



EXTENDED NATURAL GAS ANALYSIS (*DHA)

MAIN PAGE

PRIMARY DB KEY:	05-103-10403	NAME/DESCRIP :	YCF 33-43-1
LEASE #:	05-103-10403		SURFACE CASING
FIELD/AREA:	YELLOW CREEK		
PROJECT NO. :	202512130	ANALYSIS NO. :	03
COMPANY NAME :	QB ENERGY OPERATING, LLC	ANALYSIS DATE:	JANUARY 09, 2026 09:17
OFFICE / BRANCH:	PARACHUTE, CO	SAMPLE DATE :	DECEMBER 4, 2025
CUSTOMER REF:		TO:	
PRODUCER :	QB ENERGY OPERATING, LLC	EFFECTIVE DATE:	

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

SAMPLE CYCLE:		SAMPLE TYPE:	
SAMPLE PRES. :	100 psig	PROBE :	
FLOW PRES. :	psig	CYLINDER NO. :	ECA-800
LAB PRES:	psig	SAMPLED BY :	NICK CROY
SAMPLE TEMP. :	°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>
ALCOHOLS	0.0008	0.0020	0.0000	0.0000
HELIUM	0.01	0.00	---	---
HYDROGEN	0.00	0.00	---	---
OXYGEN/ARGON	0.01	0.02	---	---
NITROGEN	0.30	0.46	---	---
CARBON DIOXIDE	0.00	0.00	---	---
METHANE	89.1161	77.5817	---	---
ETHANE	6.9557	11.3498	1.8541	1.8643
PROPANE	2.0528	4.9121	0.5637	0.5668
I-BUTANE	0.3695	1.1654	0.1209	0.1216
N-BUTANE	0.5241	1.6530	0.1649	0.1658
I-PENTANE	0.2102	0.8223	0.0760	0.0764
N-PENTANE	0.1735	0.6793	0.0630	0.0633
HEXANES PLUS	0.2773	1.3544	0.1100	0.1102
TOTALS	100.00000	100.00000	2.9526	2.9684

<u>BTEX COMPONENTS</u>	<u>MOLE%</u>	<u>WT%</u>
BENZENE	0.0019	0.0080
TOLUENE	0.0007	0.0035
ETHYLBENZENE	0.0001	0.0006
XYLENES	0.0001	0.0006
TOTAL BTEX	0.0028	0.0127

	<u>BTU @ 14.65</u>	<u>14.73</u>
LHV NET DRY REAL :	1023.0 /scf	1028.6 /scf
NET WET REAL :	1005.1 /scf	1010.7 /scf
HHV GROSS DRY REAL :	1131.9 /scf	1138.0 /scf
GROSS WET REAL :	1112.1 /scf	1118.2 /scf
NET HEATING VALUE (60 °F ideal reaction):	21093.1 Btu/lbm	21093.1 Btu/lbm
GROSS HEATING VALUE (60°F ideal reaction):	23331.9 Btu/lbm	23331.9 Btu/lbm
RELATIVE DENSITY (AIR=1):	0.6359	0.6359
DENSITY	0.04855 lbm/scf	0.04855 lbm/scf
COMPRESSIBILITY FACTOR :	0.9973	0.9973
REGULAR WOBBE INDEX	1420.1	1420.1

*(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. :	202512130	ANALYSIS NO. :	03
COMPANY NAME :	QB ENERGY OPERATING, LLC	ANALYSIS DATE:	JANUARY 09, 2026 09:17
ACCOUNT NO. :		SAMPLE DATE :	DECEMBER 4, 2025
PRODUCER :	QB ENERGY OPERATING, LLC	CYLINDER NO. :	ECA-800
LEASE NO. :	05-103-10403	SAMPLED BY :	NICK CROY
NAME/DESCRIP :	YCF 33-43-1		
	SURFACE CASING		

