Well Name: DUKE 1B; BHD
API #: 3004531062
Source: BRADENHEAD
Sample Type: GAS

Analysis No: HS20240088
Cust No: 35825-15780

Well/Lease Information

Customer Name:	HILCORP (BHD PROJECT)	Source:	BRADENHEAD
Well Name:	DUKE 1B; BHD	Well Flowing:	Y
County/State:	SAN JUAN NM	Pressure:	35 PSIG
Location:		Flow Temp:	88 DEG. F
Lease/PA/CA:	NMSF-078707	Ambient Temp:	60 DEG. F
Formation:	MV/DK	Flow Rate:	0 MCF/D
Cust. Stn. No.:	3004531062	Sample Method:	Purge & Fill
	3645030	Sample Date:	05/09/2024
		Sample Time:	11.00 AM
	AREA 2 / RUN 0203	Sampled By:	SHAWN FINCHER
Heat Trace:	N	Sampled by (CO):	HILCORP
Remarks:	PRESSURED WITH HELIUM TO 30 LBS.		

Analysis

Component::	Mole%:	Unormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.4899	0.1387	0.0540	0.00	0.0047
CO2	0.0230	0.0065	0.0040	0.00	0.0003
Methane	95.9575	27.1677	16.2990	969.17	0.5315
Ethane	2.4396	0.6907	0.6540	43.17	0.0253
Propane	0.3836	0.1086	0.1060	9.65	0.0058
Iso-Butane	0.1243	0.0352	0.0410	4.04	0.0025
N-Butane	0.1773	0.0502	0.0560	5.78	0.0036
I-Pentane	0.0925	0.0262	0.0340	3.70	0.0023
N-Pentane	0.0788	0.0223	0.0290	3.16	0.0020
Hexane Plus	0.2335	0.0661	0.1040	12.31	0.0077
Total	100.0000	28.3122	17.3810	1050.99	0.5858

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY
**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBLITY FACTOR (1/Z):	1.0022	CYLINDER #:	045
BTU/CU.FT IDEAL:	1053.4	CYLINDER PRESSURE:	4 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1055.7	ANALYIS DATE:	05/17/2024
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1037.3	ANALYIS TIME:	07:34:59 AM
DRY BTU @ 15.025:	1076.8	ANALYSIS RUN BY:	ALEXIS MITCHELL
REAL SPECIFIC GRAVITY:	0.5869		

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: 05/22/2024**
GC Method: C6+ Gas

HILCORP (BHD PROJECT)

WELL ANALYSIS COMPARISON

Lease:	DUKE 1B; BHD	BRADENHEAD	05/22/2024
Stn. No.:	3004531062	MV/DK	35825-15780
Mtr. No.:	3645030		

Smpl Date:	05/09/2024
Test Date:	05/17/2024
Run No:	HS20240088
Nitrogen:	0.4899
CO2:	0.0230
Methane:	95.9575
Ethane:	2.4396
Propane:	0.3836
I-Butane:	0.1243
N-Butane:	0.1773
I-Pentane:	0.0925
N-Pentane:	0.0788
Hexane+:	0.2335
BTU:	1055.7
GPM:	17.3810
SPG:	0.5869

Well Name: DUKE 1B; INT
API #: 3004531062
Source: INTERMEDIATE CASING
Sample Type: GAS

Analysis No: HS20240090
Cust No: 35825-15790

Well/Lease Information

Customer Name:	HILCORP (BHD PROJECT)	Source:	INTERMEDIATE CASING
Well Name:	DUKE 1B; INT	Well Flowing:	Y
County/State:	SAN JUAN NM	Pressure:	0 PSIG
Location:		Flow Temp:	88 DEG. F
Lease/PA/CA:	NMSF-078707	Ambient Temp:	60 DEG. F
Formation:	MV/DK	Flow Rate:	0 MCF/D
Cust. Stn. No.:	3004531062	Sample Method:	Purge & Fill
	3645030	Sample Date:	05/09/2024
		Sample Time:	11.00 AM
	AREA 2 / RUN 0203	Sampled By:	SHAWN FINCHER
Heat Trace:	N	Sampled by (CO):	HILCORP
Remarks:	PRESSURED WITH HELIUM TO 30 LBS.		

