



Well Name: HOWELL E #2R; BHD

API #: 30004527563

Source: BRADENHEAD

Sample Type: GAS

Analysis No: HS20230095

Cust No: 35825-15025

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)

Well Name: HOWELL E #2R; BHD

County/State: SAN JUAN NM

Location:

Lease/PA/CA:

Formation: MV/DK

Cust. Stn. No.: 30004527563
92607-01

AREA 4 / RUN 409

Heat Trace: N

Remarks: PRESSURED WITH HELIUM TO 30 LBS.

Source: BRADENHEAD

Well Flowing: N

Pressure: 0 PSIG

Flow Temp: 0 DEG. F

Ambient Temp: 80 DEG. F

Flow Rate: 0 MCF/D

Sample Method: Purge & Fill

Sample Date: 06/29/2023

Sample Time: 11.25 AM

Sampled By: DUSTIN D TITUS

Sampled by (CO): HILCORP

Analysis

Component:	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	2.4077	0.9195	0.2650	0.00	0.0233
CO2	0.0885	0.0338	0.0150	0.00	0.0013
Methane	93.0731	35.5449	15.8110	940.04	0.5155
Ethane	2.3391	0.8933	0.6270	41.40	0.0243
Propane	0.9955	0.3802	0.2750	25.05	0.0152
Iso-Butane	0.2603	0.0994	0.0850	8.46	0.0052
N-Butane	0.2535	0.0968	0.0800	8.27	0.0051
I-Pentane	0.1026	0.0392	0.0380	4.10	0.0026
N-Pentane	0.0592	0.0226	0.0220	2.37	0.0015
Hexane Plus	0.4205	0.1606	0.1880	22.16	0.0139
Total	100.0000	38.1903	17.4060	1051.86	0.6079

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0023
 BTU/CU.FT IDEAL: 1054.3
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1056.7
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1038.3
 DRY BTU @ 15.025: 1077.9
 REAL SPECIFIC GRAVITY: 0.609

CYLINDER #: 2191
 CYLINDER PRESSURE: PSIG
 ANALYSIS DATE: 07/06/2023
 ANALYSIS TIME: 03:03:55 PM
 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: 07/11/2023

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: HOWELL E #2R; BHD
Stn. No.: 30004527563
Mtr. No.: 92607-01

BRADENHEAD
MV/DK

07/11/2023
35825-15025

Smpl Date: 06/29/2023
Test Date: 07/06/2023
Run No: HS20230095

Nitrogen: 2.4077

CO2: 0.0885

Methane: 93.0731

Ethane: 2.3391

Propane: 0.9955

I-Butane: 0.2603

N-Butane: 0.2535

I-Pentane: 0.1026

N-Pentane: 0.0592

Hexane+: 0.4205

BTU: 1056.7

GPM: 17.4060

SPG: 0.6090



Well Name: HOWELL E #2R; CSG

API #: 3004527563

Source: CASING

Sample Type: GAS

Analysis No: HS20230096

Cust No: 35825-15030

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)

Well Name: HOWELL E #2R; CSG

County/State: SAN JUAN NM

Location:

Lease/PA/CA:

Formation: MV/DK

Cust. Stn. No.: 3004527563

92607-01

AREA 4, RUN 409

Heat Trace: N

Remarks:

Source: CASING

Well Flowing: N

Pressure: PSIG

Flow Temp: DEG. F

Ambient Temp: 79 DEG. F

Flow Rate: MCF/D

Sample Method: Purge & Fill

Sample Date: 06/29/2023

Sample Time: 11.15 AM

Sampled By: DUSTIN D TITUS

Sampled by (CO): HILCORP

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.1124	0.1119	0.0120	0.00	0.0011
CO2	2.0894	2.0807	0.3580	0.00	0.0317
Methane	86.2172	85.8577	14.6570	870.79	0.4776
Ethane	6.9714	6.9423	1.8700	123.37	0.0724
Propane	2.5890	2.5782	0.7150	65.14	0.0394
Iso-Butane	0.4886	0.4866	0.1600	15.89	0.0098
N-Butane	0.6608	0.6580	0.2090	21.56	0.0133
I-Pentane	0.2488	0.2478	0.0910	9.95	0.0062
N-Pentane	0.1676	0.1669	0.0610	6.72	0.0042
Hexane Plus	0.4548	0.4529	0.2030	23.97	0.0151
Total	100.0000	99.5830	18.3360	1137.40	0.6707

