

EXTENDED NATURAL GAS ANALYSIS (*DHA)

MAIN PAGE

PRIMARY DB KEY:	05-103-10814	NAME/DESCRIP :	PCU 297-15A6
LEASE #:	COC-47666A		SURFACE CASING
FIELD/AREA:	PICEANCE CREEK		
PROJECT NO. :	202601123	ANALYSIS NO. :	03
COMPANY NAME :	QB ENERGY OPERATING, LLC	ANALYSIS DATE:	FEBRUARY 08, 2026 12:51
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. :	324 psig	PROBE :	NO
FLOW PRES. :	psig	CYLINDER NO. :	ECA-767
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:			

<u>COMPONENT</u>	<u>MOLE %</u>	<u>MASS %</u>	<u>GPM @ 14.65</u>	<u>GPM @ 14.73</u>
ALCOHOLS	0.0014	0.0028	0.0000	0.0000
HELIUM	0.00	0.00	---	---
HYDROGEN	0.02	0.00	---	---
OXYGEN/ARGON	0.00	0.00	---	---
NITROGEN	0.13	0.20	---	---
CARBON DIOXIDE	0.03	0.07	---	---
METHANE	92.6561	83.2526	---	---
ETHANE	3.9358	6.6283	1.0493	1.0551
PROPANE	1.7415	4.3010	0.4787	0.4813
I-BUTANE	0.3614	1.1764	0.1179	0.1186
N-BUTANE	0.5411	1.7614	0.1699	0.1708
I-PENTANE	0.1873	0.7558	0.0680	0.0683
N-PENTANE	0.1549	0.6259	0.0560	0.0563
HEXANES PLUS	0.2405	1.2258	0.0950	0.0952
TOTALS	100.00000	100.00000	2.0348	2.0456

<u>BTEX COMPONENTS</u>	<u>MOLE%</u>	<u>WT%</u>
BENZENE	0.0041	0.0179
TOLUENE	0.0020	0.0103
ETHYLBENZENE	0.0001	0.0006
XYLENES	0.0002	0.0012
TOTAL BTEX	0.0064	0.0300

	<u>BTU @ 14.65</u>	<u>14.73</u>
LHV NET DRY REAL :	996.1 /scf	1001.5 /scf
NET WET REAL :	978.7 /scf	984.1 /scf
HHV GROSS DRY REAL :	1103.2 /scf	1109.2 /scf
GROSS WET REAL :	1083.9 /scf	1089.9 /scf
NET HEATING VALUE (60 °F ideal reaction):		21202.4 Btu/lbm
GROSS HEATING VALUE (60°F ideal reaction):		23473.8 Btu/lbm
RELATIVE DENSITY (AIR=1):		0.6162
DENSITY		0.04705 lbm/scf
COMPRESSIBILITY FACTOR :		0.9975
REGULAR WOBBE INDEX		1406.3

*(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. :	03
COMPANY NAME :	QB ENERGY OPERATING, LLC	ANALYSIS DATE:	FEBRUARY 08, 2026 12:51
ACCOUNT NO. :		SAMPLE DATE :	JANUARY 22, 2026
PRODUCER :	QB ENERGY OPERATING, LLC	CYLINDER NO. :	ECA-767
LEASE NO. :	COC-47666A	SAMPLED BY :	MIKE KELLEY
NAME/DESCRIP :	PCU 297-15A6		
	SURFACE CASING		

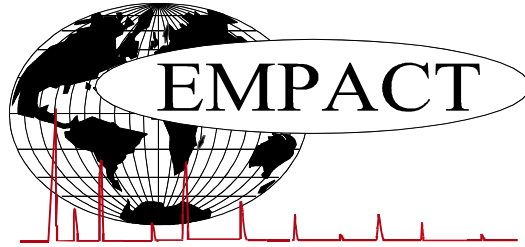
FIELD DATA		SAMPLE TEMP. :	41
SAMPLE PRES. :	324	AMBIENT TEMP.:	
H2S BY STAIN TUBE:	—		
COMMENTS :	<i>SPOT</i>		<i>NO PROBE</i>

