



30-045-29998

2030 Afton Place
Farmington, NM 87401
(505) 325-6622Analysis No: HS190051
Cust No: 35825-11125**Well/Lease Information**Customer Name: HILCORP (BHD PROJECT)
Well Name: HELMS FED #1B; TBG
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation: MV
Cust. Stn. No.: 98012Source: TUBING
Well Flowing: N
Pressure: 81 PSIG
Flow Temp: DEG. F
Ambient Temp: 65 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 05/09/2019
Sample Time: 3.47 PM
Sampled By: MICHAEL GURULE
Sampled by (CO): HILCORPHeat Trace: AREA 3 / RUN 305
Remarks: NNMOC
MAY 21 2019
DISTRICT III**Analysis**

Component:	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2897	0.2845	0.0320	0.00	0.0028
CO2	0.8843	0.8684	0.1510	0.00	0.0134
Methane	78.4920	77.0781	13.3550	792.77	0.4348
Ethane	10.4689	10.2803	2.8100	185.27	0.1087
Propane	5.5775	5.4770	1.5420	140.34	0.0849
Iso-Butane	0.9392	0.9223	0.3080	30.54	0.0188
N-Butane	1.6158	1.5867	0.5110	52.71	0.0324
I-Pentane	0.4987	0.4897	0.1830	19.95	0.0124
N-Pentane	0.4237	0.4161	0.1540	16.98	0.0106
Hexane Plus	0.8102	0.7956	0.3630	42.71	0.0268
Total	100.0000	98.1987	19.4090	1281.27	0.7457

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0039
BTU/CU.FT IDEAL: 1284.2
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1289.1
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1266.7
DRY BTU @ 15.025: 1314.9
REAL SPECIFIC GRAVITY: 0.7482CYLINDER #: 5003
CYLINDER PRESSURE: 78 PSIG
ANALYSIS DATE: 05/15/2019
ANALYSIS TIME: 03:03:51 PM
ANALYSIS RUN BY: PATRICIA KING

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: 05/16/2019

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: HELMS FED #1B; TBG
Stn. No.: 98012
Mtr. No.:

TUBING
MV

05/16/2019
35825-11125

Smpl Date: 05/09/2019
Test Date: 05/15/2019
Run No: HS190051
Nitrogen: 0.2897
CO2: 0.8843
Methane: 78.4920
Ethane: 10.4689
Propane: 5.5775
I-Butane: 0.9392
N-Butane: 1.6158
I-Pentane: 0.4987
N-Pentane: 0.4237
Hexane+: 0.8102
BTU: 1289.1
GPM: 19.4090
SPG: 0.7482



30-045-29998

2030 Afton Place
Farmington, NM 87401
(505) 325-6622

Analysis No: HS190050
Cust No: 35825-11120

Well/Lease Information

Customer Name:	HILCORP (BHD PROJECT)	Source:	INTERMEDIATE
Well Name:	HELMS FEDERAL #1B; INT	Well Flowing:	N
County/State:	SAN JUAN NM	Pressure:	422 PSIG
Location:		Flow Temp:	DEG. F
Lease/PA/CA:		Ambient Temp:	45 DEG. F
Formation:	MV	Flow Rate:	MCF/D
Cust. Stn. No.:	98012	Sample Method:	Purge & Fill
		Sample Date:	05/09/2019
		Sample Time:	2.50 PM
		Sampled By:	MICHAEL GURULE
		Sampled by (CO):	HILCORP

Heat Trace: N

Remarks:

AREA 3 / RUN 305

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2219	0.2216	0.0240	0.00	0.0021
CO2	0.3639	0.3635	0.0620	0.00	0.0055
Methane	89.1104	89.0033	15.1440	900.02	0.4936
Ethane	6.3672	6.3595	1.7070	112.68	0.0661
Propane	2.3702	2.3673	0.6550	59.64	0.0361
Iso-Butane	0.4169	0.4164	0.1370	13.56	0.0084
N-Butane	0.5810	0.5803	0.1840	18.95	0.0117
I-Pentane	0.1804	0.1802	0.0660	7.22	0.0045
N-Pentane	0.1280	0.1278	0.0470	5.13	0.0032
Hexane Plus	0.2601	0.2598	0.1160	13.71	0.0086
Total	100.0000	99.8797	18.1420	1130.90	0.6398

