EXTENDED NATURAL GAS ANALYSIS (*DHA)

MAIN PAGE

PRIMARY DB KEY:	**05-045-13622**	NAME/DESCRIP :	**300105084 PG16 SHORE 16-7BB CASING**
LEASE #:	**71238**		
FIELD/AREA:	**PARACHUTE**		

PROJECT NO. :	**202603051**	ANALYSIS NO. :	**01**
COMPANY NAME :	**QB ENERGY OPERATING, LLC**	ANALYSIS DATE:	MARCH 30, 2026 07:42
OFFICE / BRANCH:	PARACHUTE, CO	SAMPLE DATE :	FEBRUARY 28, 2026 8:30
CUSTOMER REF:		TO:	
PRODUCER :	QB ENERGY OPERATING LLC	EFFECTIVE DATE:	

*****FIELD DATA*****

SAMPLE CYCLE:			SAMPLE TYPE:	SPOT	
SAMPLE PRES. :	250	psig	PROBE :	NO	
FLOW PRES. :		psig	CYLINDER NO. :	ECA-810	
LAB PRES:		psig	SAMPLED BY :	ALEX GALLEGOS	
SAMPLE TEMP. :	38	ºf	SAMPLING COMPANY:	QB ENERGY	
AMBIENT TEMP.:		ºf	H2S BY STAIN TUBE:		ppm mol
H2O BY STAIN TUBE:		#/mmcf	CO2 BY STAIN TUBE:		Mol %

FIELD COMMENTS:

LAB COMMENTS:

COMPONENT	MOLE %	MASS %	GPM @ 14.65	GPM @ 14.73
GLYCOLS	0.0001	0.0004	0.0000	0.0000
ALCOHOLS	0.0190	0.0451	0.0040	0.0040
HELIUM	0.00	0.00	---	---
HYDROGEN	0.06	0.01	---	---
OXYGEN/ARGON	0.00	0.00	---	---
NITROGEN	0.08	0.13	---	---
CARBON DIOXIDE	1.07	2.63	---	---
METHANE	92.2236	82.5682	---	---
ETHANE	4.1968	7.0427	1.1192	1.1253
PROPANE	1.1978	2.9477	0.3288	0.3306
I-BUTANE	0.2502	0.8116	0.0819	0.0824
N-BUTANE	0.2745	0.8904	0.0859	0.0864
I-PENTANE	0.1403	0.5642	0.0510	0.0512
N-PENTANE	0.1030	0.4147	0.0370	0.0372
HEXANES PLUS	0.3847	1.9450	0.1490	0.1495
TOTALS	100.00000	100.00000	1.8568	1.8666

BTEX COMPONENTS	MOLE%	WT%
BENZENE	0.0164	0.0715
TOLUENE	0.0160	0.0823
ETHYLBENZENE	0.0000	0.0000
XYLENES	0.0000	0.0000
TOTAL BTEX	0.0324	0.1538

**(DETAILED HYDROCARBON ANALYSIS/NJ 1993)*
Mod ASTM D6730,GPA 2261 & GPA 2286.

***(CALC: GPA 2172, GPA 2145 & TP-17 @14.696 & 60 F)*

CALCULATED VALUES**

	BTU @	14.65	14.73
LHV	NET DRY REAL :	976.0 /scf	981.3 /scf
	NET WET REAL :	958.9 /scf	964.2 /scf
HHV	GROSS DRY REAL :	1081.0 /scf	1086.9 /scf
	GROSS WET REAL :	1062.1 /scf	1068.0 /scf

NET HEATING VALUE (60 °F ideal reaction):	20698.2 **Btu/lbm**
GROSS HEATING VALUE (60°F ideal reaction):	22921.7 **Btu/lbm**
RELATIVE DENSITY (AIR=1):	0.6184
DENSITY	0.04721 **lbm/scf**
COMPRESSIBILITY FACTOR :	0.9976
REGULAR WOBBE INDEX	1375.7

EMPACT

EXTENDED NATURAL GAS ANALYSIS (*DHA)