Analysis

Component::	Mole%:	Unormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.3098	0.1261	0.0340	0.00	0.0030
CO2	0.0305	0.0124	0.0050	0.00	0.0005
Methane	72.3877	29.4652	12.3400	731.12	0.4010
Ethane	9.1562	3.7270	2.4620	162.04	0.0951
Propane	8.5749	3.4904	2.3750	215.75	0.1306
Iso-Butane	1.9396	0.7895	0.6380	63.07	0.0389
N-Butane	2.2319	0.9085	0.7080	72.81	0.0448
I-Pentane	0.7768	0.3162	0.2860	31.08	0.0194
N-Pentane	0.6832	0.2781	0.2490	27.39	0.0170
Hexane Plus	3.9094	1.5913	1.7530	206.07	0.1294
Total	100.0000	40.7047	20.8500	1509.32	0.8795

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY
**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBLITY FACTOR (1/Z):	1.0058	CYLINDER #:	1837
BTU/CU.FT IDEAL:	1512.8	CYLINDER PRESSURE:	PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1521.6	ANALYIS DATE:	05/17/2024
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1495.1	ANALYIS TIME:	07:43:11 AM
DRY BTU @ 15.025:	1552.1	ANALYSIS RUN BY:	ALEXIS MITCHELL
REAL SPECIFIC GRAVITY:	0.8843		

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: 05/22/2024**
GC Method: C6+ Gas

HILCORP (BHD PROJECT)

WELL ANALYSIS COMPARISON

Lease:	DUKE 1B; INT	INTERMEDIATE CASING	05/22/2024
Stn. No.:	3004531062	MV/DK	35825-15790
Mtr. No.:	3645030		

Smpl Date:	05/09/2024
Test Date:	05/17/2024
Run No:	HS20240090
Nitrogen:	0.3098
CO2:	0.0305
Methane:	72.3877
Ethane:	9.1562
Propane:	8.5749
I-Butane:	1.9396
N-Butane:	2.2319
I-Pentane:	0.7768
N-Pentane:	0.6832
Hexane+:	3.9094
BTU:	1521.6
GPM:	20.8500
SPG:	0.8843

Well Name: DUKE 1B; TBG
API #: 3004531062
Source: TUBING
Sample Type: GAS

Analysis No: HS20240091
Cust No: 35825-15795

Well/Lease Information

Customer Name:	HILCORP (BHD PROJECT)	Source:	TUBING
Well Name:	DUKE 1B; TBG	Well Flowing:	Y
County/State:	SAN JUAN	Pressure:	63 PSIG
Location:	MV/DK	Flow Temp:	88 DEG. F
Lease/PA/CA:	NMSF-078707	Ambient Temp:	60 DEG. F
Formation:	NM	Flow Rate:	0 MCF/D
Cust. Stn. No.:	3004531062	Sample Method:	Purge & Fill
	3645030	Sample Date:	05/09/2024
		Sample Time:	11.00 AM
	AREA 2 / RUN 0203	Sampled By:	SHAWN FINCHER
Heat Trace:	N	Sampled by (CO):	HILCORP
Remarks:			

Analysis

Component::	Mole%:	Unormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.1985	0.1986	0.0220	0.00	0.0019
CO2	0.6766	0.6770	0.1160	0.00	0.0103
Methane	81.5297	81.5827	13.8680	823.45	0.4516
Ethane	10.0469	10.0534	2.6960	177.80	0.1043
Propane	3.9569	3.9595	1.0940	99.56	0.0602
Iso-Butane	0.6885	0.6889	0.2260	22.39	0.0138
N-Butane	1.0736	1.0743	0.3400	35.02	0.0215
I-Pentane	0.4619	0.4622	0.1690	18.48	0.0115
N-Pentane	0.3187	0.3189	0.1160	12.78	0.0079
Hexane Plus	1.0487	1.0494	0.4690	55.28	0.0347
Total	100.0000	100.0649	19.1160	1244.76	0.7179

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY
**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBLITY FACTOR (1/Z):	1.0036	CYLINDER #:	21
BTU/CU.FT IDEAL:	1247.6	CYLINDER PRESSURE:	68 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1252.1	ANALYIS DATE:	05/17/2024
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1230.3	ANALYIS TIME:	10:00:01 AM
DRY BTU @ 15.025:	1277.2	ANALYSIS RUN BY:	ALEXIS MITCHELL
REAL SPECIFIC GRAVITY:	0.7202		

