



Well Name: WOOD WN FEDERAL COM
 API #: 3004530900
 Source: BRADENHEAD
 Sample Type: GAS
 Analysis No: HS20230115
 Cust No: 35825-15160

Well/Lease Information

Customer Name:	HILCORP (BHD PROJECT)	Source:	BRADENHEAD
Well Name:	WOOD WN FEDERAL COM #1M; BHD	Well Flowing:	Y
County/State:	SAN JUAN NM	Pressure:	PSIG
Location:		Flow Temp:	DEG. F
Lease/PA/CA:		Ambient Temp:	DEG. F
Formation:	MV DK	Flow Rate:	MCF/D
Cust. Stn. No.:	3004530900	Sample Method:	Purge & Fill
	ELB98509	Sample Date:	07/05/2023
		Sample Time:	9.15 AM
	AREA 7 / RUN 0704	Sampled By:	CURT WILLIAMS
Heat Trace:		Sampled by (CO):	HILCORP
Remarks:			

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.4468	0.4483	0.0490	0.00	0.0043
CO2	0.0017	0.0017	0.0000	0.00	0.0000
Methane	88.9042	89.2077	15.1100	897.93	0.4924
Ethane	6.3303	6.3519	1.6970	112.03	0.0657
Propane	2.5944	2.6033	0.7170	65.28	0.0395
Iso-Butane	0.4620	0.4636	0.1520	15.02	0.0093
N-Butane	0.6351	0.6373	0.2010	20.72	0.0127
I-Pentane	0.2179	0.2186	0.0800	8.72	0.0054
N-Pentane	0.1504	0.1509	0.0550	6.03	0.0037
Hexane Plus	0.2572	0.2581	0.1150	13.56	0.0085
Total	100.0000	100.3414	18.1760	1139.28	0.6417

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.0028
BTU/CU.FT IDEAL:	1141.9
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1145.1
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1125.2
DRY BTU @ 15.025:	1168.0
REAL SPECIFIC GRAVITY:	0.6433

CYLINDER #:	066
CYLINDER PRESSURE:	59 PSIG
ANALYSIS DATE:	07/12/2023
ANALYSIS TIME:	07:51:00 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: 07/17/2023

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	WOOD WN FEDERAL COM #1M; BHD	BRADENHEAD	07/17/2023
Stn. No.:	3004530900	MV DK	35825-15160
Mtr. No.:	ELB98509		

Smpl Date: 07/05/2023
Test Date: 07/12/2023
Run No: HS20230115

Nitrogen: 0.4468
CO2: 0.0017
Methane: 88.9042
Ethane: 6.3303
Propane: 2.5944
I-Butane: 0.4620
N-Butane: 0.6351
I-Pentane: 0.2179
N-Pentane: 0.1504
Hexane+: 0.2572

BTU: 1145.1
GPM: 18.1760
SPG: 0.6433



Well Name: WOOD WN FEDERAL #1M;
 API #: 3004530900
 Source: CASING
 Sample Type: GAS
 Analysis No: HS20230116
 Cust No: 35825-15165

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
 Well Name: WOOD WN FEDERAL #1M; CSG
 County/State: SAN JUAN NM
 Location:
 Lease/PA/CA:
 Formation: MV/DK
 Cust. Stn. No.: 3004530900
 ELB98509

Source: CASING
 Well Flowing: Y
 Pressure: PSIG
 Flow Temp: DEG. F
 Ambient Temp: DEG. F
 Flow Rate: MCF/D
 Sample Method: Purge & Fill
 Sample Date: 07/05/2023
 Sample Time: 9.19 AM
 Sampled By: CURT WILLIAMS
 Sampled by (CO): HILCORP

AREA 7 / RUN 704

Heat Trace:

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.3548	0.3453	0.0390	0.00	0.0034
CO2	0.9995	0.9728	0.1710	0.00	0.0152
Methane	76.2683	74.2323	12.9860	770.31	0.4225
Ethane	9.6419	9.3845	2.5900	170.63	0.1001
Propane	5.9143	5.7564	1.6360	148.81	0.0900
Iso-Butane	1.3895	1.3524	0.4570	45.19	0.0279
N-Butane	1.8652	1.8154	0.5910	60.85	0.0374
I-Pentane	0.8738	0.8505	0.3210	34.96	0.0218
N-Pentane	0.7425	0.7227	0.2700	29.76	0.0185
Hexane Plus	1.9502	1.8981	0.8730	102.80	0.0645
Total	100.0000	97.3304	19.9340	1363.31	0.8013

