



Well Name: CALLOWAY 3; BHD
 API #: 3004525337
 Source: BRADENHEAD
 Sample Type: GAS
 Analysis No: HS20230220
 Cust No: 35825-12630

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
 Well Name: CALLOWAY 3; BHD
 County/State: SAN JUAN NM
 Location:
 Lease/PA/CA: FE
 Formation: MV DK PC
 Cust. Stn. No.: 3004525337
 WIH39461

Source: BRADENHEAD
 Well Flowing: Y
 Pressure: 76 PSIG
 Flow Temp: 97 DEG. F
 Ambient Temp: 80 DEG. F
 Flow Rate: 134 MCF/D
 Sample Method: Purge & Fill
 Sample Date: 08/03/2023
 Sample Time: 10.09 AM
 Sampled By: LIONEL GLEASON
 Sampled by (CO): HILCORP

Heat Trace: AREA 3 / RUN 302

Remarks: N

Analysis

Component:	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	1.2111	1.2077	0.1340	0.00	0.0117
CO2	0.0038	0.0038	0.0010	0.00	0.0001
Methane	87.8392	87.5924	14.9290	887.18	0.4865
Ethane	5.3567	5.3416	1.4360	94.80	0.0556
Propane	3.3140	3.3047	0.9150	83.38	0.0505
Iso-Butane	0.8397	0.8373	0.2750	27.31	0.0169
N-Butane	0.7136	0.7116	0.2260	23.28	0.0143
I-Pentane	0.3004	0.2996	0.1100	12.02	0.0075
N-Pentane	0.1539	0.1535	0.0560	6.17	0.0038
Hexane Plus	0.2676	0.2668	0.1200	14.11	0.0089
Total	100.0000	99.7190	18.2020	1148.24	0.6557

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0028
 BTU/CU.FT IDEAL: 1150.9
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1154.1
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1134.0
 DRY BTU @ 15.025: 1177.2
 REAL SPECIFIC GRAVITY: 0.6573

CYLINDER #: 6229
 CYLINDER PRESSURE: 45 PSIG
 ANALYSIS DATE: 08/09/2023
 ANALYSIS TIME: 01:31:31 AM
 ANALYSIS RUN BY: ACEDA GOODNOH

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: 08/15/2023

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	CALLOWAY 3; BHD	BRADENHEAD	08/15/2023
Stn. No.:	3004525337	MV DK PC	35825-12630
Mtr. No.:	WIH39461		

Smpl Date:	08/03/2023	07/30/2020
Test Date:	08/09/2023	08/05/2020
Run No:	HS20230220	HS200133
Nitrogen:	1.2111	1.2909
CO2:	0.0038	0.0237
Methane:	87.8392	88.1223
Ethane:	5.3567	5.1093
Propane:	3.3140	3.1995
I-Butane:	0.8397	0.8086
N-Butane:	0.7136	0.6812
I-Pentane:	0.3004	0.2880
N-Pentane:	0.1539	0.1465
Hexane+:	0.2676	0.3300
BTU:	1154.1	1150.1
GPM:	18.2020	18.1640
SPG:	0.6573	0.6559



Well Name: CALLOWAY 3; CSG

API #: 3004525337

Source: CASING

Sample Type: GAS

Analysis No: HS20230221

Cust No: 35825-12635

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)

Well Name: CALLOWAY 3; CSG

County/State: SAN JUAN NM

Location:

Lease/PA/CA: FE

Formation: MV DK PC

Cust. Stn. No.: 3004525337

WIH39461

AREA 3 / RUN 302

Heat Trace: N

Remarks:

Source: CASING

Well Flowing: Y

Pressure: 76 PSIG

Flow Temp: 97 DEG. F

Ambient Temp: 80 DEG. F

Flow Rate: 134 MCF/D

Sample Method: Purge & Fill

Sample Date: 08/03/2023

Sample Time: 10.24 AM

Sampled By: LIONEL GLEASON

Sampled by (CO): HILCORP

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2915	0.2859	0.0320	0.00	0.0028
CO2	0.8506	0.8343	0.1460	0.00	0.0129
Methane	80.7795	79.2291	13.7400	815.87	0.4474
Ethane	9.5710	9.3873	2.5680	169.38	0.0994
Propane	4.7554	4.6641	1.3140	119.65	0.0724
Iso-Butane	0.7608	0.7462	0.2500	24.74	0.0153
N-Butane	1.2826	1.2580	0.4060	41.84	0.0257
I-Pentane	0.4460	0.4374	0.1640	17.84	0.0111
N-Pentane	0.3611	0.3542	0.1310	14.48	0.0090
Hexane Plus	0.9015	0.8842	0.4030	47.52	0.0298
Total	100.0000	98.0807	19.1540	1251.32	0.7259

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0036
 BTU/CU.FT IDEAL: 1254.2
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1258.7
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1236.8
 DRY BTU @ 15.025: 1283.9
 REAL SPECIFIC GRAVITY: 0.7282

CYLINDER #: 6115
 CYLINDER PRESSURE: 76 PSIG
 ANALYSIS DATE: 08/09/2023
 ANALYSIS TIME: 01:50:58 AM
 ANALYSIS RUN BY: ACEDA GOODNOH

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: 08/15/2023

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: CALLOWAY 3; CSG
Stn. No.: 3004525337
Mtr. No.: WIH39461

CASING
MV DK PC

08/15/2023
35825-12635

Smpl Date:	08/03/2023	07/30/2020
Test Date:	08/09/2023	08/05/2020
Run No:	HS20230221	HS200134
Nitrogen:	0.2915	0.2499
CO2:	0.8506	0.9891
Methane:	80.7795	81.5812
Ethane:	9.5710	9.2040
Propane:	4.7554	4.2866
I-Butane:	0.7608	0.7371
N-Butane:	1.2826	1.2568
I-Pentane:	0.4460	0.4408
N-Pentane:	0.3611	0.3564
Hexane+:	0.9015	0.8981
BTU:	1258.7	1246.3
GPM:	19.1540	19.0630
SPG:	0.7282	0.7221

District I
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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

CONDITIONS

Action 252532

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 252532
	Action Type: [UF-GA] Gas Analysis (GAS ANALYSIS)

CONDITIONS

Created By	Condition	Condition Date
mkuehling	bradenhead and casing same pressure when samples - possible same gas	9/18/2023