



EXTENDED NATURAL GAS ANALYSIS (*DHA)

MAIN PAGE

PRIMARY DB KEY: **05-103-10814** NAME/DESCRIP : **PCU 297-15A6**
 LEASE #: **COC-47666A** **PRODUCTION CASING**
 FIELD/AREA: **PICEANCE CREEK**

PROJECT NO. : **202601123** ANALYSIS NO. : **01**
 COMPANY NAME : **QB ENERGY OPERATING, LLC** ANALYSIS DATE: **FEBRUARY 07, 2026 13:43**
 OFFICE / BRANCH: **PARACHUTE, CO** SAMPLE DATE : **JANUARY 22, 2026**
 CUSTOMER REF: TO:
 PRODUCER : **QB ENERGY OPERATING, LLC** EFFECTIVE DATE:

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

SAMPLE CYCLE: SAMPLE TYPE: SPOT
 SAMPLE PRES. : 626 psig PROBE : NO
 FLOW PRES. : psig CYLINDER NO. : ECA-746
 LAB PRES: psig SAMPLED BY : MIKE KELLEY
 SAMPLE TEMP. : 41 °f SAMPLING COMPANY: **QB ENERGY**
 AMBIENT TEMP.: °f 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	14.73
ALCOHOLS	0.2539	0.4725	0.0320	0.0321
HELIUM	0.00	0.00	---	---
HYDROGEN	4.15	0.49	---	---
OXYGEN/ARGON	0.01	0.02	---	---
NITROGEN	0.15	0.24	---	---
CARBON DIOXIDE	0.47	1.20	---	---
METHANE	87.8206	81.7713	---	---
ETHANE	4.7656	8.3170	1.2699	1.2769
PROPANE	1.3306	3.4055	0.3657	0.3677
I-BUTANE	0.3273	1.1041	0.1069	0.1075
N-BUTANE	0.2840	0.9581	0.0889	0.0894
I-PENTANE	0.1525	0.6381	0.0560	0.0562
N-PENTANE	0.0967	0.4049	0.0350	0.0352
HEXANES PLUS	0.1888	0.9785	0.0760	0.0762
TOTALS	100.0000	100.0000	2.0304	2.0412

BTEX COMPONENTS	MOLE%	WT%
BENZENE	0.0001	0.0005
TOLUENE	0.0001	0.0005
ETHYLBENZENE	0.0000	0.0000
XYLENES	0.0001	0.0006
TOTAL BTEX	0.0003	0.0016

	CALCULATED VALUES**	
	14.65	14.73
LHV NET DRY REAL :	955.1 /scf	960.3 /scf
NET WET REAL :	938.4 /scf	943.6 /scf
HHV GROSS DRY REAL :	1058.6 /scf	1064.4 /scf
GROSS WET REAL :	1040.1 /scf	1045.9 /scf
NET HEATING VALUE (60 °F ideal reaction):		21060.3 Btu/lbm
GROSS HEATING VALUE (60°F ideal reaction):		23341.7 Btu/lbm
RELATIVE DENSITY (AIR=1):		0.5948
DENSITY		0.04540 lbm/scf
COMPRESSIBILITY FACTOR :		0.9977
REGULAR WOBBE INDEX		1373.8

*(DETAILED HYDROCARBON ANALYSIS/NJ 1993)

Mod ASTM D6730, GPA 2261 & GPA 2286.

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

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**EXTENDED NATURAL GAS ANALYSIS (*DHA)
GLYCALC INFORMATION**

PROJECT NO. :	202601123	ANALYSIS NO. :	01
COMPANY NAME :	QB ENERGY OPERATING, LLC	ANALYSIS DATE:	FEBRUARY 07, 2026 13:43
ACCOUNT NO. :		SAMPLE DATE :	JANUARY 22, 2026
PRODUCER :	QB ENERGY OPERATING, LLC	CYLINDER NO. :	ECA-746
LEASE NO. :	COC-47666A	SAMPLED BY :	MIKE KELLEY
NAME/DESCRIP :	PCU 297-15A6 PRODUCTION CASING		

FIELD DATA		SAMPLE TEMP. :	41
SAMPLE PRES. :	626	AMBIENT TEMP.:	
H2S BY STAIN TUBE:	—		
COMMENTS :	<i>SPOT</i>		<i>NO PROBE</i>

