



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

Analysis No: HS190205
Cust No: 35825-11775

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: LANDAUER 1E; BHD
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation: MV
Cust. Stn. No.: API #3004523791

Source: BRADENHEAD
Well Flowing: Y
Pressure: 138 PSIG
Flow Temp: DEG. F
Ambient Temp: 80 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 07/26/2019
Sample Time: 10.00 AM
Sampled By: DANIEL RIOS
Sampled by (CO): HILCORP

Heat Trace: AREA 2 / RUN 211
Remarks: N

NMOC
SEP 09 2019
DISTRICT III

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.1574	0.1566	0.0170	0.00	0.0015
CO2	0.0150	0.0149	0.0030	0.00	0.0002
Methane	93.9490	93.4719	15.9630	948.88	0.5204
Ethane	2.6413	2.6279	0.7080	46.74	0.0274
Propane	1.4896	1.4820	0.4110	37.48	0.0227
Iso-Butane	0.7617	0.7578	0.2500	24.77	0.0153
N-Butane	0.3708	0.3689	0.1170	12.10	0.0074
I-Pentane	0.3611	0.3593	0.1320	14.45	0.0090
N-Pentane	0.0319	0.0317	0.0120	1.28	0.0008
Hexane Plus	0.2222	0.2211	0.0990	11.71	0.0074
Total	100.0000	99.4921	17.7120	1097.41	0.6121

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0025
BTU/CU.FT IDEAL: 1100.0
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1102.7
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1083.5
DRY BTU @ 15.025: 1124.8
REAL SPECIFIC GRAVITY: 0.6134

CYLINDER #: 4029
CYLINDER PRESSURE: 138 PSIG
ANALYSIS DATE: 08/08/2019
ANALYSIS TIME: 09:13:58 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

Last Cal/Verify: 08/09/2019

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: LANDAUER 1E; BHD
Stn. No.: API #3004523791
Mtr. No.:

BRADENHEAD
MV

08/09/2019
35825-11775

Smpl Date: 07/26/2019
Test Date: 08/08/2019
Run No: HS190205

Nitrogen: 0.1574
CO2: 0.0150
Methane: 93.9490
Ethane: 2.6413
Propane: 1.4896
I-Butane: 0.7617
N-Butane: 0.3708
I-Pentane: 0.3611
N-Pentane: 0.0319
Hexane+: 0.2222

BTU: 1102.7
GPM: 17.7120
SPG: 0.6134



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

Analysis No: HS190206
Cust No: 35825-11780

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: LANDAUER 1E; CSG
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation: MV
Cust. Stn. No.: API #3004523791

Source: CASING
Well Flowing: Y
Pressure: 64 PSIG
Flow Temp: DEG. F
Ambient Temp: 80 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 07/26/2019
Sample Time: 10.05 AM
Sampled By: DANIEL RIOS
Sampled by (CO): HILCORP

Heat Trace: AREA 2 / RUN 211
N

Remarks: PRESSURED WITH HELIUM TO 30 LBS.

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.4659	0.2026	0.0510	0.00	0.0045
CO2	1.3141	0.5714	0.2250	0.00	0.0200
Methane	89.9518	39.1130	15.2870	908.51	0.4982
Ethane	5.1902	2.2568	1.3910	91.85	0.0539
Propane	1.6271	0.7075	0.4490	40.94	0.0248
Iso-Butane	0.2969	0.1291	0.0970	9.65	0.0060
N-Butane	0.4135	0.1798	0.1310	13.49	0.0083
I-Pentane	0.1113	0.0484	0.0410	4.45	0.0028
N-Pentane	0.0846	0.0368	0.0310	3.39	0.0021
Hexane Plus	0.5446	0.2368	0.2430	28.71	0.0180
Total	100.0000	43.4822	17.9460	1101.00	0.6385

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0027
BTU/CU.FT IDEAL: 1103.5
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1106.5
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1087.2
DRY BTU @ 15.025: 1128.7
REAL SPECIFIC GRAVITY: 0.64

CYLINDER #: 4036
CYLINDER PRESSURE: 5 PSIG
ANALYSIS DATE: 08/07/2019
ANALYSIS TIME: 04:19:00 PM
ANALYSIS RUN BY: SHYANN ELLEDGE

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: 08/09/2019



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: LANDAUER 1E; CSG
Stn. No.: API #3004523791
Mtr. No.:

CASING
MV

08/09/2019
35825-11780

Smpl Date: 07/26/2019
Test Date: 08/07/2019
Run No: HS190206

Nitrogen: 0.4659
CO2: 1.3141
Methane: 89.9518
Ethane: 5.1902
Propane: 1.6271
I-Butane: 0.2969
N-Butane: 0.4135
I-Pentane: 0.1113
N-Pentane: 0.0846
Hexane+: 0.5446

BTU: 1106.5
GPM: 17.9460
SPG: 0.6400



2030 Afton Place
Farmington, NM 87401
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Analysis No: HS190207
Cust No: 35825-11785

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: LANDAUER 1E; TBG
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation: MV
Cust. Stn. No.: API #3004523791

Source: TUBING
Well Flowing: Y
Pressure: 64 PSIG
Flow Temp: DEG. F
Ambient Temp: 80 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 07/26/2019
Sample Time: 10.06 AM
Sampled By: DANIEL RIOS
Sampled by (CO): HILCORP

AREA 2 / RUN 211

Heat Trace: N
Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.5998	0.5969	0.0660	0.00	0.0058
CO2	1.5008	1.4935	0.2570	0.00	0.0228
Methane	88.5102	88.0784	15.0430	893.95	0.4903
Ethane	5.8740	5.8454	1.5750	103.95	0.0610
Propane	1.8226	1.8137	0.5030	45.86	0.0277
Iso-Butane	0.3237	0.3221	0.1060	10.53	0.0065
N-Butane	0.4418	0.4396	0.1400	14.41	0.0089
I-Pentane	0.1710	0.1702	0.0630	6.84	0.0043
N-Pentane	0.1329	0.1323	0.0480	5.33	0.0033
Hexane Plus	0.6232	0.6202	0.2790	32.85	0.0206
Total	100.0000	99.5123	18.0800	1113.72	0.6512

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0028
BTU/CU.FT IDEAL: 1116.3
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1119.4
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1099.9
DRY BTU @ 15.025: 1141.8
REAL SPECIFIC GRAVITY: 0.6527

CYLINDER #: 4192
CYLINDER PRESSURE: 46 PSIG
ANALYSIS DATE: 08/08/2019
ANALYSIS TIME: 09:00:44 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: 08/09/2019



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: LANDAUER 1E; TBG
Stn. No.: API #3004523791
Mtr. No.:

TUBING
MV

08/09/2019
35825-11785

Smpl Date: 07/26/2019
Test Date: 08/08/2019
Run No: HS190207

Nitrogen: 0.5998
CO2: 1.5008
Methane: 88.5102
Ethane: 5.8740
Propane: 1.8226
I-Butane: 0.3237
N-Butane: 0.4418
I-Pentane: 0.1710
N-Pentane: 0.1329
Hexane+: 0.6232

BTU: 1119.4
GPM: 18.0800
SPG: 0.6527