EXTENDED NATURAL GAS ANALYSIS (*DHA)

MAIN PAGE

PRIMARY DB KEY:	**05-045-11736**	NAME/DESCRIP :	**CHEVRON 8E-5D**
LEASE #:	**05-045-11736**		**PRODUCTION CASING**
FIELD/AREA:	**GRAND VALLEY**		
PROJECT NO. :	**202601124**	ANALYSIS NO. :	**01**
COMPANY NAME :	**QB ENERGY OPERATING, LLC**	ANALYSIS DATE:	FEBRUARY 08, 2026 14:48
OFFICE / BRANCH:	PARACHUTE, CO	SAMPLE DATE :	JANUARY 23, 2026
CUSTOMER REF:		TO:	
PRODUCER :	QB ENERGY OPERATING, LLC	EFFECTIVE DATE:	

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

SAMPLE CYCLE:		SAMPLE TYPE:	
SAMPLE PRES. :	104 psig	PROBE :	
FLOW PRES. :	psig	CYLINDER NO. :	ECA-812
LAB PRES:	psig	SAMPLED BY :	NICK CROY
SAMPLE TEMP. :	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
ALCOHOLS	0.0009	0.0017	0.0000	0.0000
HELIUM	0.00	0.00	---	---
HYDROGEN	0.00	0.00	---	---
OXYGEN/ARGON	0.01	0.02	---	---
NITROGEN	0.08	0.12	---	---
CARBON DIOXIDE	4.48	10.41	---	---
METHANE	88.1166	74.6387	---	---
ETHANE	5.1230	8.1335	1.3661	1.3736
PROPANE	1.1311	2.6335	0.3108	0.3125
I-BUTANE	0.3111	0.9547	0.1019	0.1025
N-BUTANE	0.2038	0.6254	0.0640	0.0643
I-PENTANE	0.1368	0.5208	0.0500	0.0502
N-PENTANE	0.0706	0.2690	0.0260	0.0261
HEXANES PLUS	0.3361	1.6727	0.1310	0.1313
TOTALS	100.00000	100.00000	2.0498	2.0605

BTEX COMPONENTS	MOLE%	WT%
BENZENE	0.0176	0.0726
TOLUENE	0.0217	0.1055
ETHYLBENZENE	0.0010	0.0056
XYLENES	0.0086	0.0482
TOTAL BTEX	0.0489	0.2319

**(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 :	947.8	/scf	953.0	/scf
	NET WET REAL :	931.2	/scf	936.4	/scf
HHV	GROSS DRY REAL :	1050.3	/scf	1056.1	/scf
	GROSS WET REAL :	1031.9	/scf	1037.7	/scf
	NET HEATING VALUE (60 °F ideal reaction):			19025.7	Btu/lbm
	GROSS HEATING VALUE (60°F ideal reaction):			21064.9	Btu/lbm
	RELATIVE DENSITY (AIR=1):			0.6532	
	DENSITY			0.04990	lbm/scf
	COMPRESSIBILITY FACTOR :			0.9975	
	REGULAR WOBBE INDEX			1300.4	

EMPACT

EXTENDED NATURAL GAS ANALYSIS (*DHA)

GLYCALC INFORMATION

PROJECT NO. :	202601124	ANALYSIS NO. :	01
COMPANY NAME :	QB ENERGY OPERATING, LLC	ANALYSIS DATE:	FEBRUARY 08, 2026 14:48
ACCOUNT NO. :		SAMPLE DATE :	JANUARY 23, 2026
PRODUCER :	QB ENERGY OPERATING, LLC	CYLINDER NO. :	ECA-812
LEASE NO. :	05-045-11736	SAMPLED BY :	NICK CROY
NAME/DESCRIP :	CHEVRON 8E-5D PRODUCTION CASING		
FIELD DATA		SAMPLE TEMP. :	
SAMPLE PRES. :	104	AMBIENT TEMP.:	
H2S BY STAIN TUBE:	_ *ppm mol*		
COMMENTS :			