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0046
 BTU/CU.FT IDEAL: 1366.5
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1372.8
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1348.9
 DRY BTU @ 15.025: 1400.3
 REAL SPECIFIC GRAVITY: 0.8047

CYLINDER #: 2142
 CYLINDER PRESSURE: PSIG
 ANALYSIS DATE: 07/11/2023
 ANALYSIS TIME: 04:47:00 PM
 ANALYSIS RUN BY: SARAH BALLARD

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: 07/17/2023

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	WOOD WN FEDERAL #1M; CSG	CASING	07/17/2023
Stn. No.:	3004530900	MV/DK	35825-15165
Mtr. No.:	ELB98509		

Smpl Date: 07/05/2023
Test Date: 07/11/2023
Run No: HS20230116

Nitrogen: 0.3548
CO2: 0.9995
Methane: 76.2683
Ethane: 9.6419
Propane: 5.9143
I-Butane: 1.3895
N-Butane: 1.8652
I-Pentane: 0.8738
N-Pentane: 0.7425
Hexane+: 1.9502

BTU: 1372.8
GPM: 19.9340
SPG: 0.8047



Well Name: WOOD WN FEDERAL #1M;
 API #: 3004530900
 Source: TUBING
 Sample Type: GAS
 Analysis No: HS20230117
 Cust No: 35825-15170

Well/Lease Information

Customer Name:	HILCORP (BHD PROJECT)	Source:	TUBING
Well Name:	WOOD WN FEDERAL #1M; TBG	Well Flowing:	Y
County/State:	SAN JUAN NM	Pressure:	PSIG
Location:		Flow Temp:	DEG. F
Lease/PA/CA:		Ambient Temp:	DEG. F
Formation:	MV / DK	Flow Rate:	MCF/D
Cust. Stn. No.:	3004530900	Sample Method:	
	ELB98509	Sample Date:	07/05/2023
	AREA 7 / RUN 704	Sample Time:	9.22 AM
Heat Trace:		Sampled By:	CURT WILLIAMS
Remarks:	PRESSURED WITH HELIUM TO 30 LBS.	Sampled by (CO):	HILCORP

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.3165	0.1118	0.0350	0.00	0.0031
CO2	0.8918	0.3150	0.1530	0.00	0.0136
Methane	81.1049	28.6475	13.7960	819.16	0.4492
Ethane	9.5166	3.3614	2.5540	168.42	0.0988
Propane	4.4503	1.5719	1.2300	111.97	0.0678
Iso-Butane	0.7800	0.2755	0.2560	25.36	0.0157
N-Butane	1.2146	0.4290	0.3840	39.62	0.0244
I-Pentane	0.4383	0.1548	0.1610	17.54	0.0109
N-Pentane	0.3295	0.1164	0.1200	13.21	0.0082
Hexane Plus	0.9575	0.3382	0.4280	50.47	0.0317
Total	100.0000	35.3215	19.1170	1245.75	0.7233

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.0036	CYLINDER #:	11
BTU/CU.FT IDEAL:	1248.6	CYLINDER PRESSURE:	2 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1253.1	ANALYSIS DATE:	07/11/2023
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1231.3	ANALYSIS TIME:	04:38:00 AM
DRY BTU @ 15.025:	1278.2	ANALYSIS RUN BY:	SARAH BALLARD
REAL SPECIFIC GRAVITY:	0.7256		

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: 07/17/2023

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	WOOD WN FEDERAL #1M; TBG	TUBING	07/17/2023
Stn. No.:	3004530900	MV / DK	35825-15170
Mtr. No.:	ELB98509		

Smpl Date: 07/05/2023
Test Date: 07/11/2023
Run No: HS20230117

Nitrogen: 0.3165
CO2: 0.8918
Methane: 81.1049
Ethane: 9.5166
Propane: 4.4503
I-Butane: 0.7800
N-Butane: 1.2146
I-Pentane: 0.4383
N-Pentane: 0.3295
Hexane+: 0.9575

BTU: 1253.1
GPM: 19.1170
SPG: 0.7256

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District III
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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 243772

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 243772
	Action Type: [UF-GA] Gas Analysis (GAS ANALYSIS)

CONDITIONS

Created By	Condition	Condition Date
mkuehling	doesn't appear to be same gas	9/20/2023