



## Pre-Plugging Methane Emissions Monitoring Report

*Morgan B Federal 002*

Prepared by TS-Nano, Inc.

For NM Energy, Minerals and Natural Resources Department, Oil Conservation Division

PO# 52100-0000078682

### Well information

ID #: 30-041-10449

Coordinates: 33.68064, -103.5381

Name: Morgan B Federal 002

Surface Location: Roosevelt County



### Measurement notes

Device used: Ventbuster device VB100-0138

Test operator: JR Molina

Gas sample taken from well: 1/21/25 14:00

Ventbuster connected to well: 1/21/25 14:39

Continuous monitoring of well flowrate, pressure, and temperature

Hourly measurement of weather data

Ventbuster disconnected from well: 1/22/25 14:36

Notes: initial wellhead pressure of 2758 kPa (400 psi) was bled off prior to flow measurement.

Gas sample delivered to laboratory: 1/24/25

Laboratory Name/Location: Laboratory Services / Hobbs, NM



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### Measurement data

Wellhead pressure (kPa gage)\*: 2758 kPa

Average flow rate ( $\text{Sm}^3/\text{d}$ ): 0.051

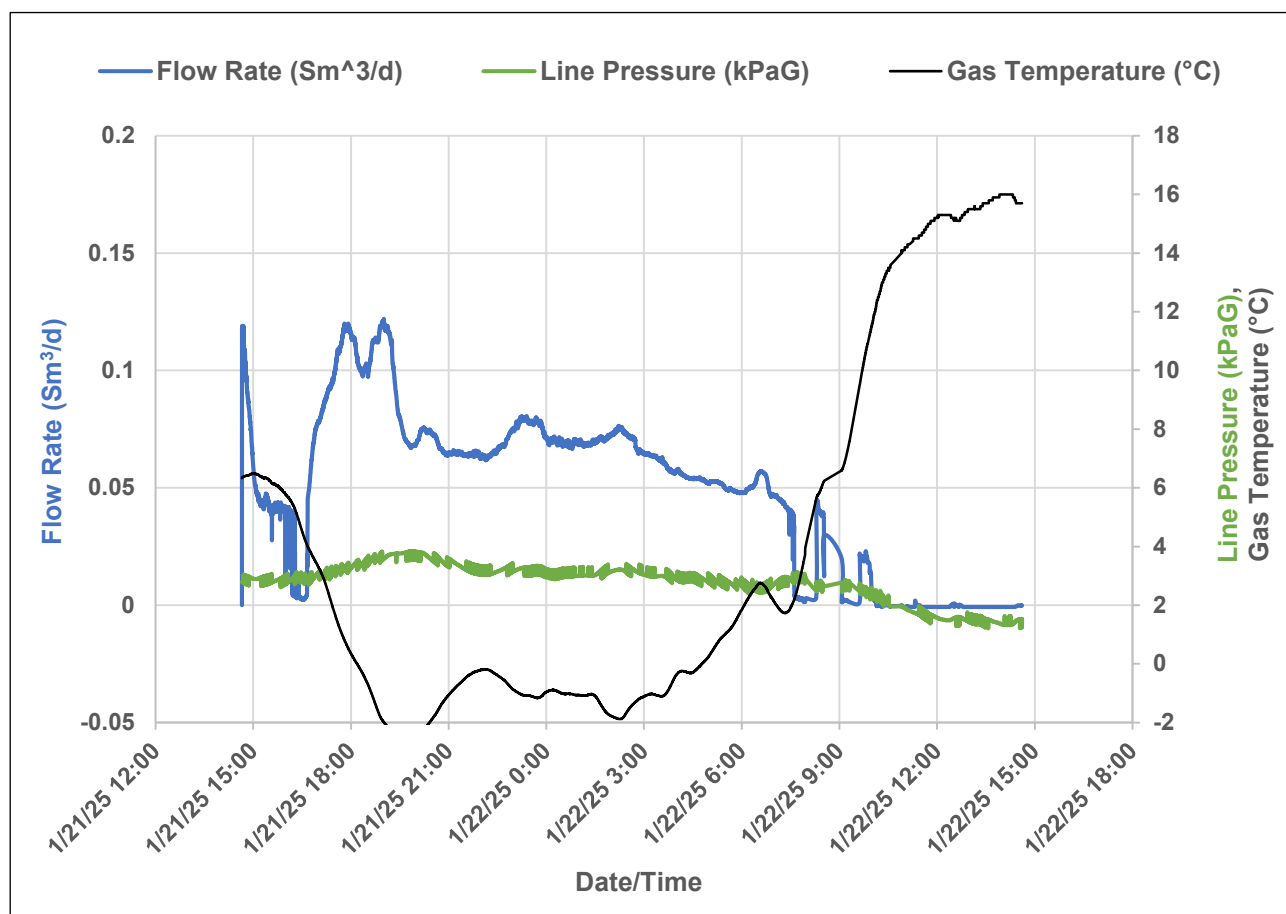
Average methane mass flow rate (g/hr)

using methane % from lab analysis: 0.44

### Methane mass flowrate calculation

Variable	Unit	Value
Pressure (P)	kPaA	Std pressure, 101.3 KPaA
Volumetric flow (V)	Std $\text{m}^3/\text{day}$	Measured from the Unit
% methane	% (methane/gas)	Measured from lab sample
Temperature (T)	Kelvin	Std temperature, 288.13 K
Gas constant (R)	$\text{m}^3 \text{ Pa}/(\text{K mol})$	8.3144626
Molecular weight of methane (Mw)	g/mole	16.04

$$\text{Mass flow of methane } \left( \frac{\text{g}}{\text{hr}} \right) = \frac{\%, \text{ methane}}{100\%} * V * P * \frac{Mw}{R T} * \frac{1000}{24}$$