GLYCALC INFORMATION

PROJECT NO. :	202603051	ANALYSIS NO. :	01
COMPANY NAME :	QB ENERGY OPERATING, LLC	ANALYSIS DATE:	MARCH 30, 2026 07:42
ACCOUNT NO. :		SAMPLE DATE :	FEBRUARY 28, 2026 8:30
PRODUCER :	QB ENERGY OPERATING LLC	CYLINDER NO. :	ECA-810
LEASE NO. :	71238	SAMPLED BY :	ALEX GALLEGOS
NAME/DESCRIP :	300105084 PG16 SHORE 16-7BB CASING		
FIELD DATA		SAMPLE TEMP. :	38
SAMPLE PRES. :	250	AMBIENT TEMP.:	
H2S BY STAIN TUBE:	_ *ppm mol*		
COMMENTS :	***SPOT*** ***NO PROBE***		

Componet	Mole %	Wt %
Helium	0.00	0.00
Hydrogen	0.06	0.01
Carbon Dioxide	1.07	2.63
Nitrogen	0.08	0.13
Methane	92.2236	82.5682
Ethane	4.1968	7.0427
Propane	1.1978	2.9477
Isobutane	0.2502	0.8116
n-Butane	0.2745	0.8904
Isopentane	0.1332	0.5364
n-Pentane	0.1030	0.4147
Cyclopentane	0.0071	0.0278
n-Hexane	0.0585	0.2813
Cyclohexane	0.0363	0.1705
Other Hexanes	0.1198	0.5720
Heptanes	0.0795	0.4429
Methylcyclohexane	0.0517	0.2833
2,2,4 Trimethylpentane	0.0002	0.0013
Benzene	0.0164	0.0715
Toluene	0.0160	0.0823
Ethylbenzene	0.0000	0.0000
Xylenes	0.0000	0.0000
C8+ Heavies	0.0063	0.0399
Subtotal	99.98090	99.95450
Oxygen/Argon	0.00	0.00
Glycols	0.0001	0.0004
Alcohols	0.0190	0.0451
Total	100.00000	100.00000

Calculated Values BTU @ **14.65**		**Total Sample**	**C6+ Fraction**	**C8+ Fraction**	**C10+ Fraction**	
LHV	Net Dry Real:	976.0	4569.5	5704.9	#DIV/0!	**Btu/scf**
	Net Wet Real:	958.9	4489.6	5605.2	#DIV/0!	**Btu/scf**
HHV	Gross Dry Real:	1081.0	4910.4	6150.8	#DIV/0!	**Btu/scf**
	Gross Wet Real:	1062.1	4824.6	6043.3	#DIV/0!	**Btu/scf**
Other Calculated Values						
Regualr Wobbe Index*		1375.7	2761.6	3103.3	#DIV/0!	**Btu/scf**
Net Heating Value (60 °F ideal reaction):		20698.2	19179.2	19733.6	#DIV/0!	**Btu/lbm**
Gross Heating Value (60°F ideal reaction):		22921.7	20610.5	21277.6	#DIV/0!	**Btu/lbm**
Molar Mass (MW):		17.91665	90.585	113.701	#DIV/0!	**g/mol**
Relative Density (AIR=1):		0.6184	3.1280	3.9260	#DIV/0!	**SG**
Density:		0.04721	0.23872	0.29962	#DIV/0!	**lbm/scf**
Compressiblity Factor:		0.9976	0.9916	0.9966	#DIV/0!	**Z**
Liquid Volume real gas @:	**14.65**	17.5938	0.1485	0.001	0	**gal/1000 scf**

**** The Wobbe pressure base in the number considered is based upon the given Pb of the HHV above.***

#DIV/0 or 0 (zero) will appear in the Calculated Value Section when there is no C6+, C8+ or C10+ in the sample to calculate these factors.

BDL - Below Detection Limit. The H2S LOS has a detection limit of 0.25 ppm. A _ (an uderscore) indicates there was no tube pulled for H2S.