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.0027
BTU/CU.FT IDEAL:	1133.5
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1136.6
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1116.8
DRY BTU @ 15.025:	1159.4
REAL SPECIFIC GRAVITY:	0.6412

CYLINDER #:	6220
CYLINDER PRESSURE:	365 PSIG
ANALYSIS DATE:	05/15/2019
ANALYSIS TIME:	03:56:59 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: 05/16/2019

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: HELMS FEDERAL #1B; INT
Stn. No.: 98012
Mtr. No.:

INTERMEDIATE
MV

05/16/2019
35825-11120

Smpl Date: 05/09/2019
Test Date: 05/15/2019
Run No: HS190050

Nitrogen: 0.2219
CO2: 0.3639
Methane: 89.1104
Ethane: 6.3672
Propane: 2.3702
I-Butane: 0.4169
N-Butane: 0.5810
I-Pentane: 0.1804
N-Pentane: 0.1280
Hexane+: 0.2601

BTU: 1136.6
GPM: 18.1420
SPG: 0.6412



30-045-29998

2030 Afton Place
Farmington, NM 87401
(505) 325-6622

Analysis No: HS190049
Cust No: 35825-11115

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: HELMS FED #1B; BHD
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation: MV
Cust. Stn. No.: 98012

Source: BRADENHEAD
Well Flowing: N
Pressure: 82 PSIG
Flow Temp: DEG. F
Ambient Temp: 45 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 05/09/2019
Sample Time: 2.30 PM
Sampled By: MICHAEL GURULE
Sampled by (CO): HILCORP

Heat Trace: N
Remarks: AREA 3 / RUN 305

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2500	0.2476	0.0280	0.00	0.0024
CO2	0.2820	0.2793	0.0480	0.00	0.0043
Methane	91.2792	90.3959	15.5110	921.92	0.5056
Ethane	4.8754	4.8282	1.3070	86.28	0.0506
Propane	1.7325	1.7157	0.4780	43.59	0.0264
Iso-Butane	0.3174	0.3143	0.1040	10.32	0.0064
N-Butane	0.5222	0.5171	0.1650	17.04	0.0105
I-Pentane	0.2173	0.2152	0.0800	8.69	0.0054
N-Pentane	0.1641	0.1625	0.0600	6.58	0.0041
Hexane Plus	0.3599	0.3564	0.1610	18.97	0.0119
Total	100.0000	99.0322	17.9420	1113.39	0.6276

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0026
BTU/CU.FT IDEAL: 1116.0
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1118.9
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1099.4
DRY BTU @ 15.025: 1141.3
REAL SPECIFIC GRAVITY: 0.6289

CYLINDER #: 6123
CYLINDER PRESSURE: 82 PSIG
ANALYSIS DATE: 05/15/2019
ANALYSIS TIME: 02:30:55 PM
ANALYSIS RUN BY: PATRICIA KING

GPM, BTU, and SPG calculations as shown above are based on current GPA constants.

GPA Standard: GPA-2261

GC: Danalyzer Model 500

GC Method: C6+ Gas

Last Cal/Verify: 05/16/2019



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: HELMS FED #1B; BHD
Stn. No.: 98012
Mtr. No.:

BRADENHEAD
MV

05/16/2019
35825-11115

Smpl Date: 05/09/2019
Test Date: 05/15/2019
Run No: HS190049

Nitrogen: 0.2500
CO2: 0.2820
Methane: 91.2792
Ethane: 4.8754
Propane: 1.7325
I-Butane: 0.3174
N-Butane: 0.5222
I-Pentane: 0.2173
N-Pentane: 0.1641
Hexane+: 0.3599

BTU: 1118.9
GPM: 17.9420
SPG: 0.6289