



Well Name: FEDERAL PIONEER #1E;
 API #: API# 3004533473
 Source: BRADENHEAD
 Sample Type: GAS
 Analysis No: HS2021012
 Cust No: 35825-10600

Well/Lease Information

Customer Name:	HILCORP (BHD PROJECT)	Source:	BRADENHEAD
Well Name:	FEDERAL PIONEER #1E; BHD	Well Flowing:	Y
County/State:	SAN JUAN NM	Pressure:	178 PSIG
Location:		Flow Temp:	DEG. F
Lease/PA/CA:		Ambient Temp:	DEG. F
Formation:	DK	Flow Rate:	MCF/D
Cust. Stn. No.:	API# 3004533473	Sample Method:	Purge & Fill
	14044	Sample Date:	04/21/2021
	AREA 2 / RUN 0209	Sample Time:	1.00 PM
Heat Trace:	N	Sampled By:	JESSE R.
Remarks:		Sampled by (CO):	HILCORP

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	2.2505	2.2039	0.2480	0.00	0.0218
CO2	0.0028	0.0027	0.0000	0.00	0.0000
Methane	94.1202	92.1707	15.9860	950.61	0.5213
Ethane	3.0717	3.0081	0.8230	54.36	0.0319
Propane	0.3701	0.3624	0.1020	9.31	0.0056
Iso-Butane	0.1413	0.1384	0.0460	4.59	0.0028
N-Butane	0.0138	0.0135	0.0040	0.45	0.0003
I-Pentane	0.0140	0.0137	0.0050	0.56	0.0003
N-Pentane	0.0000	0.0000	0.0000	0.00	0.0000
Hexane Plus	0.0156	0.0153	0.0070	0.82	0.0005
Total	100.0000	97.9287	17.2210	1020.71	0.5846

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.0021	CYLINDER #:	6209
BTU/CU.FT IDEAL:	1023.1	CYLINDER PRESSURE:	182 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1025.2	ANALYSIS DATE:	04/26/2021
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1007.4	ANALYSIS TIME:	01:41:33 AM
DRY BTU @ 15.025:	1045.7	ANALYSIS RUN BY:	RICHARD WILSON
REAL SPECIFIC GRAVITY:	0.5856		

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: 04/28/2021

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	FEDERAL PIONEER #1E; BHD	BRADENHEAD	04/28/2021
Stn. No.:	API# 3004533473	DK	35825-10600
Mtr. No.:	14044		

Smpl Date:	04/21/2021	08/24/2018
Test Date:	04/26/2021	09/04/2018
Run No:	HS2021012	HS180156
Nitrogen:	2.2505	2.2936
CO2:	0.0028	0.0160
Methane:	94.1202	94.0811
Ethane:	3.0717	2.8671
Propane:	0.3701	0.4198
I-Butane:	0.1413	0.1428
N-Butane:	0.0138	0.0353
I-Pentane:	0.0140	0.0245
N-Pentane:	0.0000	0.0106
Hexane+:	0.0156	0.1092
BTU:	1025.2	1029.0
GPM:	17.2210	17.2390
SPG:	0.5856	0.5888



Well Name: FEDERAL PIONEER #1E;
 API #: API# 3004533473
 Source: CASING
 Sample Type: GAS
 Analysis No: HS2021013
 Cust No: 35825-10605

Well/Lease Information

Customer Name:	HILCORP (BHD PROJECT)	Source:	CASING
Well Name:	FEDERAL PIONEER #1E; CSG	Well Flowing:	Y
County/State:	SAN JUAN NM	Pressure:	174 PSIG
Location:		Flow Temp:	DEG. F
Lease/PA/CA:		Ambient Temp:	DEG. F
Formation:	DK	Flow Rate:	MCF/D
Cust. Stn. No.:	API# 3004533473	Sample Method:	Purge & Fill
	14004	Sample Date:	04/21/2021
	AREA 2 / RUN 0209	Sample Time:	1.00 PM
Heat Trace:	N	Sampled By:	JESSE R.
Remarks:		Sampled by (CO):	HILCORP

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.5765	0.5670	0.0640	0.00	0.0056
CO2	1.7307	1.7021	0.2960	0.00	0.0263
Methane	79.4422	78.1272	13.5130	802.37	0.4400
Ethane	10.2074	10.0384	2.7390	180.64	0.1060
Propane	4.4316	4.3582	1.2250	111.50	0.0675
Iso-Butane	0.6763	0.6651	0.2220	21.99	0.0136
N-Butane	1.2811	1.2599	0.4050	41.79	0.0257
I-Pentane	0.4266	0.4195	0.1570	17.07	0.0106
N-Pentane	0.3713	0.3652	0.1350	14.88	0.0092
Hexane Plus	0.8563	0.8421	0.3830	45.14	0.0283
Total	100.0000	98.3447	19.1390	1235.38	0.7328

