



NMOCD REC'D
10/12/20

Well Name: CASE B 4A; BHD
API #: API # 3004523191
Source: BRADENHEAD
Sample Type: GAS
Analysis No: SO200051
Cust No: 15950-10075

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: CASE B 4A; BHD
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation: FT
Cust. Stn. No.: API # 3004523191

Source: BRADENHEAD
Well Flowing: Y
Pressure: 25 PSIG
Flow Temp: 77.1 DEG. F
Ambient Temp: 72 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 07/15/2020
Sample Time: 8.20 AM
Sampled By: CELIA L.
Sampled by (CO): ABC

Heat Trace: N
Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	22.9715	22.1587	2.5310	0.00	0.2222
CO2	0.0236	0.0228	0.0040	0.00	0.0004
Methane	68.9577	66.5177	11.7100	696.47	0.3820
Ethane	4.8289	4.6580	1.2940	85.46	0.0501
Propane	2.1541	2.0779	0.5940	54.20	0.0328
Iso-Butane	0.4341	0.4187	0.1420	14.12	0.0087
N-Butane	0.4013	0.3871	0.1270	13.09	0.0081
I-Pentane	0.1330	0.1283	0.0490	5.32	0.0033
N-Pentane	0.0538	0.0519	0.0200	2.16	0.0013
Hexane Plus	0.0420	0.0405	0.0190	2.21	0.0014
Total	100.0000	96.4616	16.4900	873.03	0.7102

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0019
BTU/CU.FT IDEAL: 875.0
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 876.7
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 861.4
DRY BTU @ 15.025: 894.3
REAL SPECIFIC GRAVITY: 0.7113

CYLINDER #: 24
CYLINDER PRESSURE: 21 PSIG
ANALYSIS DATE: 07/17/2020
ANALYSIS TIME: 11:57:46 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: 07/22/2020

GC Method: C6+ Gas



BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease:	CASE B 4A; BHD	BRADENHEAD	07/22/2020
Stn. No.:	API # 3004523191	FT	15950-10075
Mtr. No.:			

Smpl Date:	07/15/2020	06/14/2019	06/05/2017
Test Date:	07/17/2020	06/25/2019	06/05/2017
Run No:	SO200051	SO190061	SO170016
Nitrogen:	22.9715	15.9691	24.2838
CO2:	0.0236	2.1793	0.0240
Methane:	68.9577	73.9160	67.9383
Ethane:	4.8289	3.7408	4.5550
Propane:	2.1541	1.9853	2.0990
I-Butane:	0.4341	0.4841	0.4490
N-Butane:	0.4013	0.4200	0.3990
I-Pentane:	0.1330	0.1771	0.1370
N-Pentane:	0.0538	0.0961	0.0600
Hexane+:	0.0420	1.0322	0.0550
BTU:	876.7	962.0	861.6
GPM:	16.4900	17.0960	16.3860
SPG:	0.7113	0.7266	0.7156



NMOCD REC'D
10/12/20

Well Name: CASE B 4A; CSG
API #: API # 3004523191
Source: CASING
Sample Type: GAS
Analysis No: SO200052
Cust No: 15950-10080

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: CASE B 4A; CSG
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation: FT
Cust. Stn. No.: API # 3004523191

Source: CASING
Well Flowing: Y
Pressure: 41 PSIG
Flow Temp: 78.4 DEG. F
Ambient Temp: 72 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 07/15/2020
Sample Time: 8.25 AM
Sampled By: CELIA L.
Sampled by (CO): ABC

Heat Trace: N
Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2142	0.2072	0.0240	0.00	0.0021
CO2	0.5064	0.4897	0.0870	0.00	0.0077
Methane	82.3684	79.6595	14.0120	831.92	0.4562
Ethane	8.6005	8.3176	2.3080	152.20	0.0893
Propane	4.0739	3.9399	1.1260	102.50	0.0620
Iso-Butane	0.7615	0.7365	0.2500	24.76	0.0153
N-Butane	1.2225	1.1823	0.3870	39.88	0.0245
I-Pentane	0.4905	0.4744	0.1800	19.62	0.0122
N-Pentane	0.3826	0.3700	0.1390	15.34	0.0095
Hexane Plus	1.3795	1.3341	0.6170	72.71	0.0457
Total	100.0000	96.7112	19.1300	1258.95	0.7245