Componet	Mole %	Wt %
Helium	0.00	0.00
Hydrogen	0.00	0.00
Carbon Dioxide	4.48	10.41
Nitrogen	0.08	0.12
Methane	88.1166	74.6387
Ethane	5.1230	8.1335
Propane	1.1311	2.6335
Isobutane	0.3111	0.9547
n-Butane	0.2038	0.6254
Isopentane	0.1330	0.5067
n-Pentane	0.0706	0.2690
Cyclopentane	0.0038	0.0141
n-Hexane	0.0355	0.1615
Cyclohexane	0.0159	0.0706
Other Hexanes	0.0989	0.4482
Heptanes	0.0619	0.3261
Methylcyclohexane	0.0303	0.1571
2,2,4 Trimethylpentane	0.0006	0.0036
Benzene	0.0176	0.0726
Toluene	0.0217	0.1055
Ethylbenzene	0.0010	0.0056
Xylenes	0.0086	0.0482
C8+ Heavies	0.0441	0.2737
Subtotal	99.98910	99.97830
Oxygen/Argon	0.01	0.02
Alcohols	0.0009	0.0017
Total	100.00000	100.00000

Calculated Values BTU @ **14.65**		**Total Sample**	**C6+ Fraction**	**C8+ Fraction**	**C10+ Fraction**	
LHV	Net Dry Real:	947.8	4731.7	5730.2	7764.0	**Btu/scf**
	Net Wet Real:	931.2	4649.0	5630.0	7628.3	**Btu/scf**
HHV	Gross Dry Real:	1050.3	5081.3	6152.2	8464.9	**Btu/scf**
	Gross Wet Real:	1031.9	4992.5	6044.7	8316.9	**Btu/scf**
Other Calculated Values						
Regualr Wobbe Index*		1300.4	2803.9	3083.6	3644.4	**Btu/scf**
Net Heating Value (60 °F ideal reaction):		19025.7	19147.5	19399.4	18912.7	**Btu/lbm**
Gross Heating Value (60°F ideal reaction):		21064.9	20559.7	20831.3	20611.1	**Btu/lbm**
Molar Mass (MW):		18.9386	94.27	115.46	157.162	**g/mol**
Relative Density (AIR=1):		0.6532	3.2550	3.9865	5.4264	**SG**
Density:		0.04990	0.24842	0.30426	0.41414	**lbm/scf**
Compressiblity Factor:		0.9975	0.9924	0.9976	0.9998	**Z**
Liquid Volume real gas @:	**14.65**	17.6685	0.1306	0.0209	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.

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EXTENDED NATURAL GAS ANALYSIS (*DHA)

DHA COMPONENT LIST

PRIMARY DB KEY:	**05-045-11736**	NAME/DESCRIP :	**CHEVRON 8E-5D**
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PRODUCER :	QB ENERGY OPERATING, LLC	EFFECTIVE DATE:	
FIELD DATA			
SAMPLE CYCLE:		SAMPLE TYPE:	
SAMPLE PRES. :	104 psig	PROBE :	
FLOW PRES. :	psig	CYLINDER NO. :	ECA-812
LAB PRES:	psig	SAMPLED BY :	NICK CROY
SAMPLE TEMP. :	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**
Oxygen/Argon	---	0.01	0.02	---	---
Nitrogen	---	0.08	0.12	---	---
Carbon Dioxide	---	4.48	10.41	---	---
Methane	P1	88.1166	74.6387	---	---
Ethane	P2	5.1230	8.1335	1.366	1.374
Propane	P3	1.1311	2.6335	0.311	0.313
i-Butane	I4	0.3111	0.9547	0.102	0.103
Methanol	X1	0.0008	0.0014	0.000	0.000
n-Butane	P4	0.2038	0.6254	0.064	0.064
2,2-Dimethylpropane	I5	0.0048	0.0183	0.002	0.002
i-Pentane	I5	0.1282	0.4884	0.047	0.047
Acetone	X3	0.0001	0.0003	0.000	0.000
n-Pentane	P5	0.0706	0.2690	0.026	0.026
2,2-Dimethylbutane	I6	0.0078	0.0355	0.003	0.003
Cyclopentane	N5	0.0038	0.0141	0.001	0.001
2,3-Dimethylbutane	I6	0.0112	0.0509	0.005	0.005
2-Methylpentane	I6	0.0398	0.1811	0.016	0.016
3-Methylpentane	I6	0.0226	0.1029	0.009	0.009
n-Hexane	P6	0.0355	0.1615	0.015	0.015
2,2-Dimethylpentane	I7	0.0021	0.0111	0.001	0.001
Methylcyclopentane	N6	0.0175	0.0778	0.006	0.006
2,4-Dimethylpentane	I7	0.0030	0.0159	0.001	0.001
2,2,3-Trimethylbutane	I7	0.0009	0.0047	0.000	0.000
Benzene	A6	0.0176	0.0726	0.005	0.005
3,3-Dimethylpentane	I7	0.0011	0.0058	0.000	0.000
Cyclohexane	N6	0.0159	0.0706	0.005	0.005
2-Methylhexane	I7	0.0121	0.0640	0.006	0.006

