1174.27 | Heating Value (Sat Real) Total BTU  | 1153.66 |

10/20/2015



API 30-045-25203  
Bradenhead

# Gas Analysis Certificate

GPA Standard 2261-13

Acquisition Method Name au\_report\_150\_C6+

Last calibration date 7/10/2015 10:21:38 AM

|                    |               |                |                  |
|--------------------|---------------|----------------|------------------|
| Client:            | BP            | Project #:     | 03143-0880       |
| Site Name:         | GCU 186E      | Meter ID:      | 3004525203 (BHD) |
| Sampled by:        | Daniel F.     | Date Sampled   | 06-25-15         |
| Analyzed by:       | Logan Richter | Date Received: | 07-13-15         |
| Sample Pressure:   | 60 psig       | Date Analyzed: | 07-15-15         |
| Sample Temperature | N/R           | Analysis Time: | Standard         |

## Component Results (14.696)

| Name           | Qty (Norm)<br>[Mol %] | Wt Percent<br>(%) | GPM    |
|----------------|-----------------------|-------------------|--------|
| Helium         | 0.011                 | 0.002             | 0.001  |
| Oxygen         | 0.007                 | 0.012             | 0.001  |
| Nitrogen       | 0.585                 | 0.897             | 0.064  |
| Carbon Dioxide | 0.000                 | 0.000             | 0.000  |
| Methane        | 89.761                | 78.866            | 15.218 |
| Ethane         | 5.870                 | 9.666             | 1.570  |
| Propane        | 2.414                 | 5.829             | 0.665  |
| i-Butane       | 0.465                 | 1.482             | 0.152  |
| n-Butane       | 0.506                 | 1.610             | 0.159  |
| i-Pentane      | 0.161                 | 0.637             | 0.059  |
| n-Pentane      | 0.101                 | 0.398             | 0.037  |
| C6+            | 0.119                 | 0.599             | 0.052  |
|                | 100.000               | 100.000           | 17.979 |

## Calculations at Pressure Base 14.696

|                                     |         |                                     |         |
|-------------------------------------|---------|-------------------------------------|---------|
| Compressibility (Z) (Dry Gas)       | 0.99737 | C2+                                 | 2.694   |
| Density (G) (Dry Gas)               | 0.63047 | C3+                                 | 1.124   |
| Component MW Total                  | 18.26   | C5+                                 | 0.147   |
| Heating Value (Dry Ideal) Total BTU | 1119.43 | Heating Value (Sat Ideal) Total BTU | 1099.89 |
| Heating Value (Dry Real) Total BTU  | 1122.38 | Heating Value (Sat Real) Total BTU  | 1102.69 |

RGR

10/20/2015

API 30-045-25203

OIL CONS. DIV DIST. 3

DEC 18 2015

**GCU 186E DK**

Dakota

API # 30-045-25203

Unit N Sec 33 T28N R 12W  
San Juan County, New Mexico**Well History**

Spud date 12/15/1981

Completion Date: 2/15/1982

6/13/11: Fluid Level shot shows fluid at 5693'.

Fluid is 239' over top perf.

2/24/2012: Run Impression block, tag @ 5967'

Couldn't drop out of tubing. Broach Tubing, tag nipple @ 5927' Set 2 Slip Stop @ 5922'

**Formation Tops**

|                 |       |
|-----------------|-------|
| Fruitland       | 990'  |
| Pictured Cliffs | 1340' |
| Lewis Shale     | 1550' |
| Cliffhouse      | 2878' |
| Menefee         | 2941' |
| Point Lookout   | 3802' |
| Mancos Shale    | 4126' |
| Gallup          | 4960' |
| Greenhorn       | 5760' |
| Graneros Shale  | 5830' |
| Main Dakota     | 5934' |

GL 5707'  
KB 5720'

TOC: Circulated to surface

**Surface Casing Data**

12-1/4" Hole

8-5/8" 24# casing @ 309'

Cmt'd w/ 315 sacks Class "B" neat cement  
containing 2% CaCl<sub>2</sub>

TOC: Cement circulated to surface during 3rd stage

DV Tool @ 1625'

**Deviation Report**

| Depth | Deviation |
|-------|-----------|
| 310'  | 1/4 deg   |
| 817'  | 1/2 deg   |
| 1317' | 1/2 deg   |
| 1843' | 1/2 deg   |
| 2368' | 3/4 deg   |
| 2920' | 3/4 deg   |
| 3421' | 1 deg     |
| 3865' | 3/4 deg   |
| 4380' | 3/4 deg   |
| 4874' | 1 deg     |
| 5428' | 1 deg     |
| 5784' | 2 deg     |
| 6076' | 1 deg     |

DV Tool @ 4388'

**Tubing Details**

|                                          | Length |
|------------------------------------------|--------|
| Saw Tooth Collar                         | 1      |
| Tubing 2.375" x 1.995" 4.7# J-55 (1jt)   | 32     |
| Seating Nipple                           | 1      |
| Tubing 2.375" x 1.995" 4.7# J-55 (183 j) | 5934   |

**Dakota Perforations (12/1981)**

5932' - 5950' w/ 2 spf

5950' - 5970' w/ 2 spf

5974' - 5988' w/ 2 spf

Frac'd w/ 77,000 gal of frac fluid &  
234,000 lbs 20-40 sand**Production Casing Data**

7-7/8" hole

4-1/2" 10.5# prodn casing @ 6076'

Cemented in 3 stages

**1st stage:** Cmt'd w/ 275 sks class B neat cement containing  
50:50 POZ, 6% gel, 2 lb med tuf plug per sk & 0.8% fluid loss additive  
Tailed in w/ 100 sks class B neat cement**2nd stage:** Cmt'd w/ 480 sks class B neat cement containing  
65:35 POZ, 6% gel, 2 lb med tuf plug per sk & 0.8% fluid loss additive  
Tailed in w/ 100 sks class B neat cement**3rd stage:** Cmt'd w/ 285 sks class B neat cement containing  
65:35 POZ, 6% gel, 2 lb med tuf plug per sk & 0.8% fluid loss additive  
Tailed in w/ 100 sks class B neat cement

Nipple @ 5927'

2-3/8" EOT @ 5968' (12/1981)

PBSD 6036'  
TD 6076'