



GCU 178E
30-045-24206
Bradenhead Sample

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

Analysis No: SO180097
Cust No: 15950-10915

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: GCU 178E; BHD
County/State: SAN JUAN NM
Location:
Field:
Formation: DK

API 3004526206

Heat Trace: N
Remarks:

Source: BRADENHEAD
Well Flowing: N
Pressure: 39 PSIA
Flow Temp: DEG. F
Ambient Temp: 82 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 07/13/2018
Sample Time: 12.31 PM
Sampled By: E. HAMILTON
Sampled by (CO): PESCO

NMOC
FEB 13 2019
DISTRICT III

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.6093	0.6142	0.0670	0.00	0.0059
CO2	0.0272	0.0274	0.0050	0.00	0.0004
Methane	89.6238	90.3423	15.2310	905.20	0.
Ethane	5.8909	5.9381	1.5790	104.25	0.0612
Propane	2.3188	2.3374	0.6400	58.34	0.
Iso-Butane	0.4536	0.4572	0.1490	14.75	0.0091
N-Butane	0.5238	0.5280	0.1660	17.09	0.0105
I-Pentane	0.1944	0.1960	0.0710	7.78	0.0048
N-Pentane	0.1238	0.1248	0.0450	4.96	0.0031
Hexane Plus	0.2344	0.2363	0.1050	12.36	0.0078
Total	100.0000	100.8017	18.0580	1124.73	0.6345

* 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0027
BTU/CU.FT IDEAL: 1127.3
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1130.4
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1110.7
DRY BTU @ 15.025: 1153.0
REAL SPECIFIC GRAVITY: 0.636

CYLINDER #: 7099
CYLINDER PRESSURE: 35 PSIG
ANALYSIS DATE: 07/24/2018
ANALYSIS TIME: 09:23:03 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

Last Cal/Verify: 07/26/2018

GC Method: C6+ Gas

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BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease: GCU 178E; BHD
Stn. No.:
Mtr. No.: API 3004526206

BRADENHEAD
DK

07/26/2018
15950-10915

Smpl Date: 07/13/2018
Test Date: 07/24/2018
Run No: SO180097

Nitrogen: 0.6093
CO2: 0.0272
Methane: 89.6238
Ethane: 5.8909
Propane: 2.3188
I-Butane: 0.4536
N-Butane: 0.5238
I-Pentane: 0.1944
N-Pentane: 0.1238
Hexane+: 0.2344

BTU: 1130.4
GPM: 18.0580
SPG: 0.6360



GCU 178 E
30-045-26206
Casing Samples

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

Analysis No: SO180098
Cust No: 15950-10920

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: GCU 178E; CSG
County/State: SAN JUAN NM
Location:
Field:
Formation: DK
Cust. Stn. No.:
API 3004526206

Source: CASING
Well Flowing: N
Pressure: 100 PSIA
Flow Temp: DEG. F
Ambient Temp: 82 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 07/13/2018
Sample Time: 12.40 PM
Sampled By: E. HAMILTON
Sampled by (CO): PESCO

Heat Trace: N
Remarks:

FEB 13 2019

DISTRICT III

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.8993	0.8859	0.0990	0.00	0.0087
CO2	0.3803	0.3746	0.0650	0.00	0.0058
Methane	84.7454	83.4837	14.4110	855.93	0.4694
Ethane	8.1781	8.0563	2.1940	144.73	0.0849
Propane	2.7173	2.6768	0.7510	68.37	0.0414
Iso-Butane	0.4614	0.4545	0.1510	15.00	0.0093
N-Butane	0.7392	0.7282	0.2340	24.11	0.0148
I-Pentane	0.3324	0.3275	0.1220	13.30	0.0083
N-Pentane	0.2946	0.2902	0.1070	11.81	0.0073
Hexane Plus	1.2520	1.2334	0.5600	65.99	0.0414
Total	100.0000	98.5111	18.6940	1199.25	0.6913

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0033
BTU/CU.FT IDEAL: 1202.0
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1206.0
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1185.0
DRY BTU @ 15.025: 1230.2
REAL SPECIFIC GRAVITY: 0.6933

CYLINDER #: 7038
CYLINDER PRESSURE: 93 PSIG
ANALYSIS DATE: 07/23/2018
ANALYSIS TIME: 03:53:23 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: 07/26/2018

GC Method: C6+ Gas



BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease: GCU 178E; CSG
Stn. No.:
Mtr. No.: API 3004526206

CASING
DK

07/26/2018
15950-10920

Smpl Date: 07/13/2018
Test Date: 07/23/2018
Run No: SO180098
Nitrogen: 0.8993
CO2: 0.3803
Methane: 84.7454
Ethane: 8.1781
Propane: 2.7173
I-Butane: 0.4614
N-Butane: 0.7392
I-Pentane: 0.3324
N-Pentane: 0.2946
Hexane+: 1.2520
BTU: 1206.0
GPM: 18.6940
SPG: 0.6933



GCU 178E
30-045-26206
Tubing Sample

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

Analysis No: SO180099
Cust No: 15950-10925

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: GCU 178E; TBG
County/State: SAN JUAN NM
Location:
Field:
Formation: DK

Cust. Stn. No.:
API 3004526206

Heat Trace: N
Remarks:

Source: TUBING
Well Flowing: N
Pressure: 101 PSIA
Flow Temp: DEG. F
Ambient Temp: 82 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 07/13/2018
Sample Time: 12.36 PM
Sampled By: E. HAMILTON
Sampled by (CO): PESCO

NMOCB
FEB 13 2019
DISTRICT III

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.8811	0.8847	0.0970	0.00	0.0085
CO2	0.8368	0.8402	0.1430	0.00	0.0127
Methane	84.8631	85.2085	14.4280	857.12	0.4701
Ethane	8.4640	8.4984	2.2700	149.79	0.0879
Propane	2.6831	2.6940	0.7410	67.51	0.0409
Iso-Butane	0.4291	0.4308	0.1410	13.95	0.0086
N-Butane	0.6531	0.6558	0.2060	21.31	0.0131
I-Pentane	0.2436	0.2446	0.0890	9.75	0.0061
N-Pentane	0.1912	0.1920	0.0700	7.66	0.0048
Hexane Plus	0.7549	0.7580	0.3380	39.79	0.0250
Total	100.0000	100.4070	18.5230	1166.88	0.6776

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0031
BTU/CU.FT IDEAL: 1169.6
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1173.2
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1152.8
DRY BTU @ 15.025: 1196.7
REAL SPECIFIC GRAVITY: 0.6794

CYLINDER #: 7076
CYLINDER PRESSURE: 95 PSIG
ANALYSIS DATE: 07/23/2018
ANALYSIS TIME: 02:18:28 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: 07/26/2018

GC Method: C6+ Gas



BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease: GCU 178E; TBG
Stn. No.:
Mtr. No.: API 3004526206

TUBING
DK

07/26/2018
15950-10925

Smpl Date: 07/13/2018
Test Date: 07/23/2018
Run No: SO180099

Nitrogen: 0.8811
CO2: 0.8368
Methane: 84.8631
Ethane: 8.4640
Propane: 2.6831
I-Butane: 0.4291
N-Butane: 0.6531
I-Pentane: 0.2436
N-Pentane: 0.1912
Hexane+: 0.7549

BTU: 1173.2
GPM: 18.5230
SPG: 0.6794