



Pre-Plugging Methane Emissions Monitoring Report

Morgan A Federal 004

Prepared by TS-Nano, Inc.

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

PO# 52100-0000078682

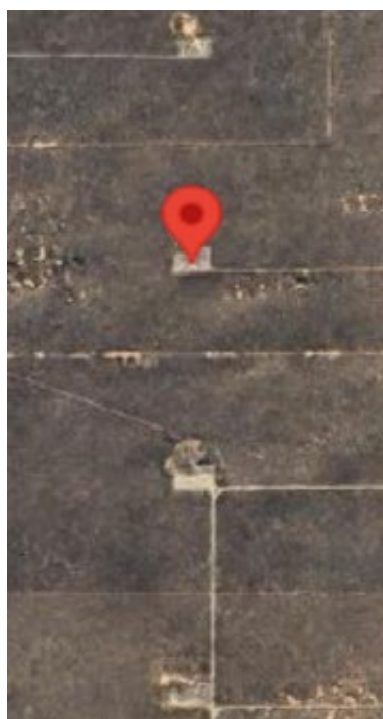
Well information

ID #: 30-041-10415

Name: Morgan A Federal 004

Coordinates: 33.67682, -103.55552

Surface Location: Roosevelt County



Measurement notes

Device used: Ventbuster device VB100-0138

Test operator: JR Molina

Gas sample taken from well: 12/23/24 12:35

Ventbuster connected to well: 12/23/24 13:09

Continuous monitoring of well flowrate, pressure,
and temperature

Hourly measurement of weather data

Ventbuster disconnected from well: 12/24/24 11:17

Notes: well had initial pressure of 614 kPa (89 psig) which was bled off
prior to measuring flow from well.

Gas sample delivered to laboratory: 1/2/25

Laboratory Name/Location: Laboratory Services / Hobbs, NM



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Measurement data

Wellhead pressure (kPa gage)*: 614 kPa

Average flow rate (Sm^3/d): 0.083

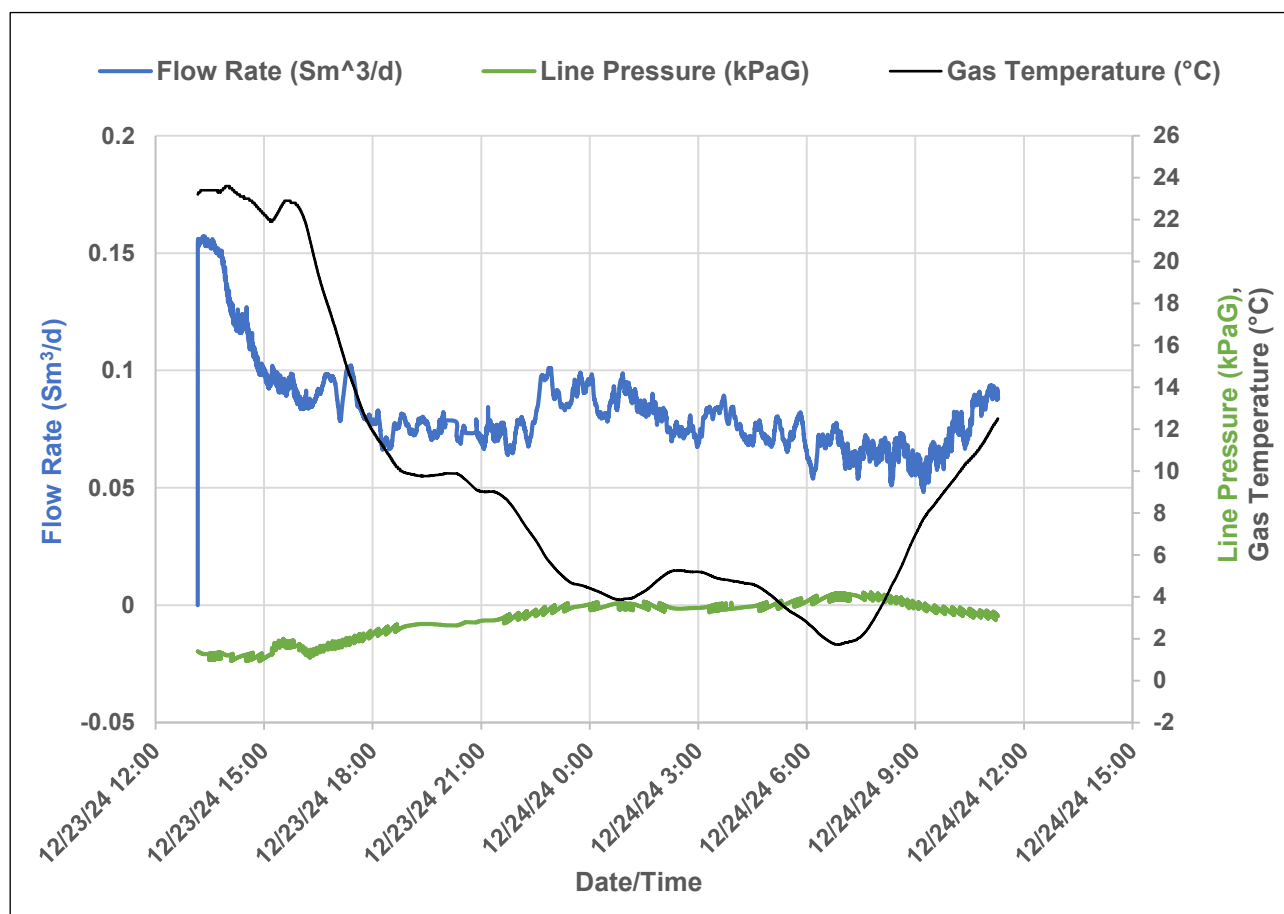
Average methane mass flow rate (g/hr)