<u>Componet</u>	<u>Mole %</u>	<u>Wt %</u>
Helium	0.00	0.00
Hydrogen	0.02	0.00
Carbon Dioxide	0.03	0.07
Nitrogen	0.13	0.20
Methane	92.6561	83.2526
Ethane	3.9358	6.6283
Propane	1.7415	4.3010
Isobutane	0.3614	1.1764
n-Butane	0.5411	1.7614
Isopentane	0.1776	0.7177
n-Pentane	0.1549	0.6259
Cyclopentane	0.0097	0.0381
n-Hexane	0.0460	0.2220
Cyclohexane	0.0171	0.0806
Other Hexanes	0.0924	0.4436
Heptanes	0.0443	0.2472
Methylcyclohexane	0.0192	0.1056
2,2,4 Trimethylpentane	0.0001	0.0006
Benzene	0.0041	0.0179
Toluene	0.0020	0.0103
Ethylbenzene	0.0001	0.0006
Xylenes	0.0002	0.0012
C8+ Heavies	0.0150	0.0962
<u>Subtotal</u>	<u>99.99860</u>	<u>99.99720</u>
Oxygen/Argon	0.00	0.00
Alcohols	0.0014	0.0028
<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 @	14.65	Sample	Fraction	Fraction	Fraction
LHV Net Dry Real:	996.1	4628.9	5744.6	#DIV/0!	Btu/scf
Net Wet Real:	978.7	4548.0	5644.2	#DIV/0!	Btu/scf
HHV Gross Dry Real:	1103.2	4985.8	6188.9	#DIV/0!	Btu/scf
Gross Wet Real:	1083.9	4898.6	6080.7	#DIV/0!	Btu/scf
Other Calculated Values					
Regualr Wobbe Index*	1406.3	2794.7	3109.4	#DIV/0!	Btu/scf
Net Heating Value (60 °F ideal reaction):	21202.4	19361.8	19870.7	#DIV/0!	Btu/lbm
Gross Heating Value (60°F ideal reaction):	23473.8	20853.3	21407.5	#DIV/0!	Btu/lbm
Molar Mass (MW):	17.85645	91.053	114.763	#DIV/0!	g/mol
Relative Density (AIR=1):	0.6162	3.1432	3.9624	#DIV/0!	SG
Density:	0.04705	0.23993	0.30241	#DIV/0!	lbm/scf
Compressibility Factor:	0.9975	0.9907	0.9970	#DIV/0!	Z
Liquid Volume real gas @:	14.65	17.6695	0.0947	0.004	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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 LEASE #: **COC-47666A** SURFACE CASING
 FIELD/AREA: **PICEANCE CREEK**

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

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 SAMPLE PRES. : **324** psig PROBE : **NO**
 FLOW PRES. : psig CYLINDER NO. : **ECA-767**
 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	---	0.02	0.00	---	---
Nitrogen	---	0.13	0.20	---	---
Carbon Dioxide	---	0.03	0.07	---	---
Methane	P1	92.6561	83.2526	---	---
Ethane	P2	3.9358	6.6283	1.049	1.055
Propane	P3	1.7415	4.3010	0.479	0.481
i-Butane	I4	0.3614	1.1764	0.118	0.119
Methanol	X1	0.0012	0.0021	0.000	0.000
n-Butane	P4	0.5411	1.7614	0.170	0.171
2,2-Dimethylpropane	I5	0.0028	0.0113	0.001	0.001
i-Pentane	I5	0.1748	0.7064	0.064	0.064
Acetone	X3	0.0002	0.0007	0.000	0.000
n-Pentane	P5	0.1549	0.6259	0.056	0.056
2,2-Dimethylbutane	I6	0.0028	0.0135	0.001	0.001
Cyclopentane	N5	0.0097	0.0381	0.003	0.003
2,3-Dimethylbutane	I6	0.0066	0.0319	0.003	0.003
2-Methylpentane	I6	0.0409	0.1974	0.017	0.017
3-Methylpentane	I6	0.0208	0.1004	0.008	0.008
n-Hexane	P6	0.0460	0.2220	0.019	0.019
2,2-Dimethylpentane	I7	0.0007	0.0039	0.000	0.000
Methylcyclopentane	N6	0.0213	0.1004	0.008	0.008
2,4-Dimethylpentane	I7	0.0014	0.0078	0.001	0.001
2,2,3-Trimethylbutane	I7	0.0002	0.0011	0.000	0.000
Benzene	A6	0.0041	0.0179	0.001	0.001
3,3-Dimethylpentane	I7	0.0003	0.0017	0.000	0.000
Cyclohexane	N6	0.0171	0.0806	0.006	0.006
2-Methylhexane	I7	0.0071	0.0398	0.003	0.003

