



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

Analysis No: HS190233
Cust No: 35825-11920

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: O'SHEA 1M; TBG
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation: DK
Cust. Stn. No.: 3471430
API # 3004523618
AREA 2 / RUN 202
Heat Trace: N
Remarks:

Source: TUBING
Well Flowing: Y
Pressure: 160 PSIG
Flow Temp: 88 DEG. F
Ambient Temp: 88 DEG. F
Flow Rate: 0 MCF/D
Sample Method: Purge & Fill
Sample Date: 08/12/2019
Sample Time: 3:46 PM
Sampled By: NED H.
Sampled by (CO):

NMOC
AUG 28 2019
DISTRICT III

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.1933	0.1911	0.0210	0.00	0.0019
CO2	0.7349	0.7266	0.1260	0.00	0.0112
Methane	83.0199	82.0772	14.1170	838.50	0.4598
Ethane	9.3466	9.2405	2.5070	165.41	0.0970
Propane	3.7889	3.7459	1.0470	95.33	0.0577
Iso-Butane	0.7106	0.7025	0.2330	23.11	0.0143
N-Butane	0.9719	0.9609	0.3070	31.71	0.0195
I-Pentane	0.3651	0.3610	0.1340	14.61	0.0091
N-Pentane	0.2634	0.2604	0.0960	10.56	0.0066
Hexane Plus	0.6054	0.5985	0.2710	31.91	0.0200
Total	100.0000	98.8646	18.8590	1211.13	0.6971

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0033
BTU/CU.FT IDEAL: 1213.9
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1218.0
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1196.8
DRY BTU @ 15.025: 1242.4
REAL SPECIFIC GRAVITY: 0.6991

CYLINDER #: 4215
CYLINDER PRESSURE: 149 PSIG
ANALYSIS DATE: 08/20/2019
ANALYSIS TIME: 04:41:57 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

GC Method: C6+ Gas

Last Cal/Verify: 08/22/2019



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: O'SHEA 1M; TBG
Stn. No.: 3471430
Mtr. No.: API # 3004523618

TUBING
DK

08/22/2019
35825-11920

Smpl Date: 08/12/2019
Test Date: 08/20/2019
Run No: HS190233

Nitrogen: 0.1933
CO2: 0.7349
Methane: 83.0199
Ethane: 9.3466
Propane: 3.7889
I-Butane: 0.7106
N-Butane: 0.9719
I-Pentane: 0.3651
N-Pentane: 0.2634
Hexane+: 0.6054

BTU: 1218.0
GPM: 18.8590
SPG: 0.6991



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

Analysis No: HS190231
Cust No: 35825-11915

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: O'SHEA 1M; BHD
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation: DK
Cust. Stn. No.: 3471430
API # 3004523618
AREA 2 / RUN 202
Heat Trace: N
Remarks:

Source: BRADENHEAD
Well Flowing: Y
Pressure: 160 PSIG
Flow Temp: 88 DEG. F
Ambient Temp: 88 DEG. F
Flow Rate: 0 MCF/D
Sample Method: Purge & Fill
Sample Date: 08/12/2019
Sample Time: 3.48 PM
Sampled By: NED H.
Sampled by (CO):

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2095	0.2073	0.0230	0.00	0.0020
CO2	0.5520	0.5461	0.0940	0.00	0.0084
Methane	83.0612	82.1799	14.1240	838.92	0.4601
Ethane	9.3591	9.2598	2.5110	165.63	0.0972
Propane	3.8301	3.7895	1.0580	96.37	0.0583
Iso-Butane	0.7273	0.7196	0.2390	23.65	0.0146
N-Butane	1.0011	0.9905	0.3170	32.66	0.0201
I-Pentane	0.3710	0.3671	0.1360	14.84	0.0092
N-Pentane	0.2645	0.2617	0.0960	10.60	0.0066
Hexane Plus	0.6242	0.6176	0.2790	32.90	0.0207
Total	100.0000	98.9391	18.8770	1215.57	0.6971

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0033
BTU/CU.FT IDEAL: 1218.4
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1222.4
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1201.1
DRY BTU @ 15.025: 1246.9
REAL SPECIFIC GRAVITY: 0.6992

CYLINDER #: 6138
CYLINDER PRESSURE: 145 PSIG
ANALYSIS DATE: 08/21/2019
ANALYSIS TIME: 08:13:46 AM
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

GC Method: C6+ Gas

Last Cal/Verify: 08/22/2019



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: O'SHEA 1M; BHD
Stn. No.: 3471430
Mtr. No.: API # 3004523618

BRADENHEAD
DK

08/22/2019
35825-11915

Smpl Date: 08/12/2019
Test Date: 08/21/2019
Run No: HS190231

Nitrogen: 0.2095
CO2: 0.5520
Methane: 83.0612
Ethane: 9.3591
Propane: 3.8301
I-Butane: 0.7273
N-Butane: 1.0011
I-Pentane: 0.3710
N-Pentane: 0.2645
Hexane+: 0.6242

BTU: 1222.4
GPM: 18.8770
SPG: 0.6992



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

Analysis No: HS190232
Cust No: 35825-11910

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: O;SHEA 1M; CSG
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation: DK
Cust. Stn. No.: 3471430
API # 3004523618
AREA 2 / RUN 202
Heat Trace: N
Remarks:

Source: CASING
Well Flowing: Y
Pressure: 160 PSIG
Flow Temp: 88 DEG. F
Ambient Temp: 88 DEG. F
Flow Rate: 0 MCF/D
Sample Method: Purge & Fill
Sample Date: 08/12/2019
Sample Time: 3.42 PM
Sampled By: NED H.
Sampled by (CO):

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2155	0.2133	0.0240	0.00	0.0021
CO2	0.7493	0.7417	0.1280	0.00	0.0114
Methane	82.9966	82.1497	14.1130	838.27	0.4597
Ethane	9.3376	9.2423	2.5050	165.25	0.0969
Propane	3.7815	3.7429	1.0450	95.15	0.0576
Iso-Butane	0.7153	0.7080	0.2350	23.26	0.0144
N-Butane	0.9721	0.9622	0.3070	31.71	0.0195
I-Pentane	0.3657	0.3620	0.1340	14.63	0.0091
N-Pentane	0.2643	0.2616	0.0960	10.59	0.0066
Hexane Plus	0.6021	0.5960	0.2690	31.74	0.0199
Total	100.0000	98.9797	18.8560	1210.60	0.6972

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0033
BTU/CU.FT IDEAL: 1213.4
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1217.4
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1196.2
DRY BTU @ 15.025: 1241.8
REAL SPECIFIC GRAVITY: 0.6992

CYLINDER #: 6071
CYLINDER PRESSURE: 151 PSIG
ANALYSIS DATE: 08/21/2019
ANALYSIS TIME: 07:58:09 AM
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

GC Method: C6+ Gas

Last Cal/Verify: 08/22/2019



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: O;SHEA 1M; CSG
Stn. No.: 3471430
Mtr. No.: API # 3004523618

CASING
DK

08/22/2019
35825-11910

Smpl Date: 08/12/2019
Test Date: 08/21/2019
Run No: HS190232

Nitrogen: 0.2155
CO2: 0.7493
Methane: 82.9966
Ethane: 9.3376
Propane: 3.7815
I-Butane: 0.7153
N-Butane: 0.9721
I-Pentane: 0.3657
N-Pentane: 0.2643
Hexane+: 0.6021

BTU: 1217.4
GPM: 18.8560
SPG: 0.6992