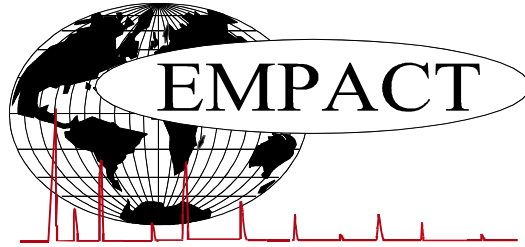
FIELD DATA		SAMPLE TEMP. :	
SAMPLE PRES. :	100	AMBIENT TEMP.:	
H2S BY STAIN TUBE:	— ppm mol		
COMMENTS :			

<u>Componet</u>	<u>Mole %</u>	<u>Wt %</u>
Helium	0.01	0.00
Hydrogen	0.00	0.00
Carbon Dioxide	0.00	0.00
Nitrogen	0.30	0.46
Methane	89.1161	77.5817
Ethane	6.9557	11.3498
Propane	2.0528	4.9121
Isobutane	0.3695	1.1654
n-Butane	0.5241	1.6530
Isopentane	0.2041	0.7991
n-Pentane	0.1735	0.6793
Cyclopentane	0.0061	0.0232
n-Hexane	0.0570	0.2666
Cyclohexane	0.0263	0.1201
Other Hexanes	0.1144	0.5325
Heptanes	0.0446	0.2414
Methylcyclohexane	0.0214	0.1140
2,2,4 Trimethylpentane	0.0001	0.0006
Benzene	0.0019	0.0080
Toluene	0.0007	0.0035
Ethylbenzene	0.0001	0.0006
Xylenes	0.0001	0.0006
C8+ Heavies	0.0107	0.0665
<u>Subtotal</u>	<u>99.98920</u>	<u>99.97800</u>
Oxygen/Argon	0.01	0.02
Alcohols	0.0008	0.0020
<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:	1023.0	4587.6	5769.1	7170.4 Btu/scf
Net Wet Real:	1005.1	4507.4	5668.2	7045.1 Btu/scf
HHV Gross Dry Real:	1131.9	4943.2	6215.3	7721.8 Btu/scf
Gross Wet Real:	1112.1	4856.8	6106.6	7586.8 Btu/scf
Other Calculated Values				
Regualr Wobbe Index*	1420.1	2784.3	3120.7	3493.4 Btu/scf
Net Heating Value (60 °F ideal reaction):	21093.1	19324.9	19906.1	19176.4 Btu/lbm
Gross Heating Value (60°F ideal reaction):	23331.9	20822.1	21447.6	20651.0 Btu/lbm
Molar Mass (MW):	18.42688	90.04	114.893	142.282 g/mol
Relative Density (AIR=1):	0.6359	3.1090	3.9674	4.9126 SG
Density:	0.04855	0.23728	0.30278	0.37493 lbm/scf
Compressibility Factor:	0.9973	0.9901	0.9970	0.9996 Z
Liquid Volume real gas @:	<u>14.65</u>	18.0015	0.1097	0.003 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: **05-103-10403** NAME/DESCRIP : **YCF 33-43-1**
 LEASE #: **05-103-10403** SURFACE CASING
 FIELD/AREA: **YELLOW CREEK**

PROJECT NO. : **202512130** ANALYSIS NO. : **03**
 COMPANY NAME : **QB ENERGY OPERATING, LLC** ANALYSIS DATE: **JANUARY 09, 2026 09:17**
 OFFICE / BRANCH: **PARACHUTE, CO** SAMPLE DATE : **DECEMBER 4, 2025**
 CUSTOMER REF: TO:
 PRODUCER : **QB ENERGY OPERATING, LLC** EFFECTIVE DATE:

