



Well Name: ANGEL PEAK 3E; BHD

API #:

Source: BRADENHEAD

Sample Type: GAS

Analysis No: MS2021101

Cust No: 53400-11640

Well/Lease Information

Customer Name: MORNINGSTAR
 Well Name: ANGEL PEAK 3E; BHD
 County/State: SAN JUAN NM
 Location:
 Lease/PA/CA: 36
 Formation: DK
 Cust. Stn. No.: 95391

Source: BRADENHEAD
 Well Flowing: Y
 Pressure: 99 PSIG
 Flow Temp: 55 DEG. F
 Ambient Temp: 53 DEG. F
 Flow Rate: 15 MCF/D
 Sample Method: Purge & Fill
 Sample Date: 04/27/2021
 Sample Time: 1.00 PM
 Sampled By: JASON M.
 Sampled by (CO): WALSH

Heat Trace: N

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	1.9778	1.9608	0.2180	0.00	0.0191
CO2	0.2180	0.2161	0.0370	0.00	0.0033
Methane	77.4880	76.8229	13.1830	782.63	0.4292
Ethane	8.9197	8.8431	2.3940	157.85	0.0926
Propane	6.7410	6.6831	1.8640	169.61	0.1026
Iso-Butane	0.7582	0.7517	0.2490	24.66	0.0152
N-Butane	2.3586	2.3384	0.7460	76.94	0.0473
I-Pentane	0.5575	0.5527	0.2050	22.31	0.0139
N-Pentane	0.5118	0.5074	0.1860	20.52	0.0127
Hexane Plus	0.4694	0.4654	0.2100	24.74	0.0155
Total	100.0000	99.1416	19.2920	1279.26	0.7516

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0038
 BTU/CU.FT IDEAL: 1282.2
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1287.1
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1264.7
 DRY BTU @ 15.025: 1312.9
 REAL SPECIFIC GRAVITY: 0.7542

CYLINDER #: 7050
 CYLINDER PRESSURE: 96 PSIG
 ANALYSIS DATE: 05/04/2021
 ANALYSIS TIME: 08:45:07 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: 05/05/2021

GC Method: C6+ Gas



MORNINGSTAR
WELL ANALYSIS COMPARISON

Lease:	ANGEL PEAK 3E; BHD	BRADENHEAD	05/05/2021
Stn. No.:		DK	53400-11640
Mtr. No.:	95391		

Smpl Date:	04/27/2021	04/19/2021
Test Date:	05/04/2021	04/21/2021
Run No:	MS2021101	MS2021074
Nitrogen:	1.9778	3.9739
CO2:	0.2180	0.2754
Methane:	77.4880	76.8230
Ethane:	8.9197	9.0164
Propane:	6.7410	6.1080
I-Butane:	0.7582	0.7093
N-Butane:	2.3586	1.9062
I-Pentane:	0.5575	0.4707
N-Pentane:	0.5118	0.4219
Hexane+:	0.4694	0.2952
BTU:	1287.1	1232.9
GPM:	19.2920	18.9530
SPG:	0.7542	0.7415



Well Name: ANGEL PEAK 3E; CSG

API #:

Source: CASING

Sample Type: GAS

Analysis No: MS2021102

Cust No: 53400-11645

Well/Lease Information

Customer Name: MORNINGSTAR
 Well Name: ANGEL PEAK 3E; CSG
 County/State: SAN JUAN NM
 Location:
 Lease/PA/CA: 36
 Formation: DK
 Cust. Stn. No.: 95391

Source: CASING
 Well Flowing: Y
 Pressure: 140 PSIG
 Flow Temp: 55 DEG. F
 Ambient Temp: 53 DEG. F
 Flow Rate: 15 MCF/D
 Sample Method:
 Sample Date: 04/27/2021
 Sample Time: 1.10 PM
 Sampled By: JASON M.
 Sampled by (CO): WALSH

Heat Trace:

Remarks:

Analysis

Component:	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	1.9783	1.9575	0.2180	0.00	0.0191
CO2	0.2082	0.2060	0.0360	0.00	0.0032
Methane	76.9180	76.1114	13.0890	776.87	0.4260
Ethane	8.8645	8.7715	2.3800	156.88	0.0920
Propane	6.8115	6.7400	1.8840	171.38	0.1037
Iso-Butane	0.7775	0.7693	0.2550	25.28	0.0156
N-Butane	2.5134	2.4870	0.7950	81.99	0.0504
I-Pentane	0.6274	0.6208	0.2300	25.10	0.0156
N-Pentane	0.6002	0.5939	0.2180	24.06	0.0150
Hexane Plus	0.7010	0.6936	0.3140	36.95	0.0232
Total	100.0000	98.9510	19.4190	1298.52	0.7639

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.004
 BTU/CU.FT IDEAL: 1301.5
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1306.8
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1284.1
 DRY BTU @ 15.025: 1333.0
 REAL SPECIFIC GRAVITY: 0.7667