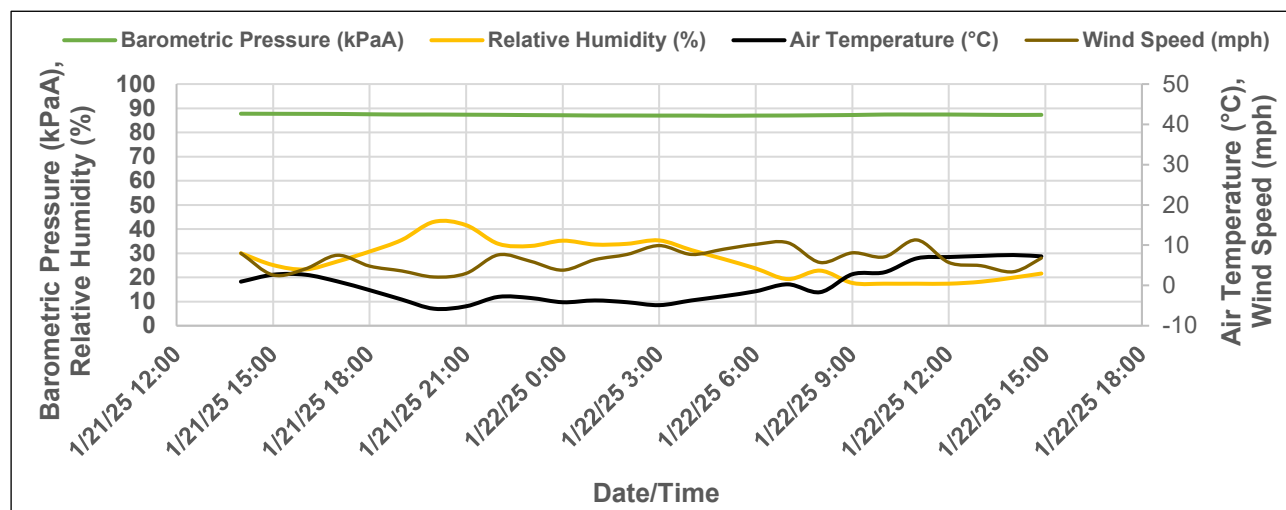
**TS-NANO**

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### Weather data

Precipitation during measurement period (in): 0.000



Date and Time	Air Temperature (°C)	Relative Humidity (%)	Barometric Pressure (kPaA)	Wind Speed (mph)
1/21/2025 14:00	0.9	30.0	87.74	8.0
1/21/2025 15:00	2.7	25.1	87.71	2.6
1/21/2025 16:00	2.7	23.3	87.67	4.1
1/21/2025 17:00	1.0	26.6	87.64	7.5
1/21/2025 18:00	-1.2	30.7	87.50	4.8
1/21/2025 19:00	-3.5	35.5	87.40	3.6
1/21/2025 20:00	-5.8	43.0	87.40	2.1
1/21/2025 21:00	-5.2	41.6	87.33	3.0
1/21/2025 22:00	-2.8	33.9	87.27	7.6
1/21/2025 23:00	-3.1	33.0	87.17	6.0
1/22/2025 0:00	-4.2	35.2	87.10	3.8
1/22/2025 1:00	-3.7	33.6	87.00	6.4
1/22/2025 2:00	-4.2	33.9	87.00	7.7
1/22/2025 3:00	-4.9	35.3	86.96	9.9
1/22/2025 4:00	-3.7	31.3	86.96	7.7
1/22/2025 5:00	-2.7	27.6	86.89	9.0
1/22/2025 6:00	-1.4	23.7	86.96	10.2
1/22/2025 7:00	0.3	19.3	87.00	10.6
1/22/2025 8:00	-1.7	22.8	87.10	5.7
1/22/2025 9:00	2.8	17.7	87.20	8.1
1/22/2025 10:00	3.3	17.4	87.40	7.1
1/22/2025 11:00	6.7	17.4	87.40	11.3
1/22/2025 12:00	7.1	17.4	87.40	5.7



