



ISOTOPIC NATURAL GAS ANALYSIS

PRIMARY DB KEY: **05-045-09947** NAME/DESCRIP : **M27NW GMR 28-16D**
 LEASE #: **05-045-09947** PRODUCTION CASING
 FIELD/AREA: **MAMM CREEK**

PROJECT NO. : **202601073** ANALYSIS NO. : **01**
 COMPANY NAME : **QB ENERGY OPERATING, LLC** ANALYSIS DATE: **JANUARY 30, 2026 00:00**
 OFFICE / BRANCH: **PARACHUTE, CO** SAMPLE DATE : **JANUARY 14, 2026 9:48**
 CUSTOMER REF: TO:
 PRODUCER : **QB ENERGY OPERATING, LLC** EFFECTIVE DATE:

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

SAMPLE CYCLE: SAMPLE TYPE:
 SAMPLE PRES. : 342 psig PROBE :
 FLOW PRES. : psig CYLINDER NO. : ECA-749
 LAB PRES: psig SAMPLED BY : ERIC CHARLESWORTH
 SAMPLE TEMP. : 30 °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: *Possible moisture in sample.*

COMPONENTS	NORM. MOLE%	GPM @ 14.65	d13C % VPDB	dD %o VSMOW
HELIUM	0.01	-	-	-
HYDROGEN	10.68	-	-	-
OXYGEN/ARGON	0.00	-	-	-
NITROGEN	0.25	-	-	-
CO2	0.05	-	0.0	-
METHANE	81.77	-	-41.1	-164
ETHANE	5.48	1.4602	-28.3	-
PROPANE	1.25	0.3456	-25.4	-
ISOBUTANE	0.15	0.0489	-	-
N-BUTANE	0.06	0.0190	0.0	-
ISOPENTANE	0.00	0.0000	0.0	-
N-PENTANE	0.00	0.0000	0.0	-
HEXANES+	0.30	0.0819	-	-
TOTAL	100.00	1.9556		

BTU @ 60 DEG F

14.65
 GROSS DRY REAL = 1005.5 /scf
 GROSS SATURATED REAL = 987.9 /scf

RELATIVE DENSITY (AIR=1 @14.696 PSIA 60F) 0.5504
 GRAVITY (LB/SCF) 0.04200
 COMPRESSIBILITY FACTOR : 0.99810

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 #: **202601073-01-A-621**
 The Isotopic Data File #: **DIG-042670**

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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