



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

Analysis No: HS190178
Cust No: 35825-11640

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: FEDERAL A 3E; BHD
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation: FC
Cust. Stn. No.: API # 3004523890

Source: BRADENHEAD
Well Flowing: N
Pressure: 28 PSIA
Flow Temp: 70 DEG. F
Ambient Temp: 70 DEG. F
Flow Rate: 0 MCF/D
Sample Method:
Sample Date: 07/19/2019
Sample Time: 8.15 AM
Sampled By: JACINTO CARDENAS
Sampled by (CO): HILCORP

Heat Trace: N
Remarks: AREA 2 / RUN 206

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.7421	0.7278	0.0820	0.00	0.0072
CO2	0.0156	0.0153	0.0030	0.00	0.0002
Methane	80.4829	78.9365	13.6900	812.88	0.4458
Ethane	9.0764	8.9020	2.4350	160.63	0.0942
Propane	5.7598	5.6491	1.5920	144.92	0.0877
Iso-Butane	1.2616	1.2374	0.4140	41.03	0.0253
N-Butane	1.3192	1.2939	0.4170	43.04	0.0265
I-Pentane	0.4559	0.4471	0.1670	18.24	0.0114
N-Pentane	0.3196	0.3135	0.1160	12.81	0.0080
Hexane Plus	0.5669	0.5560	0.2540	29.88	0.0188
Total	100.0000	98.0786	19.1700	1263.42	0.7250

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0036
BTU/CU.FT IDEAL: 1266.3
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1270.9
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1248.8
DRY BTU @ 15.025: 1296.4
REAL SPECIFIC GRAVITY: 0.7273

CYLINDER #: 4067
CYLINDER PRESSURE: 32 PSIG
ANALYSIS DATE: 07/29/2019
ANALYSIS TIME: 11:57:44 AM
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: 07/30/2019



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: FEDERAL A 3E; BHD
Stn. No.: API # 3004523890
Mtr. No.:

BRADENHEAD
FC

07/30/2019
35825-11640

Smpl Date: 07/19/2019
Test Date: 07/29/2019
Run No: HS190178
Nitrogen: 0.7421
CO2: 0.0156
Methane: 80.4829
Ethane: 9.0764
Propane: 5.7598
I-Butane: 1.2616
N-Butane: 1.3192
I-Pentane: 0.4559
N-Pentane: 0.3196
Hexane+: 0.5669
BTU: 1270.9
GPM: 19.1700
SPG: 0.7273



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

Analysis No: HS190180
Cust No: 35825-11650

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: **FEDERAL A 3E**; TBG
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation: FC
Cust. Stn. No.: API # **3004523890**

Source: TUBING
Well Flowing: N
Pressure: 20 PSIG
Flow Temp: 70 DEG. F
Ambient Temp: 70 DEG. F
Flow Rate: 0 MCF/D
Sample Method:
Sample Date: 07/19/2019
Sample Time: 8.20 AM
Sampled By: JACINTO CARDENAS
Sampled by (CO): HILCORP

Heat Trace: N
Remarks:

NMOC
AUG 06 2019
DISTRICT III

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.7397	0.7269	0.0820	0.00	0.0072
CO2	0.0195	0.0192	0.0030	0.00	0.0003
Methane	79.9725	78.5902	13.6060	807.72	0.4430
Ethane	9.0513	8.8948	2.4290	160.18	0.0940
Propane	5.7969	5.6967	1.6030	145.86	0.0883
Iso-Butane	1.2878	1.2655	0.4230	41.88	0.0258
N-Butane	1.3672	1.3436	0.4330	44.60	0.0274
I-Pentane	0.4979	0.4893	0.1830	19.92	0.0124
N-Pentane	0.3590	0.3528	0.1310	14.39	0.0089
Hexane Plus	0.9082	0.8925	0.4060	47.87	0.0301
Total	100.0000	98.2715	19.2990	1282.42	0.7373

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0038
BTU/CU.FT IDEAL: 1285.4
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1290.3
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1267.8
DRY BTU @ 15.025: 1316.1
REAL SPECIFIC GRAVITY: 0.7398

CYLINDER #: 6150
CYLINDER PRESSURE: 37 PSIG
ANALYSIS DATE: 07/29/2019
ANALYSIS TIME: 11:41:16 AM
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: 07/30/2019

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: FEDERAL A 3E; TBG
Stn. No.: API # 3004523890
Mtr. No.:

TUBING
FC

07/30/2019
35825-11650

Smpl Date: 07/19/2019
Test Date: 07/29/2019
Run No: HS190180
Nitrogen: 0.7397
CO2: 0.0195
Methane: 79.9725
Ethane: 9.0513
Propane: 5.7969
I-Butane: 1.2878
N-Butane: 1.3672
I-Pentane: 0.4979
N-Pentane: 0.3590
Hexane+: 0.9082
BTU: 1290.3
GPM: 19.2990
SPG: 0.7398



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

Analysis No: HS190179
Cust No: 35825-11645

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: FEDERAL A 3E; CSG
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation: FC
Cust. Stn. No.: API # 3004523890

Source: CASING
Well Flowing: N
Pressure: 29 PSIG
Flow Temp: 70 DEG. F
Ambient Temp: 70 DEG. F
Flow Rate: 0 MCF/D
Sample Method:
Sample Date: 07/19/2019
Sample Time: 8.25 AM
Sampled By: JACINTO CARDENAS
Sampled by (CO): HILCORP

Heat Trace: AREA 2 / RUN 206
N
Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.7480	0.7297	0.0830	0.00	0.0072
CO2	0.0180	0.0176	0.0030	0.00	0.0003
Methane	80.3590	78.3917	13.6700	811.63	0.4451
Ethane	9.0740	8.8519	2.4350	160.58	0.0942
Propane	5.7613	5.6203	1.5930	144.96	0.0877
Iso-Butane	1.2644	1.2334	0.4150	41.12	0.0254
N-Butane	1.3251	1.2927	0.4190	43.23	0.0266
I-Pentane	0.4626	0.4513	0.1700	18.51	0.0115
N-Pentane	0.3266	0.3186	0.1190	13.09	0.0081
Hexane Plus	0.6610	0.6448	0.2960	34.84	0.0219
Total	100.0000	97.5520	19.2030	1267.96	0.7280

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0037
BTU/CU.FT IDEAL: 1270.9
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1275.6
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1253.4
DRY BTU @ 15.025: 1301.1
REAL SPECIFIC GRAVITY: 0.7305

CYLINDER #: 6200
CYLINDER PRESSURE: 24 PSIG
ANALYSIS DATE: 07/29/2019
ANALYSIS TIME: 11:23:05 AM
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: 07/30/2019

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: FEDERAL A 3E; CSG
Stn. No.: API # 3004523890
Mtr. No.:

CASING
FC

07/30/2019
35825-11645

Smpl Date: 07/19/2019
Test Date: 07/29/2019
Run No: HS190179

Nitrogen: 0.7480
CO2: 0.0180
Methane: 80.3590
Ethane: 9.0740
Propane: 5.7613
I-Butane: 1.2644
N-Butane: 1.3251
I-Pentane: 0.4626
N-Pentane: 0.3266
Hexane+: 0.6610

BTU: 1275.6
GPM: 19.2030
SPG: 0.7305