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.0036	CYLINDER #:	6200
BTU/CU.FT IDEAL:	1238.2	CYLINDER PRESSURE:	170 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1242.7	ANALYSIS DATE:	04/26/2021
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1221.1	ANALYSIS TIME:	02:01:08 AM
DRY BTU @ 15.025:	1267.6	ANALYSIS RUN BY:	RICHARD WILSON
REAL SPECIFIC GRAVITY:	0.7352		

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: 04/28/2021

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	FEDERAL PIONEER #1E; CSG	CASING	04/28/2021
Stn. No.:	API# 3004533473	DK	35825-10605
Mtr. No.:	14004		

Smpl Date:	04/21/2021	08/24/2018
Test Date:	04/26/2021	09/04/2018
Run No:	HS2021013	HS180157
Nitrogen:	0.5765	0.5602
CO2:	1.7307	2.0097
Methane:	79.4422	76.5019
Ethane:	10.2074	9.8680
Propane:	4.4316	4.6885
I-Butane:	0.6763	0.8241
N-Butane:	1.2811	1.7159
I-Pentane:	0.4266	0.8073
N-Pentane:	0.3713	0.8219
Hexane+:	0.8563	2.2025
BTU:	1242.7	1338.4
GPM:	19.1390	19.7720
SPG:	0.7352	0.8012



Well Name: FEDERAL PIONEER #1E;
 API #: API# 3004533473
 Source: TUBING
 Sample Type: GAS
 Analysis No: HS2021014
 Cust No: 35825-13455

Well/Lease Information

Customer Name:	HILCORP (BHD PROJECT)	Source:	TUBING
Well Name:	FEDERAL PIONEER #1E; TBG	Well Flowing:	Y
County/State:	SAN JUAN NM	Pressure:	127 PSIG
Location:		Flow Temp:	DEG. F
Lease/PA/CA:		Ambient Temp:	DEG. F
Formation:	DK	Flow Rate:	MCF/D
Cust. Stn. No.:	API# 3004533473	Sample Method:	Purge & Fill
	14004	Sample Date:	04/21/2021
	AREA 2 / RUN 0209	Sample Time:	1.00 PM
Heat Trace:	N	Sampled By:	JESSE R.
Remarks:		Sampled by (CO):	HILCORP

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.5530	0.5434	0.0610	0.00	0.0053
CO2	1.8000	1.7686	0.3080	0.00	0.0274
Methane	80.7994	79.3912	13.7420	816.07	0.4475
Ethane	10.1850	10.0075	2.7330	180.24	0.1057
Propane	3.7476	3.6823	1.0360	94.29	0.0571
Iso-Butane	0.4555	0.4476	0.1500	14.81	0.0091
N-Butane	0.9580	0.9413	0.3030	31.25	0.0192
I-Pentane	0.2773	0.2725	0.1020	11.09	0.0069
N-Pentane	0.3136	0.3081	0.1140	12.57	0.0078
Hexane Plus	0.9106	0.8947	0.4070	48.00	0.0301
Total	100.0000	98.2572	18.9560	1208.34	0.7163

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.0035	CYLINDER #:	4208
BTU/CU.FT IDEAL:	1211.1	CYLINDER PRESSURE:	125 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1215.3	ANALYSIS DATE:	04/26/2021
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1194.2	ANALYSIS TIME:	02:24:09 PM
DRY BTU @ 15.025:	1239.6	ANALYSIS RUN BY:	RICHARD WILSON
REAL SPECIFIC GRAVITY:	0.7184		

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: 04/28/2021

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	FEDERAL PIONEER #1E; TBG	TUBING	04/28/2021
Stn. No.:	API# 3004533473	DK	35825-13455
Mtr. No.:	14004		

Smpl Date: 04/21/2021
Test Date: 04/26/2021
Run No: HS2021014

Nitrogen: 0.5530
CO2: 1.8000
Methane: 80.7994
Ethane: 10.1850
Propane: 3.7476
I-Butane: 0.4555
N-Butane: 0.9580
I-Pentane: 0.2773
N-Pentane: 0.3136
Hexane+: 0.9106

BTU: 1215.3
GPM: 18.9560
SPG: 0.7184

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 27394

CONDITIONS OF APPROVAL

Operator:	HILCORP ENERGY COMPANY	1111 Travis Street	Houston, TX77002	OGRID:	372171	Action Number:	27394	Action Type:	GAS ANALYSIS
OCD Reviewer	Condition								
mkuehling	None								