

EXTENDED NATURAL GAS ANALYSIS (*DHA)

MAIN PAGE

PRIMARY DB KEY: **05-103-10877** NAME/DESCRIP : **125190189 PCU 297-13A9**
 LEASE #: **COD052141** INTERMEDIATE CASING
 FIELD/AREA: **PICEANCE CREEK**

PROJECT NO. : **202603077** ANALYSIS NO. : **01**
 COMPANY NAME : **QB ENERGY OPERATING, LLC** ANALYSIS DATE: **APRIL 09, 2026 18:31**
 OFFICE / BRANCH: **PARACHUTE, CO** SAMPLE DATE : **MARCH 5, 2026**
 CUSTOMER REF: TO:
 PRODUCER : **QB ENERGY OPERATING LLC** EFFECTIVE DATE:

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

SAMPLE CYCLE: SAMPLE TYPE: SPOT
 SAMPLE PRES. : 530 psig PROBE : NO
 FLOW PRES. : psig CYLINDER NO. : 6
 LAB PRES: psig SAMPLED BY : MIKE KELLEY
 SAMPLE TEMP. : 46 °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:

<u>COMPONENT</u>	<u>MOLE %</u>	<u>MASS %</u>	<u>GPM @ 14.65</u>	<u>GPM @ 14.73</u>
HELIUM	0.00	0.00	---	---
HYDROGEN	0.14	0.01	---	---
OXYGEN/ARGON	0.00	0.00	---	---
NITROGEN	0.08	0.12	---	---
CARBON DIOXIDE	2.56	5.95	---	---
METHANE	87.1538	73.8558	---	---
ETHANE	6.7720	10.7563	1.8051	1.8150
PROPANE	1.9140	4.4582	0.5258	0.5286
I-BUTANE	0.4573	1.4040	0.1489	0.1497
N-BUTANE	0.3844	1.1802	0.1209	0.1216
I-PENTANE	0.1872	0.7131	0.0680	0.0683
N-PENTANE	0.1143	0.4356	0.0410	0.0412
HEXANES PLUS	0.2370	1.1168	0.0930	0.0932
TOTALS	100.0000	100.0000	2.8027	2.8176

<u>BTEX COMPONENTS</u>	<u>MOLE%</u>	<u>WT%</u>
BENZENE	0.0145	0.0599
TOLUENE	0.0065	0.0316
ETHYLBENZENE	0.0000	0.0000
XYLENES	0.0000	0.0000
TOTAL BTEX	0.0210	0.0915

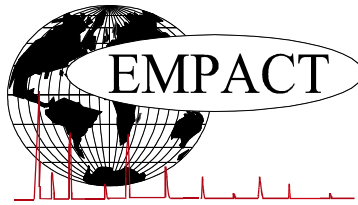
	<u>CALCULATED VALUES**</u>	
<u>BTU @</u>	<u>14.65</u>	<u>14.73</u>
LHV NET DRY REAL :	993.4 /scf	998.9 /scf
NET WET REAL :	976.0 /scf	981.5 /scf
HHV GROSS DRY REAL :	1099.0 /scf	1105.0 /scf
GROSS WET REAL :	1079.8 /scf	1085.8 /scf
NET HEATING VALUE (60 °F ideal reaction):	19922.6 Btu/lbm	19922.6 Btu/lbm
GROSS HEATING VALUE (60°F ideal reaction):	22040.4 Btu/lbm	22040.4 Btu/lbm
RELATIVE DENSITY (AIR=1):	0.6537	0.6537
DENSITY	0.04988 lbm/scf	0.04988 lbm/scf
COMPRESSIBILITY FACTOR :	0.9973	0.9973
REGULAR WOBBE INDEX	1359.9	1359.9

*(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. :	202603077	ANALYSIS NO. :	01
COMPANY NAME :	QB ENERGY OPERATING, LLC	ANALYSIS DATE:	APRIL 09, 2026 18:31
ACCOUNT NO. :		SAMPLE DATE :	MARCH 5, 2026
PRODUCER :	QB ENERGY OPERATING LLC	CYLINDER NO. :	6
LEASE NO. :	COD052141	SAMPLED BY :	MIKE KELLEY
NAME/DESCRIP :	125190189 PCU 297-13A9 INTERMEDIATE CASING		

FIELD DATA		SAMPLE TEMP. :	46
SAMPLE PRES. :	530	AMBIENT TEMP.:	
H2S BY STAIN TUBE:	—		
COMMENTS :	<i>SPOT</i> <i>ppm mol</i> <i>NO PROBE</i>		