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.003
 BTU/CU.FT IDEAL: 1140.0
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1143.3
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1123.4
 DRY BTU @ 15.025: 1166.2
 REAL SPECIFIC GRAVITY: 0.6724

CYLINDER #: 2033
 CYLINDER PRESSURE: 31 PSIG
 ANALYSIS DATE: 07/06/2023
 ANALYSIS TIME: 03:13:13 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: 07/11/2023

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: HOWELL E #2R; CSG
Stn. No.: 3004527563
Mtr. No.: 92607-01

CASING
MV/DK

07/11/2023
35825-15030

Smpl Date: 06/29/2023
Test Date: 07/06/2023
Run No: HS20230096

Nitrogen: 0.1124
CO2: 2.0894
Methane: 86.2172
Ethane: 6.9714
Propane: 2.5890
I-Butane: 0.4886
N-Butane: 0.6608
I-Pentane: 0.2488
N-Pentane: 0.1676
Hexane+: 0.4548

BTU: 1143.3
GPM: 18.3360
SPG: 0.6724



Well Name: HOWELL E #2R; TBG

API #: 3004527563

Source: TUBING

Sample Type: GAS

Analysis No: HS20230097

Cust No: 35825-15035

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)

Well Name: HOWELL E #2R; TBG

County/State: SAN JUAN NM

Location:

Lease/PA/CA:

Formation: MK/DK

Cust. Stn. No.: 3004527563

92607-01

AREA 4 / RUN 409

Heat Trace: N

Remarks:

Source: TUBING

Well Flowing: N

Pressure: PSIG

Flow Temp: DEG. F

Ambient Temp: 80 DEG. F

Flow Rate: MCF/D

Sample Method: Purge & Fill

Sample Date: 06/29/2023

Sample Time: 11.20 AM

Sampled By: DUSTIN D TITUS

Sampled by (CO): HILCORP

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.1117	0.1113	0.0120	0.00	0.0011
CO2	2.0907	2.0840	0.3580	0.00	0.0318
Methane	86.2232	85.9489	14.6580	870.85	0.4776
Ethane	6.9539	6.9318	1.8650	123.06	0.0722
Propane	2.5804	2.5722	0.7130	64.93	0.0393
Iso-Butane	0.4866	0.4851	0.1600	15.82	0.0098
N-Butane	0.6590	0.6569	0.2080	21.50	0.0132
I-Pentane	0.2502	0.2494	0.0920	10.01	0.0062
N-Pentane	0.1689	0.1684	0.0610	6.77	0.0042
Hexane Plus	0.4754	0.4739	0.2130	25.06	0.0157
Total	100.0000	99.6819	18.3400	1138.00	0.6711

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.003
 BTU/CU.FT IDEAL: 1140.6
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1144.1
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1124.2
 DRY BTU @ 15.025: 1167.0
 REAL SPECIFIC GRAVITY: 0.6728

CYLINDER #: 1832
 CYLINDER PRESSURE: 32 PSIG
 ANALYSIS DATE: 07/06/2023
 ANALYSIS TIME: 03:19:17 PM
 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: 07/11/2023

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	HOWELL E #2R; TBG	TUBING	07/11/2023
Stn. No.:	3004527563	MK/DK	35825-15035
Mtr. No.:	92607-01		

Smpl Date: 06/29/2023
Test Date: 07/06/2023
Run No: HS20230097

Nitrogen: 0.1117
CO2: 2.0907
Methane: 86.2232
Ethane: 6.9539
Propane: 2.5804
I-Butane: 0.4866
N-Butane: 0.6590
I-Pentane: 0.2502
N-Pentane: 0.1689
Hexane+: 0.4754

BTU: 1144.1
GPM: 18.3400
SPG: 0.6728

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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 239060

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 239060
	Action Type: [UF-GA] Gas Analysis (GAS ANALYSIS)

CONDITIONS

Created By	Condition	Condition Date
mkuehling	not similar	9/22/2023