<u>Componet</u>	<u>Mole %</u>	<u>Wt %</u>
Helium	0.00	0.00
Hydrogen	4.15	0.49
Carbon Dioxide	0.47	1.20
Nitrogen	0.15	0.24
Methane	87.8206	81.7713
Ethane	4.7656	8.3170
Propane	1.3306	3.4055
Isobutane	0.3273	1.1041
n-Butane	0.2840	0.9581
Isopentane	0.1485	0.6218
n-Pentane	0.0967	0.4049
Cyclopentane	0.0040	0.0163
n-Hexane	0.0429	0.2146
Cyclohexane	0.0102	0.0498
Other Hexanes	0.0900	0.4485
Heptanes	0.0358	0.2073
Methylcyclohexane	0.0071	0.0404
2,2,4 Trimethylpentane	0.0001	0.0006
Benzene	0.0001	0.0005
Toluene	0.0001	0.0005
Ethylbenzene	0.0000	0.0000
Xylenes	0.0001	0.0006
C8+ Heavies	0.0024	0.0157
<u>Subtotal</u>	<u>99.73610</u>	<u>99.50750</u>
Oxygen/Argon	0.01	0.02
Alcohols	0.2539	0.4725
<u>Total</u>	<u>100.00000</u>	<u>100.00000</u>

	<u>Total</u>	<u>C6+</u>	<u>C8+</u>	<u>C10+</u>
Calculated Values BTU @ <u>14.65</u>	Sample	Fraction	Fraction	Fraction
LHV Net Dry Real:	955.1	4571.8	5680.8	7165.1 Btu/scf
Net Wet Real:	938.4	4491.9	5581.5	7039.8 Btu/scf
HHV Gross Dry Real:	1058.6	4929.9	6120.2	7716.9 Btu/scf
Gross Wet Real:	1040.1	4843.7	6013.2	7582.0 Btu/scf
Other Calculated Values				
Regualr Wobbe Index*	1373.8	2784.4	3074.1	3490.8 Btu/scf
Net Heating Value (60 °F ideal reaction):	21060.3	19351.6	19492.5	19160.4 Btu/lbm
Gross Heating Value (60°F ideal reaction):	23341.7	20868.7	21002.0	20636.2 Btu/lbm
Molar Mass (MW):	17.22914	89.347	114.692	142.285 g/mol
Relative Density (AIR=1):	0.5948	3.0852	3.9600	4.9127 SG
Density:	0.04540	0.23545	0.30223	0.37494 lbm/scf
Compressibility Factor:	0.9977	0.9890	0.9964	0.9995 Z
Liquid Volume real gas @:	<u>14.65</u>	17.2967	0.0758	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 underscore) indicates there was no tube pulled for H2S.

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DHA COMPONENT LIST

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

SAMPLE CYCLE: SAMPLE TYPE: **SPOT**
 SAMPLE PRES. : **626** psig PROBE : **NO**
 FLOW PRES. : psig CYLINDER NO. : **ECA-746**
 LAB PRES: psig SAMPLED BY : **MIKE KELLEY**
 SAMPLE TEMP. : **41** °f SAMPLING COMPANY: **QB ENERGY**
 AMBIENT TEMP.: °f 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	---	4.15	0.49	---	---
Oxygen/Argon	---	0.01	0.02	---	---
Nitrogen	---	0.15	0.24	---	---
Carbon Dioxide	---	0.47	1.20	---	---
Methane	P1	87.8206	81.7713	---	---
Ethane	P2	4.7656	8.3170	1.270	1.277
Propane	P3	1.3306	3.4055	0.366	0.368
i-Butane	I4	0.3273	1.1041	0.107	0.108
Methanol	X1	0.2537	0.4718	0.032	0.032
n-Butane	P4	0.2840	0.9581	0.089	0.089
2,2-Dimethylpropane	I5	0.0044	0.0184	0.002	0.002
i-Pentane	I5	0.1441	0.6034	0.053	0.053
Acetone	X3	0.0002	0.0007	0.000	0.000
n-Pentane	P5	0.0967	0.4049	0.035	0.035
2,2-Dimethylbutane	I6	0.0064	0.0320	0.003	0.003
Cyclopentane	N5	0.0040	0.0163	0.001	0.001
2,3-Dimethylbutane	I6	0.0094	0.0470	0.004	0.004
2-Methylpentane	I6	0.0385	0.1926	0.016	0.016
3-Methylpentane	I6	0.0205	0.1026	0.008	0.008
n-Hexane	P6	0.0429	0.2146	0.018	0.018
2,2-Dimethylpentane	I7	0.0015	0.0087	0.001	0.001
Methylcyclopentane	N6	0.0151	0.0738	0.005	0.005
2,4-Dimethylpentane	I7	0.0023	0.0133	0.001	0.001
2,2,3-Trimethylbutane	I7	0.0005	0.0029	0.000	0.000
Benzene	A6	0.0001	0.0005	0.000	0.000
3,3-Dimethylpentane	I7	0.0006	0.0035	0.000	0.000
Cyclohexane	N6	0.0102	0.0498	0.003	0.003