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2,3-Dimethylpentane	I7	0.0029	0.0154	0.001	0.001
1,1-Dimethylcyclopentane	N7	0.0022	0.0114	0.001	0.001
3-Methylhexane	I7	0.0106	0.0561	0.005	0.005
1c,3-Dimethylcyclopentane	N7	0.0028	0.0145	0.001	0.001
1t,3-Dimethylcyclopentane	N7	0.0025	0.0129	0.001	0.001
3-Ethylpentane	I7	0.0005	0.0026	0.000	0.000
1t,2-Dimethylcyclopentane	N7	0.0033	0.0171	0.002	0.002
2,2,4-Trimethylpentane	I8	0.0006	0.0036	0.000	0.000
n-Heptane	P7	0.0164	0.0867	0.008	0.008
1c,2-Dimethylcyclopentane	N7	0.0004	0.0021	0.000	0.000
Methylcyclohexane	N7	0.0303	0.1571	0.012	0.012
2,2-Dimethylhexane	I8	0.0010	0.0060	0.000	0.000
1,1,3-Trimethylcyclopentane	N7	0.0002	0.0012	0.000	0.000
Ethylcyclopentane	N7	0.0009	0.0046	0.000	0.000
2,5-Dimethylhexane	I8	0.0012	0.0072	0.001	0.001
2,2,3-Trimethylpentane	I8	0.0011	0.0066	0.001	0.001
2,4-Dimethylhexane	I8	0.0001	0.0006	0.000	0.000
1c,2t,4-Trimethylcyclopentane	N8	0.0005	0.0030	0.000	0.000
3,3-Dimethylhexane	I8	0.0004	0.0024	0.000	0.000
2,3,3-Trimethylpentane	I8	0.0001	0.0006	0.000	0.000
Toluene	A7	0.0217	0.1055	0.007	0.007
2,3-Dimethylhexane	I8	0.0008	0.0048	0.000	0.000
2-Methyl-3-ethylpentane	I8	0.0001	0.0006	0.000	0.000
2-Methylheptane	I8	0.0042	0.0253	0.002	0.002
4-Methylheptane	I8	0.0014	0.0084	0.001	0.001
3-Methyl-3-ethylpentane	I8	0.0002	0.0012	0.000	0.000
3,4-Dimethylhexane	I8	0.0002	0.0012	0.000	0.000
3-Methylheptane	I8	0.0036	0.0217	0.002	0.002
1c,2t,3-Trimethylcyclopentane	N8	0.0042	0.0249	0.002	0.002
3-Ethylhexane	I8	0.0002	0.0012	0.000	0.000
1t,4-Dimethylcyclohexane	N8	0.0018	0.0107	0.001	0.001
1,1-Dimethylcyclohexane	N8	0.0007	0.0042	0.000	0.000
2,2,5-Trimethylhexane	I9	0.0001	0.0007	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	0.0001	0.0006	0.000	0.000
2,2,4-Trimethylhexane	I9	0.0001	0.0007	0.000	0.000
1t,2-Dimethylcyclohexane	N8	0.0012	0.0071	0.001	0.001
1t,3-Dimethylcyclohexane	N8	0.0003	0.0018	0.000	0.000
n-Octane	P8	0.0073	0.0440	0.004	0.004
1c,4-Dimethylcyclohexane	N8	0.0009	0.0053	0.000	0.000
i-Propylcyclopentane	I8	0.0001	0.0006	0.000	0.000
2,3,5-Trimethylhexane	I9	0.0002	0.0014	0.000	0.000
2,2-Dimethylheptane	I9	0.0004	0.0027	0.000	0.000
1,1,4-Trimethylcyclohexane	N9	0.0009	0.0060	0.000	0.000
2,2,3-Trimethylhexane	I9	0.0003	0.0020	0.000	0.000
2,4-Dimethylheptane	I9	0.0001	0.0007	0.000	0.000
Ethylcyclohexane	N8	0.0008	0.0047	0.000	0.000
n-Propylcyclopentane	N8	0.0003	0.0018	0.000	0.000
1c,3c,5-Trimethylcyclohexane	N9	0.0001	0.0007	0.000	0.000
2,5-Dimethylheptane	I9	0.0010	0.0068	0.001	0.001
3,5-Dimethylheptane	I9	0.0002	0.0014	0.000	0.000
2,6-Dimethylheptane	I9	0.0001	0.0007	0.000	0.000
1,1,3-Trimethylcyclohexane	N9	0.0001	0.0007	0.000	0.000
Ethylbenzene	I8	0.0010	0.0056	0.000	0.000
2,3-Dimethylheptane	I9	0.0001	0.0007	0.000	0.000
1,3-Dimethylbenzene (m-Xylene)	A8	0.0059	0.0330	0.002	0.002
1,4-Dimethylbenzene (p-Xylene)	A8	0.0019	0.0107	0.001	0.001
3,4-Dimethylheptane	I9	0.0001	0.0007	0.000	0.000
3,4-Dimethylheptane (2)	I9	0.0001	0.0007	0.000	0.000