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

SAMPLE CYCLE: SAMPLE TYPE:
 SAMPLE PRES. : 100 psig PROBE :
 FLOW PRES. : psig CYLINDER NO. : **ECA-800**
 LAB PRES: psig SAMPLED BY : **NICK CROY**
 SAMPLE TEMP. : °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
Helium	---	0.01	0.00	---	---
Oxygen/Argon	---	0.01	0.02	---	---
Nitrogen	---	0.30	0.46	---	---
Methane	P1	89.1161	77.5817	---	---
Ethane	P2	6.9557	11.3498	1.854	1.864
Propane	P3	2.0528	4.9121	0.564	0.567
i-Butane	I4	0.3695	1.1654	0.121	0.122
Methanol	X1	0.0004	0.0007	0.000	0.000
n-Butane	P4	0.5237	1.6518	0.165	0.166
2,2-Dimethylpropane	I5	0.0061	0.0239	0.002	0.002
Ethanol	X2	0.0001	0.0003	0.000	0.000
i-Pentane	I5	0.1980	0.7752	0.072	0.072
Acetone	X3	0.0002	0.0006	0.000	0.000
UnknownC4s	U4	0.0004	0.0012	0.000	0.000
n-Pentane	P5	0.1735	0.6793	0.063	0.063
t-Butanol	X4	0.0001	0.0004	0.000	0.000
2,2-Dimethylbutane	I6	0.0075	0.0351	0.003	0.003
Cyclopentane	N5	0.0061	0.0232	0.002	0.002
2,3-Dimethylbutane	I6	0.0112	0.0524	0.005	0.005
2-Methylpentane	I6	0.0480	0.2244	0.020	0.020
3-Methylpentane	I6	0.0251	0.1174	0.010	0.010
n-Hexane	P6	0.0570	0.2666	0.023	0.023
2,2-Dimethylpentane	I7	0.0014	0.0076	0.001	0.001
Methylcyclopentane	N6	0.0226	0.1032	0.008	0.008
2,4-Dimethylpentane	I7	0.0022	0.0119	0.001	0.001
2,2,3-Trimethylbutane	I7	0.0005	0.0027	0.000	0.000
Benzene	A6	0.0019	0.0080	0.001	0.001

3,3-Dimethylpentane	I7	0.0007	0.0038	0.000	0.000
Cyclohexane	N6	0.0263	0.1201	0.009	0.009
2-Methylhexane	I7	0.0074	0.0403	0.003	0.003
2,3-Dimethylpentane	I7	0.0022	0.0119	0.001	0.001
1,1-Dimethylcyclopentane	N7	0.0016	0.0085	0.001	0.001
3-Methylhexane	I7	0.0065	0.0353	0.003	0.003
1c,3-Dimethylcyclopentane	N7	0.0023	0.0123	0.001	0.001
1t,3-Dimethylcyclopentane	N7	0.0020	0.0106	0.001	0.001
3-Ethylpentane	I7	0.0003	0.0016	0.000	0.000
1t,2-Dimethylcyclopentane	N7	0.0029	0.0155	0.001	0.001
2,2,4-Trimethylpentane	I8	0.0001	0.0006	0.000	0.000
n-Heptane	P7	0.0134	0.0729	0.006	0.006
1c,2-Dimethylcyclopentane	N7	0.0003	0.0016	0.000	0.000
Methylcyclohexane	N7	0.0214	0.1140	0.009	0.009
2,2-Dimethylhexane	I8	0.0005	0.0031	0.000	0.000
1,1,3-Trimethylcyclopentane	N7	0.0002	0.0012	0.000	0.000
Ethylcyclopentane	N7	0.0006	0.0032	0.000	0.000
2,5-Dimethylhexane	I8	0.0004	0.0025	0.000	0.000
2,2,3-Trimethylpentane	I8	0.0003	0.0018	0.000	0.000
2,4-Dimethylhexane	I8	0.0001	0.0006	0.000	0.000
1c,2t,4-Trimethylcyclopentane	N8	0.0003	0.0018	0.000	0.000
3,3-Dimethylhexane	I8	0.0001	0.0006	0.000	0.000
Toluene	A7	0.0007	0.0035	0.000	0.000
2,3-Dimethylhexane	I8	0.0002	0.0012	0.000	0.000
2-Methylheptane	I8	0.0013	0.0081	0.001	0.001
4-Methylheptane	I8	0.0004	0.0025	0.000	0.000
3-Methyl-3-ethylpentane	I8	0.0001	0.0006	0.000	0.000
3-Methylheptane	I8	0.0008	0.0049	0.000	0.000
1c,2t,3-Trimethylcyclopentane	N8	0.0012	0.0073	0.001	0.001
3-Ethylhexane	I8	0.0001	0.0006	0.000	0.000
1t,4-Dimethylcyclohexane	N8	0.0005	0.0030	0.000	0.000
1,1-Dimethylcyclohexane	N8	0.0002	0.0012	0.000	0.000
3c-Ethylmethylcyclopentane	N8	0.0001	0.0006	0.000	0.000
2t-Ethylmethylcyclopentane	N8	0.0001	0.0006	0.000	0.000
1t,2-Dimethylcyclohexane	N8	0.0004	0.0024	0.000	0.000
1t,3-Dimethylcyclohexane	N8	0.0003	0.0018	0.000	0.000
UnknownC7s	U7	0.0001	0.0005	0.000	0.000
n-Octane	P8	0.0017	0.0105	0.001	0.001
1c,4-Dimethylcyclohexane	N8	0.0002	0.0012	0.000	0.000
2,2-Dimethylheptane	I9	0.0001	0.0007	0.000	0.000
1,1,4-Trimethylcyclohexane	N9	0.0002	0.0014	0.000	0.000
2,2,3-Trimethylhexane	I9	0.0001	0.0007	0.000	0.000
Ethylcyclohexane	N8	0.0002	0.0012	0.000	0.000
n-Propylcyclopentane	N8	0.0001	0.0006	0.000	0.000
2,5-Dimethylheptane	I9	0.0001	0.0007	0.000	0.000
Ethylbenzene	I8	0.0001	0.0006	0.000	0.000
1,3-Dimethylbenzene (m-Xylene)	A8	0.0001	0.0006	0.000	0.000
4-Methyloctane	I9	0.0001	0.0007	0.000	0.000
2-Methyloctane	I9	0.0001	0.0007	0.000	0.000
1c,2t,4c-Trimethylcyclohexane	I9	0.0001	0.0007	0.000	0.000
n-Nonane	P9	0.0002	0.0014	0.000	0.000
UnknownC10s	U10	0.0001	0.0008	0.000	0.000
TOTAL		100.0000	100.0000	2.9526	2.9684

