



Well Name: SAN JUAN 32-5 UNIT 018;
 API #: 3004511434
 Source: BRADENHEAD
 Sample Type: GAS
 Analysis No: MS20230093
 Cust No: 53400-11955

Well/Lease Information

Customer Name: MORNINGSTAR
 Well Name: SAN JUAN 32-5 UNIT 018; BHD
 County/State: SAN JUAN NM
 Location:
 Lease/PA/CA:
 Formation: FC
 Cust. Stn. No.: 3004511434

Source: BRADENHEAD
 Well Flowing: Y
 Pressure: 75 PSIG
 Flow Temp: 57 DEG. F
 Ambient Temp: 44 DEG. F
 Flow Rate: 120 MCF/D
 Sample Method: Purge & Fill
 Sample Date: 04/25/2023
 Sample Time: 8.15 AM
 Sampled By: DWAIN WHITE
 Sampled by (CO): MORNINGSTAR

Heat Trace: N
 Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.0875	0.0856	0.0100	0.00	0.0008
CO2	0.0847	0.0829	0.0140	0.00	0.0013
Methane	97.9113	95.7953	16.6300	988.90	0.5423
Ethane	1.4470	1.4157	0.3880	25.61	0.0150
Propane	0.2632	0.2575	0.0730	6.62	0.0040
Iso-Butane	0.0484	0.0474	0.0160	1.57	0.0010
N-Butane	0.0460	0.0450	0.0150	1.50	0.0009
I-Pentane	0.0205	0.0201	0.0080	0.82	0.0005
N-Pentane	0.0111	0.0109	0.0040	0.44	0.0003
Hexane Plus	0.0803	0.0786	0.0360	4.23	0.0027
Total	100.0000	97.8390	17.1940	1029.71	0.5688

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0021
 BTU/CU.FT IDEAL: 1032.1
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1034.3
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1016.3
 DRY BTU @ 15.025: 1055.0
 REAL SPECIFIC GRAVITY: 0.5698

CYLINDER #: 7032
 CYLINDER PRESSURE: 33 PSIG
 ANALYSIS DATE: 05/04/2023
 ANALYSIS TIME: 09:17:52 AM
 ANALYSIS RUN BY: ALEXIS MITCHELL

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: 05/05/2023

GC Method: C6+ Gas



MORNINGSTAR
WELL ANALYSIS COMPARISON

Lease:	SAN JUAN 32-5 UNIT 018; BHD	BRADENHEAD	05/05/2023
Stn. No.:	3004511434	FC	53400-11955
Mtr. No.:			

Smpl Date: 04/25/2023
Test Date: 05/04/2023
Run No: MS20230093

Nitrogen: 0.0875
CO2: 0.0847
Methane: 97.9113
Ethane: 1.4470
Propane: 0.2632
I-Butane: 0.0484
N-Butane: 0.0460
I-Pentane: 0.0205
N-Pentane: 0.0111
Hexane+: 0.0803

BTU: 1034.3
GPM: 17.1940
SPG: 0.5698



Well Name: SAN JUAN 32-5 UNIT 018;
 API #: 3004511434
 Source: CASING
 Sample Type: GAS
 Analysis No: MS20230094
 Cust No: 53400-11960

Well/Lease Information

Customer Name: MORNINGSTAR
 Well Name: SAN JUAN 32-5 UNIT 018; CSG
 County/State: SAN JUAN NM
 Location:
 Lease/PA/CA:
 Formation: FC
 Cust. Stn. No.: 3004511434

Source: CASING
 Well Flowing: Y
 Pressure: 75 PSIG
 Flow Temp: 57 DEG. F
 Ambient Temp: 44 DEG. F
 Flow Rate: 120 MCF/D
 Sample Method: Purge & Fill
 Sample Date: 04/25/2023
 Sample Time: 8.15 AM
 Sampled By: DWAIN WHITE
 Sampled by (CO): MORNINGSTAR

Heat Trace: N
 Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.0727	0.0715	0.0080	0.00	0.0007
CO2	1.8594	1.8288	0.3180	0.00	0.0283
Methane	93.3288	91.7952	15.8540	942.62	0.5169
Ethane	4.0095	3.9436	1.0740	70.96	0.0416
Propane	0.5493	0.5403	0.1520	13.82	0.0084
Iso-Butane	0.0713	0.0701	0.0230	2.32	0.0014
N-Butane	0.0477	0.0469	0.0150	1.56	0.0010
I-Pentane	0.0192	0.0189	0.0070	0.77	0.0005
N-Pentane	0.0068	0.0067	0.0020	0.27	0.0002
Hexane Plus	0.0353	0.0347	0.0160	1.86	0.0012
Total	100.0000	98.3567	17.4690	1034.17	0.6001

