



OCD Received
8/10/2020

Well Name: HOUCK COM 1; BHD
API #: API #3004525797
Source: BRADENHEAD
Sample Type: GAS
Analysis No: HS200155
Cust No: 35825-12740

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: HOUCK COM 1; BHD
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation: MV / DK
Cust. Stn. No.: API #3004525797
95-917-01

Source: BRADENHEAD
Well Flowing: Y
Pressure: 150 PSIG
Flow Temp: DEG. F
Ambient Temp: 94 DEG. F
Flow Rate: 150 MCF/D
Sample Method:
Sample Date: 07/31/2020
Sample Time: 12.35 PM
Sampled By: LIONEL GLEASON
Sampled by (CO): HILCORP

Heat Trace: AREA 3 / RUN 306

Remarks: N

Analysis

Component:	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.6718	0.6554	0.0740	0.00	0.0065
CO2	0.0103	0.0100	0.0020	0.00	0.0002
Methane	88.1580	86.0010	14.9830	890.40	0.4883
Ethane	6.9518	6.7817	1.8640	123.03	0.0722
Propane	2.6359	2.5714	0.7280	66.32	0.0401
Iso-Butane	0.4689	0.4574	0.1540	15.25	0.0094
N-Butane	0.5584	0.5447	0.1760	18.22	0.0112
I-Pentane	0.2144	0.2092	0.0790	8.58	0.0053
N-Pentane	0.0975	0.0951	0.0350	3.91	0.0024
Hexane Plus	0.2330	0.2273	0.1040	12.28	0.0077
Total	100.0000	97.5532	18.1990	1137.98	0.6434

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0028
BTU/CU.FT IDEAL: 1140.6
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1143.8
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1123.9
DRY BTU @ 15.025: 1166.7
REAL SPECIFIC GRAVITY: 0.6449

CYLINDER #: 4003
CYLINDER PRESSURE: 42 PSIG
ANALYSIS DATE: 08/06/2020
ANALYSIS TIME: 02:23:08 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: HOUCK COM 1; BHD
Stn. No.: API #3004525797
Mtr. No.: 95-917-01

BRADENHEAD
MV / DK

08/07/2020
35825-12740

Smpl Date: 07/31/2020
Test Date: 08/06/2020
Run No: HS200155

Nitrogen: 0.6718
CO2: 0.0103
Methane: 88.1580
Ethane: 6.9518
Propane: 2.6359
I-Butane: 0.4689
N-Butane: 0.5584
I-Pentane: 0.2144
N-Pentane: 0.0975
Hexane+: 0.2330

BTU: 1143.8
GPM: 18.1990
SPG: 0.6449



Well Name: HOUCK COM 1; CSG
 API #: API #3004525797
 Source: CASING
 Sample Type: GAS
 Analysis No: HS200156
 Cust No: 35825-12745

Well/Lease Information

Customer Name:	HILCORP (BHD PROJECT)	Source:	CASING
Well Name:	HOUCK COM 1; CSG	Well Flowing:	Y
County/State:	SAN JUAN NM	Pressure:	150 PSIG
Location:		Flow Temp:	DEG. F
Lease/PA/CA:		Ambient Temp:	90 DEG. F
Formation:	MV / DK	Flow Rate:	150 MCF/D
Cust. Stn. No.:	API #3004525797	Sample Method:	
	95-917-01	Sample Date:	07/31/2020
		Sample Time:	12.32 PM
	AREA 3 / RUN 306	Sampled By:	LIONEL GLEASON
Heat Trace:	N	Sampled by (CO):	HILCORP
Remarks:			

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.3148	0.3081	0.0350	0.00	0.0030
CO2	0.8339	0.8162	0.1430	0.00	0.0127
Methane	82.9892	81.2313	14.1180	838.19	0.4597
Ethane	7.1192	6.9684	1.9100	125.99	0.0739
Propane	4.2810	4.1903	1.1830	107.71	0.0652
Iso-Butane	0.7834	0.7668	0.2570	25.48	0.0157
N-Butane	1.2807	1.2536	0.4050	41.78	0.0257
I-Pentane	0.4900	0.4796	0.1800	19.60	0.0122
N-Pentane	0.4200	0.4111	0.1530	16.84	0.0105
Hexane Plus	1.4878	1.4563	0.6660	78.42	0.0492
Total	100.0000	97.8817	19.0500	1254.01	0.7278

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.0037	CYLINDER #:	033
BTU/CU.FT IDEAL:	1256.9	CYLINDER PRESSURE:	66 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1261.6	ANALYSIS DATE:	08/06/2020
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1239.6	ANALYSIS TIME:	02:15:41 PM
DRY BTU @ 15.025:	1286.9	ANALYSIS RUN BY:	PATRICIA KING
REAL SPECIFIC GRAVITY:	0.7302		

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: HOUCK COM 1; CSG
Stn. No.: API #3004525797
Mtr. No.: 95-917-01

CASING
MV / DK

08/07/2020
35825-12745

Smpl Date: 07/31/2020
Test Date: 08/06/2020
Run No: HS200156

Nitrogen: 0.3148
CO2: 0.8339
Methane: 82.9892
Ethane: 7.1192
Propane: 4.2810
I-Butane: 0.7834
N-Butane: 1.2807
I-Pentane: 0.4900
N-Pentane: 0.4200
Hexane+: 1.4878