EXTENDED NATURAL GAS ANALYSIS (*DHA)

DHA COMPONENT LIST

PRIMARY DB KEY:	**05-045-13622**	NAME/DESCRIP :	**300105084 PG16 SHORE 16-7BB**
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FIELD/AREA:	**PARACHUTE**		
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OFFICE / BRANCH:	PARACHUTE, CO	SAMPLE DATE :	FEBRUARY 28, 2026 8:30
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PRODUCER :	QB ENERGY OPERATING LLC	EFFECTIVE DATE:	
FIELD DATA			
SAMPLE CYCLE:		SAMPLE TYPE:	SPOT
SAMPLE PRES. :	250 psig	PROBE :	NO
FLOW PRES. :	psig	CYLINDER NO. :	ECA-810
LAB PRES:	psig	SAMPLED BY :	ALEX GALLEGOS
SAMPLE TEMP. :	38 ºf	SAMPLING COMPANY:	QB ENERGY
AMBIENT TEMP.:	ºf	H2S BY STAIN TUBE:	_ ppm mol
H2O BY STAIN TUBE:	- #/mmcf	CO2 BY STAIN TUBE:	- Mol %
FIELD COMMENTS:			
LAB COMMENTS:			

COMPONENT	PIANO #	MOLE %	MASS %	GPM @ **14.65**	GPM @ **14.73**
Hydrogen	---	0.06	0.01	---	---
Nitrogen	---	0.08	0.13	---	---
Carbon Dioxide	---	1.07	2.63	---	---
Methane	P1	92.2236	82.5682	---	---
Ethane	P2	4.1968	7.0427	1.119	1.125
Propane	P3	1.1978	2.9477	0.329	0.331
i-Butane	I4	0.2502	0.8116	0.082	0.082
Methanol	X1	0.0120	0.0215	0.002	0.002
n-Butane	P4	0.2745	0.8904	0.086	0.086
2,2-Dimethylpropane	I5	0.0040	0.0161	0.002	0.002
i-Pentane	I5	0.1292	0.5203	0.047	0.047
i-Propanol	X3	0.0069	0.0232	0.002	0.002
n-Pentane	P5	0.1029	0.4143	0.037	0.037
t-Butanol	X4	0.0001	0.0004	0.000	0.000
2,2-Dimethylbutane	I6	0.0056	0.0270	0.002	0.002
Cyclopentane	N5	0.0071	0.0278	0.002	0.002
2,3-Dimethylbutane	I6	0.0099	0.0476	0.004	0.004
2-Methylpentane	I6	0.0431	0.2073	0.018	0.018
3-Methylpentane	I6	0.0241	0.1159	0.010	0.010
UnknownC5s	U5	0.0001	0.0004	0.000	0.000
n-Hexane	P6	0.0585	0.2813	0.024	0.024
2,2-Dimethylpentane	I7	0.0016	0.0089	0.001	0.001
Methylcyclopentane	N6	0.0371	0.1742	0.013	0.013
2,4-Dimethylpentane	I7	0.0028	0.0157	0.001	0.001
2,2,3-Trimethylbutane	I7	0.0007	0.0039	0.000	0.000
Benzene	A6	0.0164	0.0715	0.005	0.005
3,3-Dimethylpentane	I7	0.0010	0.0056	0.000	0.000