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0023
 BTU/CU.FT IDEAL: 1036.6
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1039.0
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1020.9
 DRY BTU @ 15.025: 1059.8
 REAL SPECIFIC GRAVITY: 0.6012

CYLINDER #: 4223
 CYLINDER PRESSURE: 33 PSIG
 ANALYSIS DATE: 05/04/2023
 ANALYSIS TIME: 09:26:20 AM
 ANALYSIS RUN BY: ALEXIS MITCHELL

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: 05/05/2023

GC Method: C6+ Gas



MORNINGSTAR
WELL ANALYSIS COMPARISON

Lease:	SAN JUAN 32-5 UNIT 018; CSG	CASING	05/05/2023
Stn. No.:	3004511434	FC	53400-11960
Mtr. No.:			

Smpl Date: 04/25/2023
Test Date: 05/04/2023
Run No: MS20230094

Nitrogen: 0.0727
CO2: 1.8594
Methane: 93.3288
Ethane: 4.0095
Propane: 0.5493
I-Butane: 0.0713
N-Butane: 0.0477
I-Pentane: 0.0192
N-Pentane: 0.0068
Hexane+: 0.0353

BTU: 1039.0
GPM: 17.4690
SPG: 0.6012



Well Name: SAN JUAN 32-5 UNIT 018;
 API #: 3004511434
 Source: INTERMEDIATE CASING
 Sample Type: GAS
 Analysis No: MS20230095
 Cust No: 53400-11965

Well/Lease Information

Customer Name: MORNINGSTAR	Source: INTERMEDIATE CASING
Well Name: SAN JUAN 32-5 UNIT 018; INTRM	Well Flowing: Y
County/State: SAN JUAN NM	Pressure: 75 PSIG
Location:	Flow Temp: 57 DEG. F
Lease/PA/CA:	Ambient Temp: 44 DEG. F
Formation:	Flow Rate: 120 MCF/D
Cust. Stn. No.: 3004511434	Sample Method: Purge & Fill
	Sample Date: 04/25/2023
	Sample Time: 8.15 AM
	Sampled By: DWAIN WHITE
	Sampled by (CO): MORNINGSTAR
Heat Trace: N	
Remarks: PRESSURED WITH HELIUM TO 30 LBS.	

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.5406	0.2355	0.0600	0.00	0.0052
CO2	0.0413	0.0180	0.0070	0.00	0.0006
Methane	92.3895	40.2470	15.6950	933.13	0.5117
Ethane	6.2983	2.7437	1.6880	111.46	0.0654
Propane	0.4300	0.1873	0.1190	10.82	0.0065
Iso-Butane	0.1618	0.0705	0.0530	5.26	0.0032
N-Butane	0.0370	0.0161	0.0120	1.21	0.0007
I-Pentane	0.0505	0.0220	0.0190	2.02	0.0013
N-Pentane	0.0000	0.0000	0.0000	0.00	0.0000
Hexane Plus	0.0510	0.0222	0.0230	2.69	0.0017
Total	100.0000	43.5623	17.6760	1066.59	0.5965

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.0023	CYLINDER #:	5017
BTU/CU.FT IDEAL:	1069.1	CYLINDER PRESSURE:	PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1071.5	ANALYSIS DATE:	05/04/2023
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1052.9	ANALYSIS TIME:	09:28:42 AM
DRY BTU @ 15.025:	1093.0	ANALYSIS RUN BY:	KERRA GONZALEZ
REAL SPECIFIC GRAVITY:	0.5976		

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: 05/05/2023

GC Method: C6+ Gas



MORNINGSTAR
WELL ANALYSIS COMPARISON

Lease:	SAN JUAN 32-5 UNIT 018; INTRM	INTERMEDIATE CASING	05/05/2023
Stn. No.:	3004511434		53400-11965
Mtr. No.:			

Smpl Date: 04/25/2023
Test Date: 05/04/2023
Run No: MS20230095

Nitrogen: 0.5406
CO2: 0.0413
Methane: 92.3895
Ethane: 6.2983
Propane: 0.4300
I-Butane: 0.1618
N-Butane: 0.0370
I-Pentane: 0.0505
N-Pentane: 0.0000
Hexane+: 0.0510

BTU: 1071.5
GPM: 17.6760
SPG: 0.5976

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District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 225649

CONDITIONS

Operator: MorningStar Operating LLC 400 W 7th St Fort Worth, TX 76102	OGRID: 330132
	Action Number: 225649
	Action Type: [UF-GA] Gas Analysis (GAS ANALYSIS)

CONDITIONS

Created By	Condition	Condition Date
mkuehling	for record only	6/9/2023