2-Methylhexane	I7	0.0075	0.0436	0.003	0.003
2,3-Dimethylpentane	I7	0.0016	0.0093	0.001	0.001
1,1-Dimethylcyclopentane	N7	0.0012	0.0068	0.000	0.000
3-Methylhexane	I7	0.0058	0.0337	0.003	0.003
1c,3-Dimethylcyclopentane	N7	0.0015	0.0085	0.001	0.001
1t,3-Dimethylcyclopentane	N7	0.0013	0.0074	0.001	0.001
3-Ethylpentane	I7	0.0002	0.0012	0.000	0.000
1t,2-Dimethylcyclopentane	N7	0.0019	0.0108	0.001	0.001
2,2,4-Trimethylpentane	I8	0.0001	0.0006	0.000	0.000
UnknownC6s	U6	0.0001	0.0005	0.000	0.000
n-Heptane	P7	0.0093	0.0541	0.004	0.004
1c,2-Dimethylcyclopentane	N7	0.0003	0.0017	0.000	0.000
Methylcyclohexane	N7	0.0071	0.0404	0.003	0.003
2,2-Dimethylhexane	I8	0.0003	0.0020	0.000	0.000
1,1,3-Trimethylcyclopentane	N7	0.0001	0.0006	0.000	0.000
Ethylcyclopentane	N7	0.0002	0.0012	0.000	0.000
2,5-Dimethylhexane	I8	0.0003	0.0020	0.000	0.000
2,2,3-Trimethylpentane	I8	0.0002	0.0013	0.000	0.000
1c,2t,4-Trimethylcyclopentane	N8	0.0001	0.0006	0.000	0.000
3,3-Dimethylhexane	I8	0.0001	0.0006	0.000	0.000
Toluene	A7	0.0001	0.0005	0.000	0.000
2,3-Dimethylhexane	I8	0.0001	0.0006	0.000	0.000
2-Methylheptane	I8	0.0004	0.0027	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	0.0002	0.0013	0.000	0.000
1t,4-Dimethylcyclohexane	N8	0.0001	0.0006	0.000	0.000
n-Octane	P8	0.0002	0.0013	0.000	0.000
1,3-Dimethylbenzene (m-Xylene)	A8	0.0001	0.0006	0.000	0.000
3-Methylnonane	I10	0.0001	0.0008	0.000	0.000
TOTAL		100.0000	100.0000	2.0304	2.0412

CALCULATED VALUES**

BTEX COMPONENTS	MOLE%	WT%	BTU @	14.65	14.73
BENZENE	0.0001	0.0005	LHV NET DRY REAL :	955.1 /scf	960.3 /scf
TOLUENE	0.0001	0.0005	NET WET REAL :	938.4 /scf	943.6 /scf
ETHYLBENZENE	0.0000	0.0000	HHV GROSS DRY REAL :	1058.6 /scf	1064.4 /scf
XYLENES	0.0001	0.0006	GROSS WET REAL :	1040.1 /scf	1045.9 /scf
TOTAL BTEX	0.0003	0.0016	NET HEATING VALUE (60 °F ideal reaction):		21060.3 Btu/lbm
			GROSS HEATING VALUE (60°F ideal reaction):		23341.7 Btu/lbm
			RELATIVE DENSITY (AIR=1):		0.5948
			DENSITY		0.04540 lb/scf
			COMPRESSIBILITY FACTOR :		0.9977
			REGULAR WOBBE INDEX		1373.8

*(DETAILED HYDROCARBON ANALYSIS/NJ 1993)

Mod ASTM D6730, GPA 2261 & GPA 2286.

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

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

Net Dry Ideal BTU	<u>4535.6</u> /scf	Relative Density - SG (Air=1)	<u>3.0852</u>	C6+ factors
Gross Dry Ideal BTU	<u>4890.8</u> /scf	Z Compressibility Factor	<u>0.98897</u>	<u>0.98855</u>
Net Dry Ideal BTU	<u>19351.6</u> /lb	Density Factor	<u>235.448</u> lbm/1000 ft3	
Gross Dry Ideal BTU	<u>20868.7</u> /lb	Molar Mass or MW	<u>89.347</u> g/mol	
		Volume Liquid Ideal gas	<u>0.076</u> scf/gal	<u>24.2</u>

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.

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