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Cyclohexane	N6	0.0363	0.1705	0.012	0.012
2-Methylhexane	I7	0.0124	0.0694	0.006	0.006
2,3-Dimethylpentane	I7	0.0032	0.0179	0.001	0.001
1,1-Dimethylcyclopentane	N7	0.0027	0.0148	0.001	0.001
3-Methylhexane	I7	0.0111	0.0621	0.005	0.005
1c,3-Dimethylcyclopentane	N7	0.0047	0.0257	0.002	0.002
1t,3-Dimethylcyclopentane	N7	0.0042	0.0230	0.002	0.002
3-Ethylpentane	I7	0.0005	0.0028	0.000	0.000
1t,2-Dimethylcyclopentane	N7	0.0065	0.0356	0.003	0.003
2,2,4-Trimethylpentane	I8	0.0002	0.0013	0.000	0.000
n-Heptane	P7	0.0227	0.1270	0.010	0.010
1c,2-Dimethylcyclopentane	N7	0.0006	0.0033	0.000	0.000
Methylcyclohexane	N7	0.0517	0.2833	0.021	0.021
2,2-Dimethylhexane	I8	0.0002	0.0013	0.000	0.000
1,1,3-Trimethylcyclopentane	N7	0.0008	0.0050	0.000	0.000
Propylene Glycol	GL3	0.0001	0.0004	0.000	0.000
Ethylcyclopentane	N7	0.0015	0.0082	0.001	0.001
2,5-Dimethylhexane	I8	0.0005	0.0032	0.000	0.000
2,2,3-Trimethylpentane	I8	0.0005	0.0032	0.000	0.000
1c,2t,4-Trimethylcyclopentane	N8	0.0005	0.0031	0.000	0.000
3,3-Dimethylhexane	I8	0.0001	0.0006	0.000	0.000
Toluene	A7	0.0160	0.0823	0.005	0.005
2,3-Dimethylhexane	I8	0.0002	0.0013	0.000	0.000
2-Methylheptane	I8	0.0004	0.0026	0.000	0.000
4-Methylheptane	I8	0.0001	0.0006	0.000	0.000
3-Methylheptane	I8	0.0002	0.0013	0.000	0.000
1c,2t,3-Trimethylcyclopentane	N8	0.0007	0.0044	0.000	0.000
3-Ethylhexane	I8	0.0001	0.0006	0.000	0.000
1t,4-Dimethylcyclohexane	N8	0.0003	0.0019	0.000	0.000
1,1-Dimethylcyclohexane	N8	0.0001	0.0006	0.000	0.000
1t,2-Dimethylcyclohexane	N8	0.0001	0.0006	0.000	0.000
UnknownC7s	U7	0.0025	0.0140	0.001	0.001
n-Octane	P8	0.0001	0.0006	0.000	0.000
UnknownC8s	U8	0.0022	0.0140	0.001	0.001
TOTAL		100.00000	100.00000	1.8568	1.8666

BTEX COMPONENTS	MOLE%	WT%
BENZENE	0.0164	0.0715
TOLUENE	0.0160	0.0823
ETHYLBENZENE	0.0000	0.0000
XYLENES	0.0000	0.0000
TOTAL BTEX	0.0324	0.1538

(DETAILED HYDROCARBON ANALYSIS/NJ 1993)

Mod ASTM D6730,GPA 2261 & GPA 2286.

***(CALC: GPA 2172, GPA 2145 & TP-17 @14.696 & 60 F)*

CALCULATED VALUES**

	BTU @	14.65	14.73
LHV	NET DRY REAL :	976.0 /scf	981.3 /scf
	NET WET REAL :	958.9 /scf	964.2 /scf
HHV	GROSS DRY REAL :	1081.0 /scf	1086.9 /scf
	GROSS WET REAL :	1062.1 /scf	1068.0 /scf
	NET HEATING VALUE (60 °F ideal reaction):		20698.2 Btu/lbm
	GROSS HEATING VALUE (60°F ideal reaction):		22921.7 Btu/lbm
	RELATIVE DENSITY (AIR=1):		0.6184
	DENSITY		0.04721 lb/scf
	COMPRESSIBILITY FACTOR :		0.9976
	REGULAR WOBBE INDEX		1375.7

C6+ Fraction of DHA Gas Analysis @60°F, 14.696 psia

Net Dry Ideal BTU	4545.2 /scf	Relative Density - SG (Air=1)	3.128	***C6+factors***
Gross Dry Ideal BTU	4884.2 /scf	**Z** Compressiblity Factor	0.99156	0.99106
Net Dry Ideal BTU	19179.2 /lb	Density Factor	238.719 lbm/1000 ft3	
Gross Dry Ideal BTU	20610.5 /lb	Molar Mass or MW	90.585 g/mol	
		Volume Liquid Ideal gas	0.149 scf/gal	25

This hexanes plus fraction may be applied in place of published C6+ factors. The Z & GPM need additional calc for C6+ factors.

***#DIV/0 or 0 (zero)** will appear in this section when there is no hexanes plus in the sample to calculate C6+ factors.*