<u>Componet</u>	<u>Mole %</u>	<u>Wt %</u>
Helium	0.00	0.00
Hydrogen	0.14	0.01
Carbon Dioxide	2.56	5.95
Nitrogen	0.08	0.12
Methane	87.1538	73.8558
Ethane	6.7720	10.7563
Propane	1.9140	4.4582
Isobutane	0.4573	1.4040
n-Butane	0.3844	1.1802
Isopentane	0.1833	0.6986
n-Pentane	0.1143	0.4356
Cyclopentane	0.0039	0.0145
n-Hexane	0.0422	0.1921
Cyclohexane	0.0180	0.0800
Other Hexanes	0.0901	0.4082
Heptanes	0.0412	0.2169
Methylcyclohexane	0.0233	0.1209
2,2,4 Trimethylpentane	0.0001	0.0006
Benzene	0.0145	0.0599
Toluene	0.0065	0.0316
Ethylbenzene	0.0000	0.0000
Xylenes	0.0000	0.0000
C8+ Heavies	0.0011	0.0066
<u>Subtotal</u>	<u>100.00000</u>	<u>100.00000</u>
<u>Oxygen/Argon</u>	<u>0.00</u>	<u>0.00</u>
Total	100.00000	100.00000

	Total	C6+	C8+	C10+	
	Sample	Fraction	Fraction	Fraction	
Calculated Values BTU @ 14.65					
LHV Net Dry Real:	993.4	4512.4	5508.6	#DIV/0!	Btu/scf
Net Wet Real:	976.0	4433.5	5412.3	#DIV/0!	Btu/scf
HHV Gross Dry Real:	1099.0	4851.0	5941.2	#DIV/0!	Btu/scf
Gross Wet Real:	1079.8	4766.2	5837.3	#DIV/0!	Btu/scf
Other Calculated Values					
Regualr Wobbe Index*	1359.9	2746.1	2991.1	#DIV/0!	Btu/scf
Net Heating Value (60 °F ideal reaction):	19922.6	19172.4	19483.8	#DIV/0!	Btu/lbm
Gross Heating Value (60°F ideal reaction):	22040.4	20611.4	21014.4	#DIV/0!	Btu/lbm
Molar Mass (MW):	18.93182	89.211	113.894	#DIV/0!	g/mol
Relative Density (AIR=1):	0.6537	3.0806	3.9327	#DIV/0!	SG
Density:	0.04988	0.23509	0.30013	#DIV/0!	lbm/scf
Compressibility Factor:	0.9973	0.9905	0.9953	#DIV/0!	Z
Liquid Volume real gas @:	14.65	17.9427	0.0927	0	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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**EXTENDED NATURAL GAS ANALYSIS (*DHA)
DHA COMPONENT LIST**

PRIMARY DB KEY:	05-103-10877	NAME/DESCRIP :	125190189 PCU 297-13A9
LEASE #:	COD052141		INTERMEDIATE CASING
FIELD/AREA:	PICEANCE CREEK		
PROJECT NO. :	202603077	ANALYSIS NO. :	01
COMPANY NAME :	QB ENERGY OPERATING, LLC	ANALYSIS DATE:	APRIL 09, 2026 18:31
OFFICE / BRANCH:	PARACHUTE, CO	SAMPLE DATE :	MARCH 5, 2026
CUSTOMER REF:		TO:	
PRODUCER :	QB ENERGY OPERATING LLC	EFFECTIVE DATE:	
FIELD DATA			
SAMPLE CYCLE:		SAMPLE TYPE:	SPOT
SAMPLE PRES. :	530 psig	PROBE :	NO
FLOW PRES. :	psig	CYLINDER NO. :	6
LAB PRES:	psig	SAMPLED BY :	MIKE KELLEY
SAMPLE TEMP. :	46 °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	---	0.14	0.01	---	---
Nitrogen	---	0.08	0.12	---	---
Carbon Dioxide	---	2.56	5.95	---	---
Methane	P1	87.1538	73.8558	---	---
Ethane	P2	6.7720	10.7563	1.805	1.815
Propane	P3	1.9140	4.4582	0.526	0.529
i-Butane	I4	0.4573	1.4040	0.149	0.150
n-Butane	P4	0.3844	1.1802	0.121	0.122
2,2-Dimethylpropane	I5	0.0042	0.0160	0.002	0.002
i-Pentane	I5	0.1791	0.6826	0.065	0.065
n-Pentane	P5	0.1143	0.4356	0.041	0.041
2,2-Dimethylbutane	I6	0.0052	0.0237	0.002	0.002
Cyclopentane	N5	0.0039	0.0145	0.001	0.001
2,3-Dimethylbutane	I6	0.0091	0.0414	0.004	0.004
2-Methylpentane	I6	0.0367	0.1671	0.015	0.015
3-Methylpentane	I6	0.0201	0.0915	0.008	0.008
n-Hexane	P6	0.0422	0.1921	0.017	0.017
2,2-Dimethylpentane	I7	0.0012	0.0063	0.001	0.001
Methylcyclopentane	N6	0.0190	0.0845	0.007	0.007
2,4-Dimethylpentane	I7	0.0019	0.0100	0.001	0.001
2,2,3-Trimethylbutane	I7	0.0004	0.0021	0.000	0.000
Benzene	A6	0.0145	0.0599	0.004	0.004
3,3-Dimethylpentane	I7	0.0006	0.0032	0.000	0.000
Cyclohexane	N6	0.0180	0.0800	0.006	0.006
2-Methylhexane	I7	0.0070	0.0370	0.003	0.003
2,3-Dimethylpentane	I7	0.0018	0.0095	0.001	0.001
1,1-Dimethylcyclopentane	N7	0.0017	0.0088	0.001	0.001

