



OCD Received 10/28/2020

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

Analysis No: SO200208
Cust No: 15950-12400

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: MUDGE LS 23M ; INT
County/State: NM
Location:
Lease/PA/CA:
Formation:
Cust. Stn. No.: API # 300453063200
98633

Source: INTERMEDIATE
Well Flowing:
Pressure: 37.5 PSIG
Flow Temp: DEG. F
Ambient Temp: 82 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 09/25/2020
Sample Time: 11.15 AM
Sampled By: SEAN CASAUS
Sampled by (CO): ABC

Heat Trace: N
Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.6713	0.6491	0.0740	0.00	0.0065
CO2	0.0021	0.0020	0.0000	0.00	0.0000
Methane	83.0922	80.3403	14.1320	839.23	0.4602
Ethane	7.8800	7.6190	2.1140	139.45	0.0818
Propane	4.5273	4.3774	1.2510	113.91	0.0689
Iso-Butane	0.7136	0.6900	0.2340	23.21	0.0143
N-Butane	1.2252	1.1846	0.3880	39.97	0.0246
I-Pentane	0.4820	0.4660	0.1770	19.28	0.0120
N-Pentane	0.3405	0.3292	0.1240	13.65	0.0085
Hexane Plus	1.0658	1.0305	0.4770	56.18	0.0353
Total	100.0000	96.6881	18.9710	1244.88	0.7122

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0035
BTU/CU.FT IDEAL: 1247.8
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1252.1
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1230.3
DRY BTU @ 15.025: 1277.2
REAL SPECIFIC GRAVITY: 0.7144

CYLINDER #: 027
CYLINDER PRESSURE: 37 PSIG
ANALYSIS DATE: 10/02/2020
ANALYSIS TIME: 09:47:57 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: 10/08/2020

GC Method: C6+ Gas



BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease: MUDGE LS 23M ; INT
Stn. No.: API #
Mtr. No.: 98633

INTERMEDIATE

10/08/2020
15950-12400

Smpl Date: 09/25/2020
Test Date: 10/02/2020
Run No: SO200208

Nitrogen: 0.6713
CO2: 0.0021
Methane: 83.0922
Ethane: 7.8800
Propane: 4.5273
I-Butane: 0.7136
N-Butane: 1.2252
I-Pentane: 0.4820
N-Pentane: 0.3405
Hexane+: 1.0658

BTU: 1252.1
GPM: 18.9710
SPG: 0.7144



OCD Received 10/28/2020

Well Name: MUDGE LS 23M ; TBG
API #: API # 300453063200
Source: TUBING
Sample Type: GAS
Analysis No: SO200209
Cust No: 15950-12405

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: MUDGE LS 23M ; TBG
County/State: NM
Location:
Lease/PA/CA:
Formation:
Cust. Stn. No.: API # 300453063200
98633
Heat Trace: N
Remarks: PRESSURED WITH HELIUM TO 30LBS.

Source: TUBING
Well Flowing: Y
Pressure: 5.0 PSIG
Flow Temp: DEG. F
Ambient Temp: 82 DEG. F
Flow Rate: MCF/D
Sample Method:
Sample Date: 09/25/2020
Sample Time: 11.25 AM
Sampled By: SEAN CASAUS
Sampled by (CO): ABC

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2038	0.0798	0.0220	0.00	0.0020
CO2	1.7298	0.6774	0.2960	0.00	0.0263
Methane	82.7456	32.4038	14.0750	835.73	0.4583
Ethane	7.9380	3.1086	2.1300	140.48	0.0824
Propane	3.5270	1.3812	0.9750	88.74	0.0537
Iso-Butane	0.8314	0.3256	0.2730	27.04	0.0167
N-Butane	0.9402	0.3682	0.2970	30.67	0.0189
I-Pentane	0.4364	0.1709	0.1600	17.46	0.0109
N-Pentane	0.2801	0.1097	0.1020	11.23	0.0070
Hexane Plus	1.3677	0.5356	0.6120	72.09	0.0453
Total	100.0000	39.1608	18.9420	1223.44	0.7214

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0036
BTU/CU.FT IDEAL: 1226.3
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1230.6
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1209.2
DRY BTU @ 15.025: 1255.2
REAL SPECIFIC GRAVITY: 0.7236

CYLINDER #: 24
CYLINDER PRESSURE: 6 PSIG
ANALYSIS DATE: 10/02/2020
ANALYSIS TIME: 10:17:09 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: 10/08/2020

GC Method: C6+ Gas



BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease: MUDGE LS 23M ; TBG
Stn. No.: API #
Mtr. No.: 98633

TUBING

10/08/2020
15950-12405

Smpl Date: 09/25/2020
Test Date: 10/02/2020
Run No: SO200209

Nitrogen: 0.2038
CO2: 1.7298
Methane: 82.7456
Ethane: 7.9380
Propane: 3.5270
I-Butane: 0.8314
N-Butane: 0.9402
I-Pentane: 0.4364
N-Pentane: 0.2801
Hexane+: 1.3677

BTU: 1230.6
GPM: 18.9420
SPG: 0.7236



OCD Received 10/28/2020

Well Name: MUDGE LS 23M ; CSG
API #: API # 300453063200
Source: CASING
Sample Type: GAS
Analysis No: SO200210
Cust No: 15950-12410

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: MUDGE LS 23M ; CSG
County/State: NM
Location:
Lease/PA/CA:
Formation:
Cust. Stn. No.: API # 300453063200
98633

Source: CASING
Well Flowing: Y
Pressure: 53 PSIG
Flow Temp: DEG. F
Ambient Temp: 82 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 09/25/2020
Sample Time: 11.20 AM
Sampled By: SEAN CASAUS
Sampled by (CO): ABC

Heat Trace: N
Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2214	0.2177	0.0240	0.00	0.0021
CO2	1.1861	1.1663	0.2030	0.00	0.0180
Methane	81.2664	79.9077	13.8250	820.79	0.4501
Ethane	8.8895	8.7409	2.3860	157.32	0.0923
Propane	4.3275	4.2552	1.1960	108.88	0.0659
Iso-Butane	0.8341	0.8202	0.2740	27.12	0.0167
N-Butane	1.1827	1.1629	0.3740	38.58	0.0237
I-Pentane	0.4003	0.3936	0.1470	16.02	0.0100
N-Pentane	0.3292	0.3237	0.1200	13.20	0.0082
Hexane Plus	1.3628	1.3400	0.6100	71.83	0.0451
Total	100.0000	98.3282	19.1590	1253.75	0.7322

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0037
BTU/CU.FT IDEAL: 1256.6
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1261.3
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1239.4
DRY BTU @ 15.025: 1286.6
REAL SPECIFIC GRAVITY: 0.7346

CYLINDER #: 2003
CYLINDER PRESSURE: 51 PSIG
ANALYSIS DATE: 10/02/2020
ANALYSIS TIME: 10:30:01 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: 10/08/2020

GC Method: C6+ Gas



BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease: MUDGE LS 23M ; CSG
Stn. No.: API #
Mtr. No.: 98633

CASING

10/08/2020
15950-12410

Smpl Date: 09/25/2020
Test Date: 10/02/2020
Run No: SO200210

Nitrogen: 0.2214
CO2: 1.1861
Methane: 81.2664
Ethane: 8.8895
Propane: 4.3275
I-Butane: 0.8341
N-Butane: 1.1827
I-Pentane: 0.4003
N-Pentane: 0.3292
Hexane+: 1.3628

BTU: 1261.3
GPM: 19.1590
SPG: 0.7346