4-Ethylheptane	I9	0.0001	0.0007	0.000	0.000
4-Methyloctane	I9	0.0006	0.0041	0.000	0.000
2-Methyloctane	I9	0.0009	0.0061	0.001	0.001
3-Methyloctane	I9	0.0001	0.0007	0.000	0.000
1c,2t,4c-Trimethylcyclohexane	I9	0.0008	0.0053	0.000	0.000
1,2-Dimethylbenzene (o-Xylene)	A8	0.0008	0.0045	0.000	0.000
i-Butylcyclopentane	N9	0.0004	0.0026	0.000	0.000
n-Nonane	P9	0.0022	0.0149	0.001	0.001
1,1-Methylethylcyclohexane	N9	0.0002	0.0013	0.000	0.000
2,4-Dimethyloctane	I10	0.0001	0.0007	0.000	0.000
n-Butylcyclopentane	N9	0.0001	0.0007	0.000	0.000
n-Propylbenzene	A9	0.0001	0.0006	0.000	0.000
1,3-Methylethylbenzene	A9	0.0002	0.0013	0.000	0.000
1,4-Methylethylbenzene	A9	0.0001	0.0006	0.000	0.000
1,3,5-Trimethylbenzene	A9	0.0001	0.0006	0.000	0.000
UnknownC9s	U9	0.0006	0.0041	0.000	0.000
UnknownC10s	U10	0.0003	0.0023	0.000	0.000
1,3-Methyl-n-butylbenzene	A11	0.0001	0.0008	0.000	0.000
n-Tridecane	P13	0.0001	0.0009	0.000	0.000
n-Tetradecane	P14	0.0001	0.0011	0.000	0.000
TOTAL		100.00000	100.00000	2.0498	2.0605

BTEX COMPONENTS	MOLE%	WT%
BENZENE	0.0176	0.0726
TOLUENE	0.0217	0.1055
ETHYLBENZENE	0.0010	0.0056
XYLENES	0.0086	0.0482
TOTAL BTEX	0.0489	0.2319

**(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 :	947.8	/scf	953.0	/scf
	NET WET REAL :	931.2	/scf	936.4	/scf
HHV	GROSS DRY REAL :	1050.3	/scf	1056.1	/scf
	GROSS WET REAL :	1031.9	/scf	1037.7	/scf
	NET HEATING VALUE (60 °F ideal reaction):			19025.7	Btu/lbm
	GROSS HEATING VALUE (60°F ideal reaction):			21064.9	Btu/lbm
	RELATIVE DENSITY (AIR=1):			0.6532	
	DENSITY			0.04990	lb/scf
	COMPRESSIBILITY FACTOR :			0.9975	
	REGULAR WOBBE INDEX			1300.4	

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

Net Dry Ideal BTU	4710.7 /scf	Relative Density - SG (Air=1)	3.255		***C6+factors***
Gross Dry Ideal BTU	5058.7 /scf	**Z** Compressiblity Factor	0.99244		0.99168
Net Dry Ideal BTU	19147.5 /lb	Density Factor	248.425	lbm/1000 ft3	
Gross Dry Ideal BTU	20559.7 /lb	Molar Mass or MW	94.27	g/mol	
		Volume Liquid Ideal gas	0.131	scf/gal	24.6

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.