2,3-Dimethylpentane	I7	0.0025	0.0141	0.001	0.001
1,1-Dimethylcyclopentane	N7	0.0013	0.0072	0.001	0.001
3-Methylhexane	I7	0.0066	0.0370	0.003	0.003
1c,3-Dimethylcyclopentane	N7	0.0028	0.0154	0.001	0.001
1t,3-Dimethylcyclopentane	N7	0.0025	0.0137	0.001	0.001
3-Ethylpentane	I7	0.0004	0.0022	0.000	0.000
1t,2-Dimethylcyclopentane	N7	0.0041	0.0226	0.002	0.002
2,2,4-Trimethylpentane	I8	0.0001	0.0006	0.000	0.000
n-Heptane	P7	0.0129	0.0724	0.006	0.006
1c,2-Dimethylcyclopentane	N7	0.0004	0.0022	0.000	0.000
Methylcyclohexane	N7	0.0192	0.1056	0.008	0.008
2,2-Dimethylhexane	I8	0.0007	0.0045	0.000	0.000
1,1,3-Trimethylcyclopentane	N7	0.0002	0.0012	0.000	0.000
Ethylcyclopentane	N7	0.0009	0.0049	0.000	0.000
2,5-Dimethylhexane	I8	0.0004	0.0026	0.000	0.000
2,2,3-Trimethylpentane	I8	0.0004	0.0026	0.000	0.000
1c,2t,4-Trimethylcyclopentane	N8	0.0007	0.0044	0.000	0.000
3,3-Dimethylhexane	I8	0.0001	0.0006	0.000	0.000
Toluene	A7	0.0020	0.0103	0.001	0.001
2,3-Dimethylhexane	I8	0.0004	0.0026	0.000	0.000
2-Methyl-3-ethylpentane	I8	0.0001	0.0006	0.000	0.000
2-Methylheptane	I8	0.0019	0.0122	0.001	0.001
4-Methylheptane	I8	0.0005	0.0032	0.000	0.000
3-Methyl-3-ethylpentane	I8	0.0001	0.0006	0.000	0.000
3,4-Dimethylhexane	I8	0.0001	0.0006	0.000	0.000
3-Methylheptane	I8	0.0010	0.0064	0.001	0.001
1c,2t,3-Trimethylcyclopentane	N8	0.0016	0.0101	0.001	0.001
3-Ethylhexane	I8	0.0002	0.0013	0.000	0.000
1t,4-Dimethylcyclohexane	N8	0.0007	0.0044	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
3t-Ethylmethylcyclopentane	N8	0.0001	0.0006	0.000	0.000
2t-Ethylmethylcyclopentane	N8	0.0002	0.0012	0.000	0.000
1,1-Methylethylcyclopentane	N8	0.0001	0.0006	0.000	0.000
1t,2-Dimethylcyclohexane	N8	0.0006	0.0038	0.000	0.000
1t,3-Dimethylcyclohexane	N8	0.0001	0.0006	0.000	0.000
n-Octane	P8	0.0023	0.0147	0.001	0.001
1c,4-Dimethylcyclohexane	N8	0.0003	0.0019	0.000	0.000
2,2-Dimethylheptane	I9	0.0001	0.0007	0.000	0.000
1,1,4-Trimethylcyclohexane	N9	0.0004	0.0028	0.000	0.000
2,2,3-Trimethylhexane	I9	0.0001	0.0007	0.000	0.000
Ethylcyclohexane	N8	0.0004	0.0025	0.000	0.000
n-Propylcyclopentane	N8	0.0001	0.0006	0.000	0.000
1c,3c,5-Trimethylcyclohexane	N9	0.0001	0.0007	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	0.0002	0.0012	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
i-Butylcyclopentane	N9	0.0001	0.0007	0.000	0.000
n-Nonane	P9	0.0003	0.0021	0.000	0.000
UnknownC9s	U9	0.0001	0.0007	0.000	0.000
TOTAL		100.00000	100.00000	2.0348	2.0456

BTEX COMPONENTS	MOLE%	WT%
BENZENE	0.0041	0.0179
TOLUENE	0.0020	0.0103
ETHYLBENZENE	0.0001	0.0006
XYLENES	0.0002	0.0012
TOTAL BTEX	0.0064	0.0300

*(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 :	996.1 /scf	1001.5 /scf
NET WET REAL :	978.7 /scf	984.1 /scf
HHV GROSS DRY REAL :	1103.2 /scf	1109.2 /scf
GROSS WET REAL :	1083.9 /scf	1089.9 /scf
NET HEATING VALUE (60 °F ideal reaction):		21202.4 Btu/lbm
GROSS HEATING VALUE (60°F ideal reaction):		23473.8 Btu/lbm
RELATIVE DENSITY (AIR=1):		0.6162
DENSITY		0.04705 lb/scf
COMPRESSIBILITY FACTOR :		0.9975
REGULAR WOBBE INDEX		1406.3

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

Net Dry Ideal BTU	<u>4600</u> /scf	Relative Density - SG (Air=1)	<u>3.1432</u>	C6+ factors
Gross Dry Ideal BTU	<u>4954.7</u> /scf	Z Compressibility Factor	<u>0.99065</u>	<u>0.99017</u>
Net Dry Ideal BTU	<u>19361.8</u> /lb	Density Factor	<u>239.932</u> lbm/1000 ft3	
Gross Dry Ideal BTU	<u>20853.3</u> /lb	Molar Mass or MW	<u>91.053</u> g/mol	
		Volume Liquid Ideal gas	<u>0.095</u> scf/gal	<u>24.1</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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