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0037
BTU/CU.FT IDEAL: 1261.9
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1266.5
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1244.5
DRY BTU @ 15.025: 1291.9
REAL SPECIFIC GRAVITY: 0.7269

CYLINDER #: 1014
CYLINDER PRESSURE: 35 PSIG
ANALYSIS DATE: 07/17/2020
ANALYSIS TIME: 01:12:20 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: 07/22/2020

GC Method: C6+ Gas



BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease:	CASE B 4A; CSG	CASING	07/22/2020
Stn. No.:	API # 3004523191	FT	15950-10080
Mtr. No.:			

Smpl Date:	07/15/2020	06/14/2019	06/05/2017
Test Date:	07/17/2020	06/26/2019	06/12/2017
Run No:	SO200052	SO190062	SO170017
Nitrogen:	0.2142	0.1708	0.2450
CO2:	0.5064	0.5335	0.7550
Methane:	82.3684	76.1458	82.2152
Ethane:	8.6005	11.4792	9.1229
Propane:	4.0739	6.4329	4.0020
I-Butane:	0.7615	1.2981	0.7020
N-Butane:	1.2225	1.6021	1.1780
I-Pentane:	0.4905	0.6010	0.4640
N-Pentane:	0.3826	0.4768	0.3540
Hexane+:	1.3795	1.2598	0.9620
BTU:	1266.5	1347.0	1244.5
GPM:	19.1300	19.8250	19.0250
SPG:	0.7269	0.7784	0.7170



NMOCD REC'D
10/12/20

Well Name: CASE B 4A; TBG
API #: API # 3004523191
Source: TUBING
Sample Type: GAS
Analysis No: SO200053
Cust No: 15950-10085

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: CASE B 4A; TBG
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation: FT
Cust. Stn. No.: API # 3004523191

Source: TUBING
Well Flowing: Y
Pressure: 25 PSIG
Flow Temp: 78.9 DEG. F
Ambient Temp: 72 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 07/15/2020
Sample Time: 8.30 AM
Sampled By: CELIA L.
Sampled by (CO): ABC

Heat Trace: N
Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2584	0.2513	0.0290	0.00	0.0025
CO2	1.0201	0.9920	0.1750	0.00	0.0155
Methane	81.0021	78.7716	13.7800	818.12	0.4487
Ethane	9.5445	9.2817	2.5610	168.91	0.0991
Propane	4.1019	3.9889	1.1340	103.21	0.0625
Iso-Butane	0.7094	0.6899	0.2330	23.07	0.0142
N-Butane	1.2440	1.2097	0.3940	40.58	0.0250
I-Pentane	0.4831	0.4698	0.1770	19.33	0.0120
N-Pentane	0.3811	0.3706	0.1390	15.28	0.0095
Hexane Plus	1.2554	1.2208	0.5620	66.17	0.0415
Total	100.0000	97.2463	19.1840	1254.67	0.7305

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0037
BTU/CU.FT IDEAL: 1257.6
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1262.2
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1240.2
DRY BTU @ 15.025: 1287.5
REAL SPECIFIC GRAVITY: 0.7329

CYLINDER #: 016
CYLINDER PRESSURE: 17 PSIG
ANALYSIS DATE: 07/17/2020
ANALYSIS TIME: 12:28:15 AM
ANALYSIS RUN BY: SHYANN ELLEDGE

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: 07/22/2020

GC Method: C6+ Gas



BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease:	CASE B 4A; TBG	TUBING	07/22/2020
Stn. No.:	API # 3004523191	FT	15950-10085
Mtr. No.:			

Smpl Date:	07/15/2020	06/14/2019	06/05/2017
Test Date:	07/17/2020	06/25/2019	06/05/2017
Run No:	SO200053	SO190063	SO170018
Nitrogen:	0.2584	0.2479	9.8311
CO2:	1.0201	0.9843	0.7970
Methane:	81.0021	80.5258	75.2638
Ethane:	9.5445	10.0108	8.1791
Propane:	4.1019	4.3848	3.3670
I-Butane:	0.7094	0.7129	0.5570
N-Butane:	1.2440	1.2778	0.9180
I-Pentane:	0.4831	0.4453	0.3040
N-Pentane:	0.3811	0.3547	0.2330
Hexane+:	1.2554	1.0557	0.5500
BTU:	1262.2	1260.9	1093.9
GPM:	19.1840	19.1950	18.0510
SPG:	0.7329	0.7313	0.7233