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: 05/22/2024**
GC Method: C6+ Gas

HILCORP (BHD PROJECT)

WELL ANALYSIS COMPARISON

Lease:	DUKE 1B; TBG	TUBING	05/22/2024
Stn. No.:	3004531062	NM	35825-15795
Mtr. No.:	3645030		

Smpl Date:	05/09/2024
Test Date:	05/17/2024
Run No:	HS20240091
Nitrogen:	0.1985
CO2:	0.6766
Methane:	81.5297
Ethane:	10.0469
Propane:	3.9569
I-Butane:	0.6885
N-Butane:	1.0736
I-Pentane:	0.4619
N-Pentane:	0.3187
Hexane+:	1.0487
BTU:	1252.1
GPM:	19.1160
SPG:	0.7202

Well Name: DUKE 1B; CSG
API #: 3004531062
Source: CASING
Sample Type: GAS

Analysis No: HS20240089
Cust No: 35825-15785

Well/Lease Information

Customer Name:	HILCORP (BHD PROJECT)	Source:	CASING
Well Name:	DUKE 1B; CSG	Well Flowing:	Y
County/State:	SAN JUAN NM	Pressure:	63 PSIG
Location:		Flow Temp:	88 DEG. F
Lease/PA/CA:		Ambient Temp:	60 DEG. F
Formation:		Flow Rate:	0 MCF/D
Cust. Stn. No.:	3004531062	Sample Method:	Purge & Fill
	3645030	Sample Date:	05/09/2024
		Sample Time:	11.00 AM
	AREA 2 / RUN 0203	Sampled By:	SHAWN FINCHER
Heat Trace:	N	Sampled by (CO):	HILCORP
Remarks:			

Analysis

Component::	Mole%:	Unormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2149	0.2151	0.0240	0.00	0.0021
CO2	0.6796	0.6802	0.1160	0.00	0.0103
Methane	81.6265	81.7025	13.8830	824.43	0.4521
Ethane	10.0655	10.0749	2.7010	178.13	0.1045
Propane	3.9800	3.9837	1.1000	100.14	0.0606
Iso-Butane	0.6988	0.6995	0.2290	22.72	0.0140
N-Butane	1.0957	1.0967	0.3470	35.75	0.0220
I-Pentane	0.4513	0.4517	0.1660	18.06	0.0112
N-Pentane	0.3138	0.3141	0.1140	12.58	0.0078
Hexane Plus	0.8739	0.8747	0.3910	46.06	0.0289
Total	100.0000	100.0931	19.0710	1237.87	0.7136

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY
**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBLITY FACTOR (1/Z):	1.0035	CYLINDER #:	124
BTU/CU.FT IDEAL:	1240.7	CYLINDER PRESSURE:	61 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1245.1	ANALYIS DATE:	05/16/2024
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1223.4	ANALYIS TIME:	04:53:26 PM
DRY BTU @ 15.025:	1270.0	ANALYSIS RUN BY:	ALEXIS MITCHELL
REAL SPECIFIC GRAVITY:	0.7158		

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: 05/22/2024**
GC Method: C6+ Gas

HILCORP (BHD PROJECT)

WELL ANALYSIS COMPARISON

Lease:	DUKE 1B; CSG	CASING	05/22/2024
Stn. No.:	3004531062		35825-15785
Mtr. No.:	3645030		

Smpl Date:	05/09/2024
Test Date:	05/16/2024
Run No:	HS20240089
Nitrogen:	0.2149
CO2:	0.6796
Methane:	81.6265
Ethane:	10.0655
Propane:	3.9800
I-Butane:	0.6988
N-Butane:	1.0957
I-Pentane:	0.4513
N-Pentane:	0.3138
Hexane+:	0.8739
BTU:	1245.1
GPM:	19.0710
SPG:	0.7158

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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 355562

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 355562
	Action Type: [UF-GA] Gas Analysis (GAS ANALYSIS)

CONDITIONS

Created By	Condition	Condition Date
mkuehling	doesn't appear to be same gas	8/27/2024