



OCD Received
8/10/2020

Well Name: GRENIER B #004E RTU;
API #: API #3004529406
Source: BRADENHEAD
Sample Type: GAS
Analysis No: HS200147
Cust No: 35825-12700

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: GRENIER B #004E RTU; BHD
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation: DK
Cust. Stn. No.: API #3004529406
WIH35829
AREA 3 / RUN 306
Heat Trace: N
Remarks:

Source: BRADENHEAD
Well Flowing: Y
Pressure: 36 PSIA
Flow Temp: DEG. F
Ambient Temp: 90 DEG. F
Flow Rate: 100 MCF/D
Sample Method:
Sample Date: 07/28/2020
Sample Time: 3.29 PM
Sampled By: LIONEL GLEASON
Sampled by (CO): HILCORP

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	1.7988	1.7933	0.1980	0.00	0.0174
CO2	0.0016	0.0016	0.0000	0.00	0.0000
Methane	91.8434	91.5632	15.6020	927.62	0.5087
Ethane	4.5023	4.4886	1.2070	79.68	0.0467
Propane	1.1789	1.1753	0.3250	29.66	0.0179
Iso-Butane	0.2847	0.2838	0.0930	9.26	0.0057
N-Butane	0.2178	0.2171	0.0690	7.11	0.0044
I-Pentane	0.0851	0.0848	0.0310	3.40	0.0021
N-Pentane	0.0257	0.0256	0.0090	1.03	0.0006
Hexane Plus	0.0617	0.0615	0.0280	3.25	0.0020
Total	100.0000	99.6948	17.5620	1061.01	0.6057

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0023
BTU/CU.FT IDEAL: 1063.5
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1065.9
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1047.4
DRY BTU @ 15.025: 1087.2
REAL SPECIFIC GRAVITY: 0.6069

CYLINDER #: 127
CYLINDER PRESSURE: 109 PSIG
ANALYSIS DATE: 08/06/2020
ANALYSIS TIME: 02:09:27 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: 08/07/2020

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: GRENIER B #004E RTU; BHD
Stn. No.: API #3004529406
Mtr. No.: WIH35829

BRADENHEAD
DK

08/07/2020
35825-12700

Smpl Date: 07/28/2020
Test Date: 08/06/2020
Run No: HS200147

Nitrogen: 1.7988
CO2: 0.0016
Methane: 91.8434
Ethane: 4.5023
Propane: 1.1789
I-Butane: 0.2847
N-Butane: 0.2178
I-Pentane: 0.0851
N-Pentane: 0.0257
Hexane+: 0.0617

BTU: 1065.9
GPM: 17.5620
SPG: 0.6069



Well Name: GRENIER B #004E RTU;
 API #: API #3004529406
 Source: CASING
 Sample Type: GAS
 Analysis No: HS200148
 Cust No: 35825-12705

Well/Lease Information

Customer Name:	HILCORP (BHD PROJECT)	Source:	CASING
Well Name:	GRENIER B #004E RTU; CSG	Well Flowing:	Y
County/State:	SAN JUAN NM	Pressure:	36 PSIA
Location:		Flow Temp:	DEG. F
Lease/PA/CA:		Ambient Temp:	90 DEG. F
Formation:	DK	Flow Rate:	100 MCF/D
Cust. Stn. No.:	API #3004529406	Sample Method:	
	WIH35829	Sample Date:	07/28/2020
	AREA 3 / RUN 306	Sample Time:	3.26 PM
Heat Trace:	N	Sampled By:	LIONEL GLEASON
Remarks:		Sampled by (CO):	HILCORP

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.5107	0.5119	0.0560	0.00	0.0049
CO2	0.3116	0.3124	0.0530	0.00	0.0047
Methane	88.1242	88.3395	14.9780	890.05	0.4881
Ethane	6.4052	6.4208	1.7170	113.35	0.0665
Propane	2.9911	2.9984	0.8260	75.26	0.0455
Iso-Butane	0.3601	0.3610	0.1180	11.71	0.0072
N-Butane	0.7054	0.7071	0.2230	23.01	0.0142
I-Pentane	0.1788	0.1792	0.0660	7.15	0.0045
N-Pentane	0.1458	0.1462	0.0530	5.84	0.0036
Hexane Plus	0.2671	0.2678	0.1190	14.08	0.0088
Total	100.0000	100.2443	18.2090	1140.47	0.6481