using methane % from lab analysis: 0.14

Methane mass flowrate calculation

Variable	Unit	Value
Pressure (P)	kPaA	Std pressure, 101.3 KPaA
Volumetric flow (V)	Std m^3/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

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



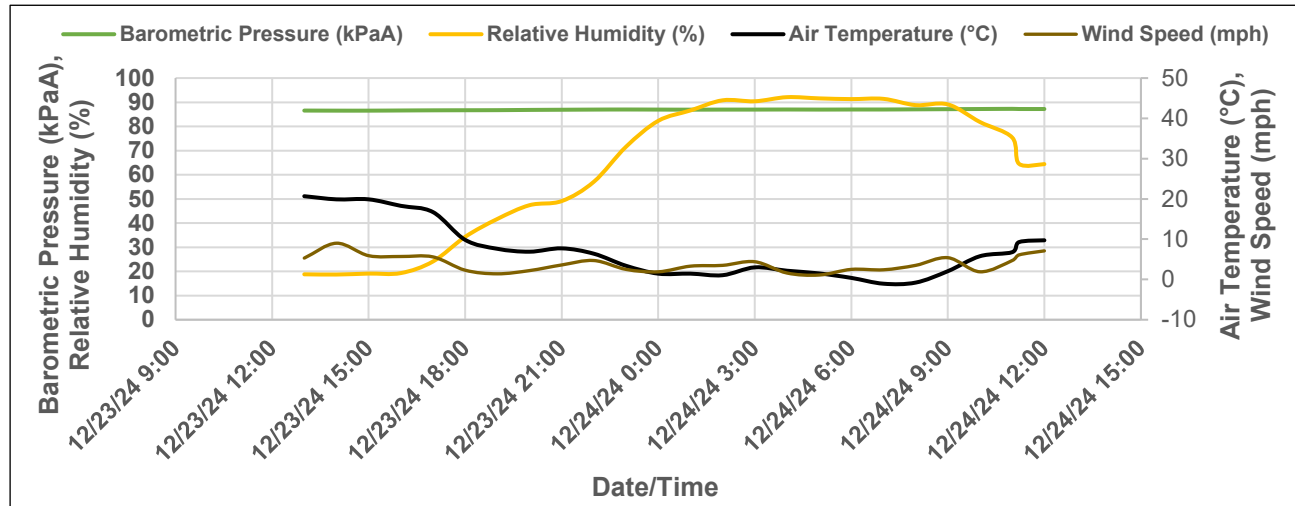


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Weather data

Precipitation during measurement period (in): 0.000



Date and Time	Air Temperature (°C)	Relative Humidity (%)	Barometric Pressure (kPaA)	Wind Speed (mph)
12/23/2024 13:00	20.7	18.8	86.56	5.3
12/23/2024 14:00	19.9	18.7	86.52	9.0
12/23/2024 15:00	19.9	19.1	86.52	5.9
12/23/2024 16:00	18.3	19.3	86.59	5.7
12/23/2024 17:00	16.7	24.1	86.66	5.6
12/23/2024 18:00	9.8	34.3	86.69	2.3
12/23/2024 19:00	7.6	41.7	86.73	1.4
12/23/2024 20:00	6.9	47.4	86.83	2.2
12/23/2024 21:00	7.7	49.1	86.89	3.6
12/23/2024 22:00	6.4	57.1	86.96	4.7
12/23/2024 23:00	3.4	71.6	87.00	2.5
12/24/2024 0:00	1.4	82.3	86.96	1.9
12/24/2024 1:00	1.4	86.6	86.93	3.3
12/24/2024 2:00	1.1	90.8	86.96	3.5
12/24/2024 3:00	3.0	90.4	86.96	4.4
12/24/2024 4:00	2.2	92.1	87.00	1.6
12/24/2024 5:00	1.5	91.6	86.96	1.1
12/24/2024 6:00	0.4	91.3	87.00	2.5
12/24/2024 7:00	-1.1	91.4	87.00	2.4
12/24/2024 8:00	-0.8	88.8	87.06	3.5
12/24/2024 9:00	2.1	89.1	87.13	5.4
12/24/2024 10:00	5.8	81.8	87.20	1.9
12/24/2024 11:00	6.8	75.4	87.27	4.7



