



Well Name: WILLIAMS 1; BHD
 API #: 3004505941
 Source: BRADENHEAD
 Sample Type: GAS
 Analysis No: HS2021129
 Cust No: 35825-13775

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
 Well Name: WILLIAMS 1; BHD
 County/State: SAN JUAN NM
 Location:
 Lease/PA/CA: SF078464
 Formation: MV/DK
 Cust. Stn. No.: 3004505941

Source: BRADENHEAD
 Well Flowing: Y
 Pressure: 54 PSIG
 Flow Temp: DEG. F
 Ambient Temp: DEG. F
 Flow Rate: MCF/D
 Sample Method: Purge & Fill
 Sample Date: 06/22/2021
 Sample Time: 2.00 PM
 Sampled By: PETE JIM
 Sampled by (CO): HILCORP

AREA 9 / RUN 0908

Heat Trace:

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2380	0.2361	0.0260	0.00	0.0023
CO2	0.0056	0.0056	0.0010	0.00	0.0001
Methane	92.2907	91.5576	15.6830	932.14	0.5112
Ethane	4.0642	4.0319	1.0890	71.92	0.0422
Propane	1.8076	1.7932	0.4990	45.48	0.0275
Iso-Butane	0.5385	0.5342	0.1770	17.51	0.0108
N-Butane	0.3560	0.3532	0.1120	11.61	0.0071
I-Pentane	0.2567	0.2547	0.0940	10.27	0.0064
N-Pentane	0.1341	0.1330	0.0490	5.38	0.0033
Hexane Plus	0.3086	0.3061	0.1380	16.27	0.0102
Total	100.0000	99.2056	17.8680	1110.58	0.6212

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0026
 BTU/CU.FT IDEAL: 1113.1
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1116.1
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1096.7
 DRY BTU @ 15.025: 1138.5
 REAL SPECIFIC GRAVITY: 0.6226

CYLINDER #: 6042
 CYLINDER PRESSURE: 50 PSIG
 ANALYSIS DATE: 06/30/2021
 ANALYSIS TIME: 11:14:05 AM
 ANALYSIS RUN BY: PATRICIA KING

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: 07/09/2021

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	WILLIAMS 1; BHD	BRADENHEAD	07/09/2021
Stn. No.:	3004505941	MV/DK	35825-13775
Mtr. No.:			

Smpl Date: 06/22/2021
Test Date: 06/30/2021
Run No: HS2021129

Nitrogen: 0.2380
CO2: 0.0056
Methane: 92.2907
Ethane: 4.0642
Propane: 1.8076
I-Butane: 0.5385
N-Butane: 0.3560
I-Pentane: 0.2567
N-Pentane: 0.1341
Hexane+: 0.3086

BTU: 1116.1
GPM: 17.8680
SPG: 0.6226



Well Name: WILLIAMS 1; CSG
 API #: 3004505941
 Source: CASING
 Sample Type: GAS
 Analysis No: HS2021130
 Cust No: 35825-13780

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
 Well Name: WILLIAMS 1; CSG
 County/State: SAN JUAN NM
 Location:
 Lease/PA/CA: SF078464
 Formation: MV/DK
 Cust. Stn. No.: 3004505941

Source: CASING
 Well Flowing: Y
 Pressure: 72 PSIG
 Flow Temp: DEG. F
 Ambient Temp: DEG. F
 Flow Rate: MCF/D
 Sample Method: Purge & Fill
 Sample Date: 06/22/2021
 Sample Time: 2.00 PM
 Sampled By: PETE JIM
 Sampled by (CO): HILCORP

AREA 9 / RUN 0908

Heat Trace:

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.1826	0.1809	0.0200	0.00	0.0018
CO2	0.6467	0.6407	0.1110	0.00	0.0098
Methane	81.6104	80.8565	13.8820	824.27	0.4520
Ethane	9.9497	9.8578	2.6700	176.08	0.1033
Propane	3.9314	3.8951	1.0870	98.92	0.0599
Iso-Butane	0.7300	0.7233	0.2400	23.74	0.0146
N-Butane	1.0311	1.0216	0.3260	33.64	0.0207
I-Pentane	0.4100	0.4062	0.1500	16.40	0.0102
N-Pentane	0.2900	0.2873	0.1050	11.63	0.0072
Hexane Plus	1.2181	1.2068	0.5450	64.21	0.0403
Total	100.0000	99.0762	19.1360	1248.88	0.7199

