



NMOCD REC'D
9/24/20

Well Name: FEDERAL A 3E; BHD
API #: API # 3004523890
Source: BRADENHEAD
Sample Type: GAS
Analysis No: HS200062
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
324756-309
AREA 2 / RUN 206
Heat Trace: N
Remarks: WELL SHUT IN

Source: BRADENHEAD
Well Flowing: N
Pressure: PSIG
Flow Temp: DEG. F
Ambient Temp: DEG. F
Flow Rate: MCF/D
Sample Method:
Sample Date: 07/09/2020
Sample Time: 9.18 AM
Sampled By: JACINTO CARDENAS
Sampled by (CO): HILCORP

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.7802	0.7628	0.0860	0.00	0.0075
CO2	0.0333	0.0326	0.0060	0.00	0.0005
Methane	80.2998	78.5131	13.6590	811.03	0.4448
Ethane	9.1629	8.9590	2.4590	162.16	0.0951
Propane	5.8103	5.6810	1.6060	146.19	0.0885
Iso-Butane	1.2863	1.2577	0.4220	41.83	0.0258
N-Butane	1.3631	1.3328	0.4310	44.47	0.0274
I-Pentane	0.4503	0.4403	0.1650	18.02	0.0112
N-Pentane	0.3141	0.3071	0.1140	12.59	0.0078
Hexane Plus	0.4997	0.4886	0.2240	26.34	0.0165
Total	100.0000	97.7750	19.1720	1262.62	0.7252

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0036
BTU/CU.FT IDEAL: 1265.5
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1270.1
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1248.0
DRY BTU @ 15.025: 1295.5
REAL SPECIFIC GRAVITY: 0.7275

CYLINDER #: 6246
CYLINDER PRESSURE: 32 PSIG
ANALYSIS DATE: 07/14/2020
ANALYSIS TIME: 08:29:58 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: 09/17/2020

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: FEDERAL A 3E; BHD
Stn. No.: API # 3004523890
Mtr. No.: 324756-309

BRADENHEAD
FC

09/17/2020
35825-11640

Smpl Date:	07/09/2020	07/19/2019
Test Date:	07/14/2020	07/29/2019
Run No:	HS200062	HS190178
Nitrogen:	0.7802	0.7421
CO2:	0.0333	0.0156
Methane:	80.2998	80.4829
Ethane:	9.1629	9.0764
Propane:	5.8103	5.7598
I-Butane:	1.2863	1.2616
N-Butane:	1.3631	1.3192
I-Pentane:	0.4503	0.4559
N-Pentane:	0.3141	0.3196
Hexane+:	0.4997	0.5669
BTU:	1270.1	1270.9
GPM:	19.1720	19.1700
SPG:	0.7275	0.7273



Well Name: FEDERAL A 3E; CSG
 API #: API # 3004523890
 Source: CASING
 Sample Type: GAS
 Analysis No: HS200063
 Cust No: 35825-11645

Well/Lease Information

Customer Name:	HILCORP (BHD PROJECT)	Source:	CASING
Well Name:	FEDERAL A 3E; CSG	Well Flowing:	N
County/State:	SAN JUAN NM	Pressure:	PSIG
Location:		Flow Temp:	DEG. F
Lease/PA/CA:		Ambient Temp:	72 DEG. F
Formation:	FC	Flow Rate:	MCF/D
Cust. Stn. No.:	API # 3004523890 34756-309	Sample Method:	
	AREA 2 / RUN 206	Sample Date:	07/09/2020
Heat Trace:	N	Sample Time:	9.00 AM
Remarks:	WELL SHUT IN	Sampled By:	JACINTO CARDENAS
		Sampled by (CO):	HILCORP

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	1.0817	1.0580	0.1190	0.00	0.0105
CO2	0.2137	0.2090	0.0370	0.00	0.0032
Methane	79.7153	77.9673	13.5610	805.12	0.4415
Ethane	9.1387	8.9383	2.4520	161.73	0.0949
Propane	5.8080	5.6806	1.6060	146.14	0.0884
Iso-Butane	1.2897	1.2614	0.4230	41.94	0.0259
N-Butane	1.3917	1.3612	0.4400	45.40	0.0279
I-Pentane	0.4568	0.4468	0.1680	18.28	0.0114
N-Pentane	0.3213	0.3143	0.1170	12.88	0.0080
Hexane Plus	0.5831	0.5703	0.2610	30.74	0.0193
Total	100.0000	97.8072	19.1840	1262.22	0.7310