23244G		Morgan A Federal #004		Morgan A Federal #004	
Sample Point Code		Sample Point Name		Sample Point Location	
Laboratory Services		2025104052		BAG	
Source Laboratory		Lab File No		Container Identity	
JR Molina - Spot					
SAMPLER					
USA		USA		USA	
District		Area Name		Field Name	
New Mexico					
Facility Name					
Dec 23, 2024		Dec 1, 2024		Jan 2, 2025 11:32	
Date Sampled		Date Effective		Date Received	
Jan 11, 2025					
Date Reported					
Admin					
Ambient Temp (°F)		Flow Rate (Mcf)		Press PSI @ Temp °F	
Analyst		Source Conditions			
TS-Nano				NG	
Operator				Lab Source Description	

Component	Normalized Mol %	Un-Normalized Mol %	GPM
H2S (H2S)	0.0000	0	
Nitrogen (N2)	92.7790	92.7788	
CO2 (CO2)	0.0000	0	
Methane (C1)	5.9290	5.92921	
Ethane (C2)	0.3570	0.35724	0.0950
Propane (C3)	0.0860	0.08612	0.0240
I-Butane (IC4)	0.0000	0	0.0000
N-Butane (NC4)	0.0000	0	0.0000
I-Pentane (IC5)	0.0000	0	0.0000
N-Pentane (NC5)	0.0000	0	0.0000
Hexanes Plus (C6+)	0.8490	0.84867	0.3680
TOTAL	100.0000	100.0000	0.4870

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
112.3	111.2	112.6	111.5

Calculated Total Sample Properties	
GPA2145-16 *Calculated at Contract Conditions	
Relative Density Real	Relative Density Ideal
0.9626	0.9625
Molecular Weight	
27.8782	

C6+ Group Properties		
Assumed Composition		
C6 - 60.000%	C7 - 30.000%	C8 - 10.000%

PROTREND STATUS: Passed By Validator on Jan 13, 2025
DATA SOURCE: Imported
PASSED BY VALIDATOR REASON: First sample taken @ this point, composition looks reasonable
VALIDATOR: Ashley Russell
VALIDATOR COMMENTS: OK

575.397.3713 : 2609 W Marland : Hobbs, NM 88240

Relinquished by: JR Molina 	Date: Jan 9, 2025 Time: 11:30 am.	Received by:	Phone Result: ☐ Yes ☐ No Email Result: ☐ Yes ☐ No	Add'l Phone:		
Relinquished by:	Date: Time:	Received by:	REMARKS:			
Deliver by: (circle one)		Sample Condition	Checked by			
		Cool	Intact	(Initials)		
Sample: UPS Bus Other:		Yes ☐	Yes ☐			
		No ☐	No ☐			

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 421969

DEFINITIONS

Operator: RIDGEWAY ARIZONA OIL CORP. 575 N. Dairy Ashford Houston, TX 77079	OGRID: 164557
	Action Number: 421969
	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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QUESTIONS

Action 421969

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	Action Number: 421969
	Action Type: [UF-OMA] Pre-Plug Methane Monitoring (UF-OMA-MMA)

QUESTIONS

Prerequisites	
[OGRID] Well Operator	[164557] RIDGEWAY ARIZONA OIL CORP.
[API] Well Name and Number	[30-041-10415] MORGAN A FEDERAL #004
Well Status	Active

Monitoring Event Information	
<i>Please answer all the questions in this group.</i>	
Reason For Filing	Pre-Plug Methane Monitoring
Date of monitoring	12/23/2024
Latitude	33.67682
Longitude	-103.55600

Monitoring Event Details	
<i>Please answer all the questions in this group.</i>	
Flow rate in cubic meters per day (m³/day)	0.08
Test duration in hours (hr)	22.1
Average flow temperature in degrees Celsius (°C)	9.3
Average gauge flow pressure in kilopascals (kPag)	3.0
Methane concentration in part per million (ppm)	59,290
Methane emission rate in grams per hour (g/hr)	0.14
Testing Method	Steady State

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