



NMOCD REC'D
9/24/20

Well Name: CULPEPPER MARTIN 13;
API #: API #3004511222
Source: BRADENHEAD
Sample Type: GAS
Analysis No: HS200219
Cust No: 35825-12990

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: CULPEPPER MARTIN 13; BHD
County/State: SAN JUAN NM
Location:
Lease/PA/CA: FEE
Formation: MV / DK
Cust. Stn. No.: API #3004511222
3583830

Source: BRADENHEAD
Well Flowing: Y
Pressure: 54 PSIG
Flow Temp: DEG. F
Ambient Temp: 90 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 08/21/2020
Sample Time: 10.55 AM
Sampled By: DANIEL RIOS
Sampled by (CO): HILCORP

AREA 2 / RUN 201

Heat Trace:

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.5038	0.5009	0.0560	0.00	0.0049
CO2	0.0053	0.0053	0.0010	0.00	0.0001
Methane	88.0383	87.5331	14.9650	889.19	0.4876
Ethane	5.7916	5.7584	1.5530	102.49	0.0601
Propane	2.9712	2.9542	0.8210	74.76	0.0452
Iso-Butane	0.9568	0.9513	0.3140	31.11	0.0192
N-Butane	0.8301	0.8253	0.2620	27.08	0.0167
I-Pentane	0.3615	0.3594	0.1330	14.46	0.0090
N-Pentane	0.2062	0.2050	0.0750	8.27	0.0051
Hexane Plus	0.3352	0.3333	0.1500	17.67	0.0111
Total	100.0000	99.4262	18.3300	1165.03	0.6591

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0029
BTU/CU.FT IDEAL: 1167.7
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1171.1
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1150.7
DRY BTU @ 15.025: 1194.6
REAL SPECIFIC GRAVITY: 0.6607

CYLINDER #: 4113
CYLINDER PRESSURE: 50 PSIG
ANALYSIS DATE: 08/25/2020
ANALYSIS TIME: 02:41:45 PM
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: 09/17/2020

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	CULPEPPER MARTIN 13; BHD	BRADENHEAD	09/17/2020
Stn. No.:	API #3004511222	MV / DK	35825-12990
Mtr. No.:	3583830		

Smpl Date:	08/21/2020
Test Date:	08/25/2020
Run No:	HS200219
Nitrogen:	0.5038
CO2:	0.0053
Methane:	88.0383
Ethane:	5.7916
Propane:	2.9712
I-Butane:	0.9568
N-Butane:	0.8301
I-Pentane:	0.3615
N-Pentane:	0.2062
Hexane+:	0.3352
BTU:	1171.1
GPM:	18.3300
SPG:	0.6607



Well Name: CULPEPPER MARTIN 13;
 API #: API #3004511222
 Source: CASING
 Sample Type: GAS
 Analysis No: HS200220
 Cust No: 35825-12995

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
 Well Name: CULPEPPER MARTIN 13; CSG
 County/State: SAN JUAN NM
 Location:
 Lease/PA/CA: FEE
 Formation: MV / DK
 Cust. Stn. No.: API #3004511222
 3583830

Source: CASING
 Well Flowing: Y
 Pressure: 74 PSIG
 Flow Temp: DEG. F
 Ambient Temp: 90 DEG. F
 Flow Rate: MCF/D
 Sample Method: Purge & Fill
 Sample Date: 08/21/2020
 Sample Time: 10.50 AM
 Sampled By: DANIEL RIOS
 Sampled by (CO): HILCORP

AREA 2 / RUN 201

Heat Trace:

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2370	0.2309	0.0260	0.00	0.0023
CO2	2.0252	1.9733	0.3470	0.00	0.0308
Methane	79.4696	77.4330	13.5230	802.64	0.4402
Ethane	9.4453	9.2032	2.5350	167.15	0.0981
Propane	3.7011	3.6063	1.0230	93.12	0.0563
Iso-Butane	0.8356	0.8142	0.2740	27.17	0.0168
N-Butane	1.1910	1.1605	0.3770	38.85	0.0239
I-Pentane	0.7925	0.7722	0.2910	31.71	0.0197
N-Pentane	0.6285	0.6124	0.2290	25.19	0.0157
Hexane Plus	1.6742	1.6313	0.7490	88.25	0.0554
Total	100.0000	97.4373	19.3740	1274.10	0.7591

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.004
 BTU/CU.FT IDEAL: 1277.0
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1282.2
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1259.9
 DRY BTU @ 15.025: 1307.9
 REAL SPECIFIC GRAVITY: 0.7619

CYLINDER #: 4167
 CYLINDER PRESSURE: 72 PSIG
 ANALYSIS DATE: 08/25/2020
 ANALYSIS TIME: 03:11:31 PM
 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: 09/17/2020

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	CULPEPPER MARTIN 13; CSG	CASING	09/17/2020
Stn. No.:	API #3004511222	MV / DK	35825-12995
Mtr. No.:	3583830		

Smpl Date:	08/21/2020
Test Date:	08/25/2020
Run No:	HS200220
Nitrogen:	0.2370
CO2:	2.0252
Methane:	79.4696
Ethane:	9.4453
Propane:	3.7011
I-Butane:	0.8356
N-Butane:	1.1910
I-Pentane:	0.7925
N-Pentane:	0.6285
Hexane+:	1.6742
BTU:	1282.2
GPM:	19.3740
SPG:	0.7619



Well Name: CULPEPPER MARTIN 13;
API #: API #3004511222
Source: INTERMEDIATE CASING
Sample Type: GAS
Analysis No: HS200221
Cust No: 35825-13000