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.0037	CYLINDER #:	6182
BTU/CU.FT IDEAL:	1265.1	CYLINDER PRESSURE:	31 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1269.7	ANALYSIS DATE:	07/14/2020
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1247.6	ANALYSIS TIME:	08:40:41 AM
DRY BTU @ 15.025:	1295.1	ANALYSIS RUN BY:	RICHARD WILSON
REAL SPECIFIC GRAVITY:	0.7334		

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: 09/17/2020

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: FEDERAL A 3E; CSG
Stn. No.: API # 3004523890
Mtr. No.: 34756-309

CASING
FC

09/17/2020
35825-11645

Smpl Date:	07/09/2020	07/19/2019
Test Date:	07/14/2020	07/29/2019
Run No:	HS200063	HS190179
Nitrogen:	1.0817	0.7480
CO2:	0.2137	0.0180
Methane:	79.7153	80.3590
Ethane:	9.1387	9.0740
Propane:	5.8080	5.7613
I-Butane:	1.2897	1.2644
N-Butane:	1.3917	1.3251
I-Pentane:	0.4568	0.4626
N-Pentane:	0.3213	0.3266
Hexane+:	0.5831	0.6610
BTU:	1269.7	1275.6
GPM:	19.1840	19.2030
SPG:	0.7334	0.7305



Well Name: FEDERAL A 3E; TBG
 API #: API # 3004523890
 Source: TUBING
 Sample Type: GAS
 Analysis No: HS200064
 Cust No: 35825-11650

Well/Lease Information

Customer Name:	HILCORP (BHD PROJECT)	Source:	TUBING
Well Name:	FEDERAL A 3E; TBG	Well Flowing:	N
County/State:	SAN JUAN NM	Pressure:	PSIG
Location:		Flow Temp:	DEG. F
Lease/PA/CA:		Ambient Temp:	72 DEG. F
Formation:	FC	Flow Rate:	MCF/D
Cust. Stn. No.:	API # 3004523890 34756-309	Sample Method:	
	AREA 2 / RUN 206	Sample Date:	07/09/2020
Heat Trace:	N	Sample Time:	9.15 AM
Remarks:	WELL SHUT IN	Sampled By:	JACINTO CARDENAS
		Sampled by (CO):	HILCORP

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.7627	0.7412	0.0840	0.00	0.0074
CO2	0.0228	0.0222	0.0040	0.00	0.0003
Methane	80.0377	77.7814	13.6160	808.38	0.4433
Ethane	9.1088	8.8520	2.4440	161.20	0.0946
Propane	5.8068	5.6431	1.6050	146.10	0.0884
Iso-Butane	1.2828	1.2466	0.4210	41.72	0.0257
N-Butane	1.3701	1.3315	0.4330	44.70	0.0275
I-Pentane	0.5057	0.4914	0.1860	20.23	0.0126
N-Pentane	0.3603	0.3501	0.1310	14.44	0.0090
Hexane Plus	0.7423	0.7214	0.3320	39.13	0.0246
Total	100.0000	97.1809	19.2560	1275.90	0.7334

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.0037	CYLINDER #:	6200
BTU/CU.FT IDEAL:	1278.9	CYLINDER PRESSURE:	29 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1283.6	ANALYSIS DATE:	07/14/2020
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1261.3	ANALYSIS TIME:	09:01:51 AM
DRY BTU @ 15.025:	1309.3	ANALYSIS RUN BY:	SHYANN ELLEDGE
REAL SPECIFIC GRAVITY:	0.7358		

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: 09/17/2020

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: FEDERAL A 3E; TBG
Stn. No.: API # 3004523890
Mtr. No.: 34756-309

TUBING
FC

09/17/2020
35825-11650

Smpl Date:	07/09/2020	07/19/2019
Test Date:	07/14/2020	07/29/2019
Run No:	HS200064	HS190180
Nitrogen:	0.7627	0.7397
CO2:	0.0228	0.0195
Methane:	80.0377	79.9725
Ethane:	9.1088	9.0513
Propane:	5.8068	5.7969
I-Butane:	1.2828	1.2878
N-Butane:	1.3701	1.3672
I-Pentane:	0.5057	0.4979
N-Pentane:	0.3603	0.3590
Hexane+:	0.7423	0.9082
BTU:	1283.6	1290.3
GPM:	19.2560	19.2990
SPG:	0.7358	0.7398