23386G	Morgan B Federal #002	Morgan B Federal #002
Sample Point Code	Sample Point Name	Sample Point Location
Laboratory Services	2025105081	Bag
Source Laboratory	Lab File No	Container Identity
USA	USA	USA
District	Area Name	Field Name
Jan 21, 2025	Jan 1, 2025	Jan 24, 2025 15:29
Date Sampled	Date Effective	Date Received
System Administrator		
Ambient Temp (°F)	Flow Rate (Mcf)	Analyst
Press PSI @ Temp °F Source Conditions		
TS-Nano	NG	
Operator	Lab Source Description	

Component	Normalized Mol %	Un-Normalized Mol %	GPM
H2S (H2S)	0.0000	0	
Nitrogen (N2)	56.6430	56.642	
CO2 (CO2)	3.9380	3.938	
Methane (C1)	30.7460	30.746	
Ethane (C2)	3.5190	3.519	0.9410
Propane (C3)	1.7910	1.791	0.4930
I-Butane (IC4)	0.2450	0.245	0.0800
N-Butane (NC4)	0.6590	0.659	0.2080
I-Pentane (IC5)	0.5180	0.518	0.1890
N-Pentane (NC5)	0.5600	0.56	0.2030
Hexanes Plus (C6+)	1.3810	1.381	0.5990
TOTAL	100.0000	99.9990	2.7130

Method(s): Gas C6+ - GPA 2261, Extended Gas - GPA 2286, Calculations - GPA 2172

## Analyzer Information

Device Type:	Gas Chromatograph	Device Make:	Shimadzu
Device Model:	GC-2014	Last Cal Date:	Sep 9, 2024

## Gross Heating Values (Real, BTU/ft³)

14.696 PSI @ 60.00 Å°F		14.73 PSI @ 60.00 Å°F	
Dry	Saturated	Dry	Saturated
563.3	554.7	564.6	556.0

## Calculated Total Sample Properties

GPA2145-16 *Calculated at Contract Conditions	
Relative Density Real	Relative Density Ideal
0.9323	0.9312
Molecular Weight	
26.9712	

## C6+ Group Properties

Assumed Composition		
C6 - 60.000%	C7 - 30.000%	C8 - 10.000%

## PROTREND STATUS:

Passed By Validator on Jan 29, 2025

## DATA SOURCE:

Imported

## PASSED BY VALIDATOR REASON:

First sample taken @ this point, composition looks reasonable

## VALIDATOR:

Ashley Russell

## VALIDATOR COMMENTS:

56% Nitrogen



575.397.3713 2609 W Marland Hobbs, NM 88240

**BILL TO**

### Analysis Request

[illegible]

Sante Fe Main Office  
Phone: (505) 476-3441

General Information  
Phone: (505) 629-6116

Online Phone Directory  
<https://www.emnrd.nm.gov/ocd/contact-us>

State of New Mexico  
Energy, Minerals and Natural Resources  
Oil Conservation Division  
1220 S. St Francis Dr.  
Santa Fe, NM 87505

DEFINITIONS

Action 426353

DEFINITIONS

Operator:  RIDGEWAY ARIZONA OIL CORP. 575 N. Dairy Ashford Houston, TX 77079	OGRID:  164557
	Action Number:  426353
	Action Type:  [UF-OMA] Pre-Plug Methane Monitoring (UF-OMA-MMA)

DEFINITIONS

The Orphan Well Mitigation Activity (OMA) forms are a subset of the OCD's forms exclusively designed for activities related to State of New Mexico's contracted plugging and reclamation activities. Specifically, these forms are used for orphan wells or associated facilities which are in a "Reclamation Fund Approved" status. This status represents wells or facilities where the OCD has acquired a hearing order allowing the OCD to perform plugging or reclamation on wells and associated facilities that no longer have a viable operator to perform the necessary work. These forms are not to be utilized for any other purpose.

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**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

QUESTIONS

Action 426353

**QUESTIONS**

Operator: RIDGEWAY ARIZONA OIL CORP. 575 N. Dairy Ashford Houston, TX 77079	OGRID: 164557
	Action Number: 426353
	Action Type: [UF-OMA] Pre-Plug Methane Monitoring (UF-OMA-MMA)

**QUESTIONS**

<b>Prerequisites</b>	
[OGRID] Well Operator	[164557] RIDGEWAY ARIZONA OIL CORP.
[API] Well Name and Number	[30-041-10449] MORGAN B FEDERAL #002
Well Status	Active

<b>Monitoring Event Information</b>	
<i>Please answer all the questions in this group.</i>	
Reason For Filing	Pre-Plug Methane Monitoring
Date of monitoring	01/21/2025
Latitude	33.68064
Longitude	-103.53810

<b>Monitoring Event Details</b>	
<i>Please answer all the questions in this group.</i>	
Flow rate in cubic meters per day (m <sup>3</sup> /day)	0.05
Test duration in hours (hr)	24.0
Average flow temperature in degrees Celsius (°C)	3.7
Average gauge flow pressure in kilopascals (kPag)	2.8
Methane concentration in part per million (ppm)	307,460
Methane emission rate in grams per hour (g/hr)	0.44
Testing Method	Steady State

<b>Monitoring Contractor</b>	
<i>Please answer all the questions in this group.</i>	
Name of monitoring contractor	TS-Nano, Inc.