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.0028	CYLINDER #:	43
BTU/CU.FT IDEAL:	1143.1	CYLINDER PRESSURE:	556 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1146.3	ANALYSIS DATE:	08/06/2020
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1126.4	ANALYSIS TIME:	01:41:11 AM
DRY BTU @ 15.025:	1169.3	ANALYSIS RUN BY:	RICHARD WILSON
REAL SPECIFIC GRAVITY:	0.6497		

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: 08/07/2020

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	GRENIER B #004E RTU; CSG	CASING	08/07/2020
Stn. No.:	API #3004529406	DK	35825-12705
Mtr. No.:	WIH35829		

Smpl Date:	07/28/2020
Test Date:	08/06/2020
Run No:	HS200148
Nitrogen:	0.5107
CO2:	0.3116
Methane:	88.1242
Ethane:	6.4052
Propane:	2.9911
I-Butane:	0.3601
N-Butane:	0.7054
I-Pentane:	0.1788
N-Pentane:	0.1458
Hexane+:	0.2671
BTU:	1146.3
GPM:	18.2090
SPG:	0.6497



Well Name: GRENIER B #004E RTU;
API #: API #3004529406
Source: TUBING
Sample Type: GAS
Analysis No: HS200149
Cust No: 35825-12710

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: GRENIER B #004E RTU; TBG
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation: DK
Cust. Stn. No.: API #3004529406
WIH35829
AREA 3 / RUN 306
Heat Trace: N
Remarks:

Source: TUBING
Well Flowing: Y
Pressure: 36 PSIA
Flow Temp: DEG. F
Ambient Temp: 90 DEG. F
Flow Rate: 100 MCF/D
Sample Method:
Sample Date: 07/28/2020
Sample Time: 3.21 PM
Sampled By: LIONEL GLEASON
Sampled by (CO): HILCORP

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.3846	0.3847	0.0420	0.00	0.0037
CO2	0.3223	0.3224	0.0550	0.00	0.0049
Methane	87.9521	87.9706	14.9500	888.32	0.4872
Ethane	6.4114	6.4128	1.7190	113.46	0.0666
Propane	3.0032	3.0038	0.8300	75.56	0.0457
Iso-Butane	0.3653	0.3654	0.1200	11.88	0.0073
N-Butane	0.7172	0.7174	0.2270	23.40	0.0144
I-Pentane	0.1866	0.1866	0.0680	7.47	0.0046
N-Pentane	0.1544	0.1544	0.0560	6.19	0.0038
Hexane Plus	0.5029	0.5030	0.2250	26.51	0.0166
Total	100.0000	100.0211	18.2920	1152.78	0.6549

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0029
BTU/CU.FT IDEAL: 1155.4
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1158.8
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1138.6
DRY BTU @ 15.025: 1182.0
REAL SPECIFIC GRAVITY: 0.6566

CYLINDER #: 115
CYLINDER PRESSURE: 68 PSIG
ANALYSIS DATE: 08/06/2020
ANALYSIS TIME: 01:14:23 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: 08/07/2020

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	GRENIER B #004E RTU; TBG	TUBING	08/07/2020
Stn. No.:	API #3004529406	DK	35825-12710
Mtr. No.:	WIH35829		

Smpl Date: 07/28/2020
Test Date: 08/06/2020
Run No: HS200149

Nitrogen: 0.3846
CO2: 0.3223
Methane: 87.9521
Ethane: 6.4114
Propane: 3.0032
I-Butane: 0.3653
N-Butane: 0.7172
I-Pentane: 0.1866
N-Pentane: 0.1544
Hexane+: 0.5029

BTU: 1158.8
GPM: 18.2920
SPG: 0.6566