



ISOTOPIC NATURAL GAS ANALYSIS

PRIMARY DB KEY:	05-045-20182	NAME/DESCRIP :	K28W BENJAMIN FEDERAL 33-4B
LEASE #:	05-045-20182		PRODUCTION CASING
FIELD/AREA:	MAMM CREEK		
PROJECT NO. :	202512128	ANALYSIS NO. :	01
COMPANY NAME :	QB ENERGY OPERATING, LLC	ANALYSIS DATE:	JANUARY 12, 2026 00:00
OFFICE / BRANCH:	PARACHUTE, CO	SAMPLE DATE :	DECEMBER 18, 2025
CUSTOMER REF:		TO:	
PRODUCER :	QB ENERGY OPERATING, LLC	EFFECTIVE DATE:	

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

SAMPLE CYCLE:		SAMPLE TYPE:	SPOT
SAMPLE PRES. :	127 psig	PROBE :	
FLOW PRES. :	psig	CYLINDER NO. :	ECA-798
LAB PRES:	psig	SAMPLED BY :	KRIS GIBSON
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:

COMPONENTS	NORM. MOLE%	GPM @ 14.65	d13C ‰ VPDB	dD ‰ VSMOW
HELIUM	0.01	-	-	-
HYDROGEN	0.00	-	-	-
OXYGEN/ARGON	0.01	-	-	-
NITROGEN	0.12	-	-	-
CO2	2.73	-	-3.3	-
METHANE	86.10	-	-38.8	-181
ETHANE	7.00	1.8662	-27.2	-
PROPANE	2.22	0.6097	-24.2	-
ISOBUTANE	0.48	0.1569	-24.7	-
N-BUTANE	0.47	0.1449	-23.6	-
ISOPENTANE	0.24	0.0840	-24.0	-
N-PENTANE	0.16	0.0580	-23.6	-
HEXANES+	0.46	0.2159	-	-
TOTAL	100.00	3.1356		

BTU @ 60 DEG F

	14.65	
GROSS DRY REAL =	1120.5	/scf
GROSS SATURATED REAL =	1100.9	/scf

RELATIVE DENSITY (AIR=1 @14.696 PSIA 60F)	0.6707
GRAVITY (LB/SCF)	0.05119
COMPRESSIBILITY FACTOR :	0.99730

NOTE: REFERENCE GPA 2261(ASTM D1945 & ASME-PTC), 2145, & 2172 CURRENT PUBLICATIONS

Reference: Per GPA 2172-14 sec 9 **The C6+ is derived from the following ratios of C6, C7 & C8+ respectively: 60% 30% 10%**

The NG Composition File #: **202512128-01-A-608**
The Isotopic Data File #: **DIG-042534**

Note: Stable isotope results based on multi-point laboratory calibration

Precision δ¹³C < 0.5 ‰ Precision δD < 5.0 ‰

Values in red represent low peak heights. Interpret with caution.

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