Well/Lease Information

Customer Name:	HILCORP (BHD PROJECT)	Source:	INTERMEDIATE CASING
Well Name:	CULPEPPER MARTIN 13; INTRM	Well Flowing:	Y
County/State:	SAN JUAN NM	Pressure:	13 PSIG
Location:		Flow Temp:	DEG. F
Lease/PA/CA:	FEE	Ambient Temp:	90 DEG. F
Formation:	MV / DK	Flow Rate:	MCF/D
Cust. Stn. No.:	API #3004511222	Sample Method:	Purge & Fill
	3583830	Sample Date:	08/21/2020
		Sample Time:	11.05 AM
	AREA 2 / RUN 201	Sampled By:	DANIEL RIOS
Heat Trace:		Sampled by (CO):	HILCORP
Remarks:			

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.7960	0.7865	0.0880	0.00	0.0077
CO2	0.0223	0.0220	0.0040	0.00	0.0003
Methane	90.3128	89.2326	15.3480	912.16	0.5002
Ethane	4.6889	4.6328	1.2570	82.98	0.0487
Propane	2.3172	2.2895	0.6400	58.30	0.0353
Iso-Butane	0.4464	0.4411	0.1460	14.52	0.0090
N-Butane	0.6367	0.6291	0.2010	20.77	0.0128
I-Pentane	0.1979	0.1955	0.0730	7.92	0.0049
N-Pentane	0.1567	0.1548	0.0570	6.28	0.0039
Hexane Plus	0.4251	0.4200	0.1900	22.41	0.0141
Total	100.0000	98.8039	18.0040	1125.34	0.6369

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.0027	CYLINDER #:	4147
BTU/CU.FT IDEAL:	1127.9	CYLINDER PRESSURE:	10 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1131.0	ANALYSIS DATE:	08/25/2020
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1111.3	ANALYSIS TIME:	02:52:25 PM
DRY BTU @ 15.025:	1153.7	ANALYSIS RUN BY:	RICHARD WILSON
REAL SPECIFIC GRAVITY:	0.6383		

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: 09/17/2020

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	CULPEPPER MARTIN 13; INTRM	INTERMEDIATE CASING	09/17/2020
Stn. No.:	API #3004511222	MV / DK	35825-13000
Mtr. No.:	3583830		

Smpl Date: 08/21/2020
Test Date: 08/25/2020
Run No: HS200221

Nitrogen: 0.7960
CO2: 0.0223
Methane: 90.3128
Ethane: 4.6889
Propane: 2.3172
I-Butane: 0.4464
N-Butane: 0.6367
I-Pentane: 0.1979
N-Pentane: 0.1567
Hexane+: 0.4251

BTU: 1131.0
GPM: 18.0040
SPG: 0.6383



Well Name: CULPEPPER MARTIN 13;
 API #: API #3004511222
 Source: TUBING
 Sample Type: GAS
 Analysis No: HS200222
 Cust No: 35825-13005

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
 Well Name: CULPEPPER MARTIN 13; TBG
 County/State: SAN JUAN NM
 Location:
 Lease/PA/CA: FEE
 Formation: MV / DK
 Cust. Stn. No.: API #3004511222
 3583830

Source: TUBING
 Well Flowing: Y
 Pressure: 72 PSIG
 Flow Temp: DEG. F
 Ambient Temp: 90 DEG. F
 Flow Rate: MCF/D
 Sample Method: Purge & Fill
 Sample Date: 08/21/2020
 Sample Time: 11.00 AM
 Sampled By: DANIEL RIOS
 Sampled by (CO): HILCORP

AREA 2 / RUN 201

Heat Trace:

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2191	0.2149	0.0240	0.00	0.0021
CO2	0.9980	0.9790	0.1710	0.00	0.0152
Methane	81.4619	79.9092	13.8550	822.77	0.4512
Ethane	9.8668	9.6787	2.6470	174.61	0.1024
Propane	4.1526	4.0735	1.1480	104.48	0.0632
Iso-Butane	0.7296	0.7157	0.2400	23.73	0.0146
N-Butane	1.2104	1.1873	0.3830	39.49	0.0243
I-Pentane	0.4424	0.4340	0.1620	17.70	0.0110
N-Pentane	0.3246	0.3184	0.1180	13.01	0.0081
Hexane Plus	0.5946	0.5833	0.2660	31.34	0.0197
Total	100.0000	98.0940	19.0140	1227.13	0.7119

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0035
 BTU/CU.FT IDEAL: 1230.0
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1234.3
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1212.8
 DRY BTU @ 15.025: 1259.0
 REAL SPECIFIC GRAVITY: 0.7141

CYLINDER #: 7021
 CYLINDER PRESSURE: 74 PSIG
 ANALYSIS DATE: 08/25/2020
 ANALYSIS TIME: 03:59:13 PM
 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: 09/17/2020

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	CULPEPPER MARTIN 13; TBG	TUBING	09/17/2020
Stn. No.:	API #3004511222	MV / DK	35825-13005
Mtr. No.:	3583830		

Smpl Date:	08/21/2020
Test Date:	08/25/2020
Run No:	HS200222
Nitrogen:	0.2191
CO2:	0.9980
Methane:	81.4619
Ethane:	9.8668
Propane:	4.1526
I-Butane:	0.7296
N-Butane:	1.2104
I-Pentane:	0.4424
N-Pentane:	0.3246
Hexane+:	0.5946
BTU:	1234.3
GPM:	19.0140
SPG:	0.7141