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0036
 BTU/CU.FT IDEAL: 1251.8
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1256.3
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1234.4
 DRY BTU @ 15.025: 1281.5
 REAL SPECIFIC GRAVITY: 0.7222

CYLINDER #: 4091
 CYLINDER PRESSURE: 68 PSIG
 ANALYSIS DATE: 06/30/2021
 ANALYSIS TIME: 11:00:22 AM
 ANALYSIS RUN BY: PATRICIA KING

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: 07/09/2021

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	WILLIAMS 1; CSG	CASING	07/09/2021
Stn. No.:	3004505941	MV/DK	35825-13780
Mtr. No.:			

Smpl Date: 06/22/2021
Test Date: 06/30/2021
Run No: HS2021130

Nitrogen: 0.1826
CO2: 0.6467
Methane: 81.6104
Ethane: 9.9497
Propane: 3.9314
I-Butane: 0.7300
N-Butane: 1.0311
I-Pentane: 0.4100
N-Pentane: 0.2900
Hexane+: 1.2181

BTU: 1256.3
GPM: 19.1360
SPG: 0.7222



Well Name: WILLIAMS 1; TBG
 API #: 3004505941
 Source: TUBING
 Sample Type: GAS
 Analysis No: HS2021131
 Cust No: 35825-13785

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
 Well Name: WILLIAMS 1; TBG
 County/State: SAN JUAN NM
 Location:
 Lease/PA/CA: SF078464
 Formation: MV/DK
 Cust. Stn. No.: 3004505941

Source: TUBING
 Well Flowing: Y
 Pressure: 69 PSIG
 Flow Temp: DEG. F
 Ambient Temp: DEG. F
 Flow Rate: MCF/D
 Sample Method: Purge & Fill
 Sample Date: 06/22/2021
 Sample Time: 2.00 PM
 Sampled By: PETE JIM
 Sampled by (CO): HILCORP

Heat Trace: AREA 9 / RUN 0908
 N
 Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2265	0.2245	0.0250	0.00	0.0022
CO2	1.1397	1.1296	0.1950	0.00	0.0173
Methane	80.6075	79.8933	13.7110	814.14	0.4465
Ethane	10.3039	10.2126	2.7650	182.35	0.1070
Propane	4.2103	4.1730	1.1640	105.94	0.0641
Iso-Butane	0.7449	0.7383	0.2450	24.22	0.0149
N-Butane	1.1402	1.1301	0.3610	37.20	0.0229
I-Pentane	0.4247	0.4209	0.1560	16.99	0.0106
N-Pentane	0.3136	0.3108	0.1140	12.57	0.0078
Hexane Plus	0.8887	0.8808	0.3980	46.84	0.0294
Total	100.0000	99.1139	19.1340	1240.25	0.7227

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0036
 BTU/CU.FT IDEAL: 1243.1
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1247.6
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1225.9
 DRY BTU @ 15.025: 1272.6
 REAL SPECIFIC GRAVITY: 0.725

CYLINDER #: 7026
 CYLINDER PRESSURE: 67 PSIG
 ANALYSIS DATE: 06/30/2021
 ANALYSIS TIME: 10:41:48 AM
 ANALYSIS RUN BY: PATRICIA KING

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: 07/09/2021

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	WILLIAMS 1; TBG	TUBING	07/09/2021
Stn. No.:	3004505941	MV/DK	35825-13785
Mtr. No.:			

Smpl Date: 06/22/2021
Test Date: 06/30/2021
Run No: HS2021131

Nitrogen: 0.2265
CO2: 1.1397
Methane: 80.6075
Ethane: 10.3039
Propane: 4.2103
I-Butane: 0.7449
N-Butane: 1.1402
I-Pentane: 0.4247
N-Pentane: 0.3136
Hexane+: 0.8887

BTU: 1247.6
GPM: 19.1340
SPG: 0.7250

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District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 35817

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 35817
	Action Type: [UF-GA] Gas Analysis (GAS ANALYSIS)

CONDITIONS

Created By	Condition	Condition Date
mkuehling	None	8/6/2021