			<u>CALCULATED VALUES**</u>		
<u>BTEX COMPONENTS</u>	<u>MOLE%</u>	<u>WT%</u>	<u>BTU @</u>	<u>14.65</u>	<u>14.73</u>
BENZENE	0.0019	0.0080	LHV NET DRY REAL :	1023.0 /scf	1028.6 /scf
TOLUENE	0.0007	0.0035	NET WET REAL :	1005.1 /scf	1010.7 /scf
ETHYLBENZENE	0.0001	0.0006	HHV GROSS DRY REAL :	1131.9 /scf	1138.0 /scf
XYLENES	0.0001	0.0006	GROSS WET REAL :	1112.1 /scf	1118.2 /scf
TOTAL BTEX	0.0028	0.0127	NET HEATING VALUE (60 °F ideal reaction):		21093.1 Btu/lbm
			GROSS HEATING VALUE (60°F ideal reaction):		23331.9 Btu/lbm
			RELATIVE DENSITY (AIR=1):		0.6359
			DENSITY		0.04855 lb/scf
			COMPRESSIBILITY FACTOR :		0.9973
			REGULAR WOBBE INDEX		1420.1

*(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>4556.2 /scf</u>	Relative Density - SG (Air=1)	<u>3.109</u>	C6+ factors
Gross Dry Ideal BTU	<u>4909.4 /scf</u>	Z Compressibility Factor	<u>0.99005</u>	<u>0.98954</u>
Net Dry Ideal BTU	<u>19324.9 /lb</u>	Density Factor	<u>237.277 lbm/1000 ft3</u>	
Gross Dry Ideal BTU	<u>20822.1 /lb</u>	Molar Mass or MW	<u>90.04 g/mol</u>	
		Volume Liquid Ideal gas	<u>0.11 scf/gal</u>	<u>24.3</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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