BTU: 1261.6
GPM: 19.0500
SPG: 0.7302



Well Name: HOUCK COM 1; TBG
API #: API #3004525797
Source: TUBING
Sample Type: GAS
Analysis No: HS200157
Cust No: 35825-12750

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: HOUCK COM 1; TBG
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation: MV
Cust. Stn. No.: API #3004525797
95-917-01

Source: TUBING
Well Flowing: Y
Pressure: 150 PSIG
Flow Temp: DEG. F
Ambient Temp: 94 DEG. F
Flow Rate: 150 MCF/D
Sample Method:
Sample Date: 07/31/2020
Sample Time: 12.25 PM
Sampled By: LIONEL GLEASON
Sampled by (CO): HILCORP

Heat Trace: AREA 3 / RUN 306

Remarks: N

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2375	0.2333	0.0260	0.00	0.0023
CO2	1.4443	1.4190	0.2470	0.00	0.0219
Methane	78.4691	77.0932	13.3510	792.54	0.4346
Ethane	10.0985	9.9214	2.7110	178.71	0.1048
Propane	5.2321	5.1404	1.4470	131.64	0.0797
Iso-Butane	1.0598	1.0412	0.3480	34.46	0.0213
N-Butane	1.5898	1.5619	0.5030	51.86	0.0319
I-Pentane	0.5816	0.5714	0.2130	23.27	0.0145
N-Pentane	0.4143	0.4070	0.1510	16.61	0.0103
Hexane Plus	0.8730	0.8577	0.3910	46.02	0.0289
Total	100.0000	98.2465	19.3880	1275.12	0.7503

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0039
BTU/CU.FT IDEAL: 1278.1
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1283.1
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1260.8
DRY BTU @ 15.025: 1308.8
REAL SPECIFIC GRAVITY: 0.7529

CYLINDER #: 1419
CYLINDER PRESSURE: 62 PSIG
ANALYSIS DATE: 08/06/2020
ANALYSIS TIME: 02:37:47 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: HOUCK COM 1; TBG
Stn. No.: API #3004525797
Mtr. No.: 95-917-01

TUBING
MV

08/07/2020
35825-12750

Smpl Date: 07/31/2020
Test Date: 08/06/2020
Run No: HS200157

Nitrogen: 0.2375
CO2: 1.4443
Methane: 78.4691
Ethane: 10.0985
Propane: 5.2321
I-Butane: 1.0598
N-Butane: 1.5898
I-Pentane: 0.5816
N-Pentane: 0.4143
Hexane+: 0.8730

BTU: 1283.1
GPM: 19.3880
SPG: 0.7529



Well Name: HOUCK COM 1; TBG
 API #: API #3004525797
 Source: TUBING
 Sample Type: GAS
 Analysis No: HS200158
 Cust No: 35825-12755

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
 Well Name: HOUCK COM 1; TBG
 County/State: SAN JUAN NM
 Location:
 Lease/PA/CA:
 Formation: DK
 Cust. Stn. No.: API #3004525797
 95-917-01

Source: TUBING
 Well Flowing: Y
 Pressure: 150 PSIG
 Flow Temp: DEG. F
 Ambient Temp: 94 DEG. F
 Flow Rate: 150 MCF/D
 Sample Method:
 Sample Date: 07/31/2020
 Sample Time: 12.38 PM
 Sampled By: LIONEL GLEASON
 Sampled by (CO): HILCORP

Heat Trace: AREA 3 / RUN 306
 N
 Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2735	0.2694	0.0300	0.00	0.0026
CO2	1.3201	1.3003	0.2260	0.00	0.0201
Methane	78.4071	77.2300	13.3430	791.91	0.4343
Ethane	10.0156	9.8652	2.6890	177.25	0.1040
Propane	4.8574	4.7845	1.3430	122.22	0.0740
Iso-Butane	0.9616	0.9472	0.3160	31.27	0.0193
N-Butane	1.4177	1.3964	0.4490	46.25	0.0285
I-Pentane	0.5718	0.5632	0.2100	22.88	0.0142
N-Pentane	0.4464	0.4397	0.1620	17.89	0.0111
Hexane Plus	1.7288	1.7028	0.7740	91.13	0.0572
Total	100.0000	98.4987	19.5420	1300.79	0.7653

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0041
 BTU/CU.FT IDEAL: 1303.8
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1309.2
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1286.4
 DRY BTU @ 15.025: 1335.4
 REAL SPECIFIC GRAVITY: 0.7681

CYLINDER #: 7051
 CYLINDER PRESSURE: 64 PSIG
 ANALYSIS DATE: 08/06/2020
 ANALYSIS TIME: 02:32:40 PM
 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: 08/07/2020

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: HOUCK COM 1; TBG
Stn. No.: API #3004525797
Mtr. No.: 95-917-01

TUBING
DK

08/07/2020
35825-12755

Smpl Date: 07/31/2020
Test Date: 08/06/2020
Run No: HS200158
Nitrogen: 0.2735
CO2: 1.3201
Methane: 78.4071
Ethane: 10.0156
Propane: 4.8574
I-Butane: 0.9616
N-Butane: 1.4177
I-Pentane: 0.5718
N-Pentane: 0.4464
Hexane+: 1.7288
BTU: 1309.2
GPM: 19.5420
SPG: 0.7681