CYLINDER #: 6100
 CYLINDER PRESSURE: 63 PSIG
 ANALYSIS DATE: 05/04/2021
 ANALYSIS TIME: 09:15:07 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: 05/05/2021

GC Method: C6+ Gas



MORNINGSTAR
WELL ANALYSIS COMPARISON

Lease: ANGEL PEAK 3E; CSG
Stn. No.:
Mtr. No.: 95391

CASING
DK

05/05/2021
53400-11645

Smpl Date:	04/27/2021	04/19/2021
Test Date:	05/04/2021	04/21/2021
Run No:	MS2021102	MS2021075
Nitrogen:	1.9783	1.8501
CO2:	0.2082	0.2860
Methane:	76.9180	78.1180
Ethane:	8.8645	9.1751
Propane:	6.8115	6.3790
I-Butane:	0.7775	0.7450
N-Butane:	2.5134	2.0725
I-Pentane:	0.6274	0.5161
N-Pentane:	0.6002	0.4743
Hexane+:	0.7010	0.3839
BTU:	1306.8	1271.2
GPM:	19.4190	19.2020
SPG:	0.7667	0.7437



Well Name: ANGEL PEAK 3E; TBG

API #:

Source: TUBING

Sample Type: GAS

Analysis No: MS2021103

Cust No: 53400-11650

Well/Lease Information

Customer Name: MORNINGSTAR
 Well Name: ANGEL PEAK 3E; TBG
 County/State: SAN JUAN NM
 Location:
 Lease/PA/CA: 36
 Formation: DK
 Cust. Stn. No.: 95391

Source: TUBING
 Well Flowing: Y
 Pressure: 130 PSIG
 Flow Temp: 54 DEG. F
 Ambient Temp: 52 DEG. F
 Flow Rate: 15 MCF/D
 Sample Method:
 Sample Date: 04/27/2021
 Sample Time: 1.20 PM
 Sampled By: JASON M.
 Sampled by (CO): WALSH

Heat Trace: N
 Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.7070	0.7006	0.0780	0.00	0.0068
CO2	1.0164	1.0072	0.1740	0.00	0.0154
Methane	80.0918	79.3707	13.6220	808.93	0.4436
Ethane	10.8481	10.7504	2.9110	191.98	0.1126
Propane	4.3258	4.2869	1.1960	108.84	0.0659
Iso-Butane	0.7174	0.7109	0.2360	23.33	0.0144
N-Butane	1.1246	1.1145	0.3560	36.69	0.0226
I-Pentane	0.3914	0.3879	0.1440	15.66	0.0098
N-Pentane	0.2976	0.2949	0.1080	11.93	0.0074
Hexane Plus	0.4799	0.4756	0.2150	25.30	0.0159
Total	100.0000	99.0996	19.0400	1222.65	0.7144

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0035
 BTU/CU.FT IDEAL: 1225.5
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1229.7
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1208.3
 DRY BTU @ 15.025: 1254.3
 REAL SPECIFIC GRAVITY: 0.7166

CYLINDER #: 6071
 CYLINDER PRESSURE: 146 PSIG
 ANALYSIS DATE: 05/04/2021
 ANALYSIS TIME: 09:01:40 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: 05/05/2021

GC Method: C6+ Gas



MORNINGSTAR
WELL ANALYSIS COMPARISON

Lease: ANGEL PEAK 3E; TBG
Stn. No.:
Mtr. No.: 95391

TUBING
DK

05/05/2021
53400-11650

Smpl Date:	04/27/2021	04/19/2021
Test Date:	05/04/2021	04/21/2021
Run No:	MS2021103	MS2021076
Nitrogen:	0.7070	0.6866
CO2:	1.0164	1.0132
Methane:	80.0918	79.6816
Ethane:	10.8481	10.8886
Propane:	4.3258	4.4161
I-Butane:	0.7174	0.7783
N-Butane:	1.1246	1.2639
I-Pentane:	0.3914	0.5063
N-Pentane:	0.2976	0.4041
Hexane+:	0.4799	0.3613
BTU:	1229.7	1237.8
GPM:	19.0400	19.0940
SPG:	0.7166	0.7215

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
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

COMMENTS

Action 28242

COMMENTS

Operator:			OGRID:	Action Number:	Action Type:
MORNINGSTAR OPERATING LLC 400 W 7th St Fort Worth, TX76102			330132	28242	GAS ANALYSIS
Created By	Comment				Comment Date
mkuehling	same gas on bradenhead and production casing				05/14/2021

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CONDITIONS

Action 28242

CONDITIONS OF APPROVAL

Operator:	MORNINGSTAR OPERATING LLC	400 W 7th St	Fort Worth, TX76102	OGRID:	330132	Action Number:	28242	Action Type:	GAS ANALYSIS
OCD Reviewer	Condition								
mkuehling	None								