



GCU 168 E
30-045-24843
Bradenhead Sample

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

Analysis No: SO180181
Cust No: 15950-11335

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: GCU 168E; BHD
County/State: SAN JUAN NM
Location:
Field:
Formation: PC
Cust. Stn. No.: API # 3004524863

Source: BRADENHEAD
Well Flowing: Y
Pressure: 21 PSIA
Flow Temp: DEG. F
Ambient Temp: 74 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 07/27/2018
Sample Time: 8.53 AM
Sampled By: SCOTT WILLARD
Sampled by (CO): PESCO

Heat Trace: N
Remarks:

NMOCO
FEB 13 2019
DISTRICT III

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.9485	0.9265	0.1050	0.00	0.0092
CO2	0.0403	0.0394	0.0070	0.00	0.0006
Methane	94.2497	92.0665	16.0090	951.92	0.5220
Ethane	3.7250	3.6387	0.9980	65.92	0.0387
Propane	0.6473	0.6323	0.1790	16.29	0.0099
Iso-Butane	0.1729	0.1689	0.0570	5.62	0.0035
N-Butane	0.0649	0.0634	0.0210	2.12	0.0013
I-Pentane	0.0421	0.0411	0.0150	1.68	0.0010
N-Pentane	0.0123	0.0120	0.0040	0.49	0.0003
Hexane Plus	0.0970	0.0948	0.0430	5.11	0.0032
Total	100.0000	97.6836	17.4380	1049.16	0.5897

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0022
BTU/CU.FT IDEAL: 1051.6
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1053.9
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1035.6
DRY BTU @ 15.025: 1075.0
REAL SPECIFIC GRAVITY: 0.5908

CYLINDER #: 7082
CYLINDER PRESSURE: 21 PSIG
ANALYSIS DATE: 09/07/2018
ANALYSIS TIME: 10:24:23 AM
ANALYSIS RUN BY: CAMERON MANGAN

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: 09/12/2018



BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease: GCU 168E; BHD
Stn. No.: API # 3004524863
Mtr. No.:

BRADENHEAD
PC

09/12/2018
15950-11335

Smpl Date: 07/27/2018
Test Date: 09/07/2018
Run No: SO180181

Nitrogen: 0.9485
CO2: 0.0403
Methane: 94.2497
Ethane: 3.7250
Propane: 0.6473
I-Butane: 0.1729
N-Butane: 0.0649
I-Pentane: 0.0421
N-Pentane: 0.0123
Hexane+: 0.0970

BTU: 1053.9
GPM: 17.4380
SPG: 0.5908



GCU 168E
30-045-24863
Casing Sample

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

Analysis No: SO180182
Cust No: 15950-11340

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: GCU 168E; CSG
County/State: SAN JUAN NM
Location:
Field:
Formation: PC
Cust. Stn. No.: API # 3004524863

Source: CASING
Well Flowing: Y
Pressure: 30 PSIA
Flow Temp: DEG. F
Ambient Temp: 74 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 07/27/2018
Sample Time: 9.00 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	0.9293	0.9196	0.1030	0.00	0.0090
CO2	0.9410	0.9312	0.1610	0.00	0.0143
Methane	76.1319	75.3373	12.9590	768.93	0.4217
Ethane	10.6865	10.5750	2.8700	189.12	0.1109
Propane	5.7248	5.6651	1.5840	144.04	0.0872
Iso-Butane	0.8134	0.8049	0.2670	26.45	0.0163
N-Butane	1.8031	1.7843	0.5710	58.82	0.0362
I-Pentane	0.5383	0.5327	0.1980	21.54	0.0134
N-Pentane	0.5571	0.5513	0.2030	22.33	0.0139
Hexane Plus	1.8746	1.8550	0.8390	98.81	0.0620
Total	100.0000	98.9564	19.7550	1330.05	0.7849

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0043
BTU/CU.FT IDEAL: 1333.1
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1338.9
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1315.6
DRY BTU @ 15.025: 1365.7
REAL SPECIFIC GRAVITY: 0.788

CYLINDER #: 8002
CYLINDER PRESSURE: 23 PSIG
ANALYSIS DATE: 09/07/2018
ANALYSIS TIME: 08:21:55 AM
ANALYSIS RUN BY: CAMERON MANGAN

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: 09/12/2018

GC Method: C6+ Gas



BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease: GCU 168E; CSG
Stn. No.: API # 3004524863
Mtr. No.:

CASING
PC

09/12/2018
15950-11340

Smpl Date: 07/27/2018
Test Date: 09/07/2018
Run No: SO180182

Nitrogen: 0.9293
CO2: 0.9410
Methane: 76.1319
Ethane: 10.6865
Propane: 5.7248
I-Butane: 0.8134
N-Butane: 1.8031
I-Pentane: 0.5383
N-Pentane: 0.5571
Hexane+: 1.8746

BTU: 1338.9
GPM: 19.7550
SPG: 0.7880



GCU 168E
30-045-24863
Tubing Sample

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

Analysis No: SO180183
Cust No: 15950-11345

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: GCU 168E; TBG
County/State: SAN JUAN NM
Location:
Field:
Formation: PC
Cust. Stn. No.: API # 3004524863

NMOCD
FEB 13 2019
DISTRICT III

Source: TUBING
Well Flowing: Y
Pressure: 23 PSIA
Flow Temp: DEG. F
Ambient Temp: 74 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 07/27/2018
Sample Time: 9.05 AM
Sampled By: SCOTT WILLARD
Sampled by (CO): PESCO

Heat Trace: N
Remarks: PRESSURED WITH HELIUM TO 30 LBS.

Analysis

Component:	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	2.5625	0.8994	0.2830	0.00	0.0248
CO2	0.8909	0.3127	0.1520	0.00	0.0135
Methane	86.2512	30.2735	14.6590	871.14	0.4777
Ethane	5.7973	2.0348	1.5540	102.59	0.0602
Propane	2.3852	0.8372	0.6590	60.01	0.0363
Iso-Butane	0.3519	0.1235	0.1150	11.44	0.0071
N-Butane	0.6242	0.2191	0.1970	20.36	0.0125
I-Pentane	0.1818	0.0638	0.0670	7.27	0.0045
N-Pentane	0.1704	0.0598	0.0620	6.83	0.0042
Hexane Plus	0.7846	0.2754	0.3510	41.36	0.0260
Total	100.0000	35.0992	18.0990	1121.01	0.6669

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0028
BTU/CU.FT IDEAL: 1123.6
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1126.8
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1107.2
DRY BTU @ 15.025: 1149.4
REAL SPECIFIC GRAVITY: 0.6685

CYLINDER #: 7040
CYLINDER PRESSURE: PSIG
ANALYSIS DATE: 09/06/2018
ANALYSIS TIME: 04:31:54 AM
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: 09/12/2018

GC Method: C6+ Gas



BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease: GCU 168E; TBG
Stn. No.: API # 3004524863
Mtr. No.:

TUBING
PC

09/12/2018
15950-11345

Smpl Date: 07/27/2018
Test Date: 09/06/2018
Run No: SO180183

Nitrogen: 2.5625
CO2: 0.8909
Methane: 86.2512
Ethane: 5.7973
Propane: 2.3852
I-Butane: 0.3519
N-Butane: 0.6242
I-Pentane: 0.1818
N-Pentane: 0.1704
Hexane+: 0.7846

BTU: 1126.8
GPM: 18.0990
SPG: 0.6685