3-Methylhexane	I7	0.0061	0.0323	0.003	0.003
1c,3-Dimethylcyclopentane	N7	0.0022	0.0114	0.001	0.001
1t,3-Dimethylcyclopentane	N7	0.0020	0.0104	0.001	0.001
3-Ethylpentane	I7	0.0003	0.0016	0.000	0.000
1t,2-Dimethylcyclopentane	N7	0.0031	0.0161	0.001	0.001
2,2,4-Trimethylpentane	I8	0.0001	0.0006	0.000	0.000
n-Heptane	P7	0.0120	0.0635	0.006	0.006
1c,2-Dimethylcyclopentane	N7	0.0003	0.0015	0.000	0.000
Methylcyclohexane	N7	0.0233	0.1209	0.009	0.009
2,2-Dimethylhexane	I8	0.0004	0.0024	0.000	0.000
1,1,3-Trimethylcyclopentane	N7	0.0001	0.0006	0.000	0.000
Ethylcyclopentane	N7	0.0005	0.0026	0.000	0.000
2,5-Dimethylhexane	I8	0.0002	0.0012	0.000	0.000
2,2,3-Trimethylpentane	I8	0.0001	0.0006	0.000	0.000
1c,2t,4-Trimethylcyclopentane	N8	0.0001	0.0006	0.000	0.000
Toluene	A7	0.0065	0.0316	0.002	0.002
2,3-Dimethylhexane	I8	0.0001	0.0006	0.000	0.000
2-Methylheptane	I8	0.0001	0.0006	0.000	0.000
1c,2t,3-Trimethylcyclopentane	N8	0.0001	0.0006	0.000	0.000
TOTAL		<u>100.00000</u>	<u>100.00000</u>	<u>2.8027</u>	<u>2.8176</u>

CALCULATED VALUES**

BTX COMPONENTS	MOLE%	WT%	BTU @		
			14.65	14.73	
BENZENE	0.0145	0.0599	LHV NET DRY REAL :	993.4 /scf	998.9 /scf
TOLUENE	0.0065	0.0316	NET WET REAL :	976.0 /scf	981.5 /scf
ETHYLBENZENE	0.0000	0.0000	HHV GROSS DRY REAL :	1099.0 /scf	1105.0 /scf
XYLENES	0.0000	0.0000	GROSS WET REAL :	1079.8 /scf	1085.8 /scf
TOTAL BTX	0.0210	0.0915	NET HEATING VALUE (60 °F ideal reaction):		19922.6 Btu/lbm
			GROSS HEATING VALUE (60°F ideal reaction):		22040.4 Btu/lbm
			RELATIVE DENSITY (AIR=1):		0.6537
			DENSITY		0.04988 lb/scf
			COMPRESSIBILITY FACTOR :		0.9973
			REGULAR WOBBE INDEX		1359.9

*(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>4483.5</u> /scf	Relative Density - SG (Air=1)	<u>3.0806</u>	C6+ factors
Gross Dry Ideal BTU	<u>4819.9</u> /scf	Z Compressibility Factor	<u>0.99048</u>	<u>0.98993</u>
Net Dry Ideal BTU	<u>19172.4</u> /lb	Density Factor	<u>235.095</u> lbm/1000 ft3	
Gross Dry Ideal BTU	<u>20611.4</u> /lb	Molar Mass or MW	<u>89.211</u> g/mol	
		Volume Liquid Ideal gas	<u>0.093</u> scf/gal	<u>25.4</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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