



NMOCD REC'D
10/12/20

Well Name: MUDGE LS 22M; CSG
API #: API #300453075700
Source: CASING
Sample Type: GAS
Analysis No: SO200063
Cust No: 15950-11750

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: MUDGE LS 22M; CSG
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation:
Cust. Stn. No.: API #300453075700

Source: CASING
Well Flowing: Y
Pressure: 63.1 PSIG
Flow Temp: DEG. F
Ambient Temp: 90 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 07/15/2020
Sample Time: 9.51 AM
Sampled By: JASON M.
Sampled by (CO): ABC

Heat Trace:
Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.5086	0.4584	0.0560	0.00	0.0049
CO2	0.0087	0.0078	0.0010	0.00	0.0001
Methane	84.6784	76.3229	14.4020	855.25	0.4690
Ethane	7.9414	7.1578	2.1310	140.54	0.0824
Propane	3.0706	2.7676	0.8490	77.26	0.0467
Iso-Butane	0.4572	0.4121	0.1500	14.87	0.0092
N-Butane	0.9462	0.8528	0.2990	30.87	0.0190
I-Pentane	0.3761	0.3390	0.1380	15.05	0.0094
N-Pentane	0.3793	0.3419	0.1380	15.20	0.0094
Hexane Plus	1.6335	1.4723	0.7310	86.10	0.0541
Total	100.0000	90.1326	18.8950	1235.14	0.7043

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0035
BTU/CU.FT IDEAL: 1238.0
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1242.3
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1220.7
DRY BTU @ 15.025: 1267.2
REAL SPECIFIC GRAVITY: 0.7065

CYLINDER #: 0114
CYLINDER PRESSURE: 54 PSIG
ANALYSIS DATE: 07/17/2020
ANALYSIS TIME: 10:23:56 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: MUDGE LS 22M; CSG
Stn. No.: API
Mtr. No.:

CASING

07/22/2020
15950-11750

Smpl Date: 07/15/2020
Test Date: 07/17/2020
Run No: SO200063

Nitrogen: 0.5086
CO2: 0.0087
Methane: 84.6784
Ethane: 7.9414
Propane: 3.0706
I-Butane: 0.4572
N-Butane: 0.9462
I-Pentane: 0.3761
N-Pentane: 0.3793
Hexane+: 1.6335

BTU: 1242.3
GPM: 18.8950
SPG: 0.7065



NMOCD REC'D
10/12/20

Well Name: MUDGE LS 22M; INTER
API #: API #300453075700
Source: INTERMEDIATE CASING
Sample Type: GAS
Analysis No: SO200064
Cust No: 15950-11760

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: MUDGE LS 22M; INTER
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation:
Cust. Stn. No.: API #300453075700

Source: INTERMEDIATE CASING
Well Flowing: Y
Pressure: 56.3 PSIG
Flow Temp: DEG. F
Ambient Temp: 90 DEG. F
Flow Rate: MCF/D
Sample Method:
Sample Date: 07/15/2020
Sample Time: 11.41 AM
Sampled By: JASON M.
Sampled by (CO): ABC

Heat Trace:

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.7318	0.7168	0.0810	0.00	0.0071
CO2	0.4277	0.4189	0.0730	0.00	0.0065
Methane	83.6781	81.9597	14.2290	845.15	0.4635
Ethane	8.2385	8.0693	2.2100	145.80	0.0855
Propane	4.2166	4.1300	1.1650	106.09	0.0642
Iso-Butane	0.4739	0.4642	0.1560	15.41	0.0095
N-Butane	1.0583	1.0366	0.3350	34.52	0.0212
I-Pentane	0.2736	0.2680	0.1000	10.95	0.0068
N-Pentane	0.2395	0.2346	0.0870	9.60	0.0060
Hexane Plus	0.6620	0.6484	0.2960	34.89	0.0219
Total	100.0000	97.9465	18.7320	1202.42	0.6922

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0033
BTU/CU.FT IDEAL: 1205.2
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1209.1
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1188.1
DRY BTU @ 15.025: 1233.3
REAL SPECIFIC GRAVITY: 0.6942

CYLINDER #: 012
CYLINDER PRESSURE: 49 PSIG
ANALYSIS DATE: 07/17/2020
ANALYSIS TIME: 09:44:59 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: MUDGE LS 22M; INTER
Stn. No.: API
Mtr. No.:

INTERMEDIATE CASING

07/22/2020
15950-11760

Smpl Date: 07/15/2020
Test Date: 07/17/2020
Run No: SO200064

Nitrogen: 0.7318
CO2: 0.4277
Methane: 83.6781
Ethane: 8.2385
Propane: 4.2166
I-Butane: 0.4739
N-Butane: 1.0583
I-Pentane: 0.2736
N-Pentane: 0.2395
Hexane+: 0.6620

BTU: 1209.1
GPM: 18.7320
SPG: 0.6942



NMOCD REC'D
10/12/20

Well Name: MUDGE LS 22M; TBG
API #: API #300453075700
Source: TUBING
Sample Type: GAS
Analysis No: SO200065
Cust No: 15950-11755

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: MUDGE LS 22M; TBG
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation:
Cust. Stn. No.: API #300453075700

Source: TUBING
Well Flowing: Y
Pressure: 32.5 PSIG
Flow Temp: DEG. F
Ambient Temp: 90 DEG. F
Flow Rate: MCF/D
Sample Method:
Sample Date: 07/15/2020
Sample Time: 11.15 AM
Sampled By: JASON M.
Sampled by (CO): ABC

Heat Trace:

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2173	0.2126	0.0240	0.00	0.0021
CO2	1.6289	1.5936	0.2790	0.00	0.0248
Methane	80.7617	79.0132	13.7390	815.69	0.4473
Ethane	9.2680	9.0674	2.4870	164.02	0.0962
Propane	4.0654	3.9774	1.1240	102.29	0.0619
Iso-Butane	0.7304	0.7146	0.2400	23.75	0.0147
N-Butane	1.2212	1.1948	0.3860	39.84	0.0245
I-Pentane	0.4575	0.4476	0.1680	18.30	0.0114
N-Pentane	0.3515	0.3439	0.1280	14.09	0.0088
Hexane Plus	1.2981	1.2700	0.5810	68.42	0.0430
Total	100.0000	97.8351	19.1560	1246.41	0.7346

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0037
BTU/CU.FT IDEAL: 1249.3
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1253.9
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1232.1
DRY BTU @ 15.025: 1279.0
REAL SPECIFIC GRAVITY: 0.737

CYLINDER #: 1064
CYLINDER PRESSURE: 54 PSIG
ANALYSIS DATE: 07/17/2020
ANALYSIS TIME: 09:46:32 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: MUDGE LS 22M; TBG
Stn. No.: API
Mtr. No.:

TUBING

07/22/2020
15950-11755

Smpl Date: 07/15/2020
Test Date: 07/17/2020
Run No: SO200065

Nitrogen: 0.2173
CO2: 1.6289
Methane: 80.7617
Ethane: 9.2680
Propane: 4.0654
I-Butane: 0.7304
N-Butane: 1.2212
I-Pentane: 0.4575
N-Pentane: 0.3515
Hexane+: 1.2981

BTU: 1253.9
GPM: 19.1560
SPG: 0.7370