



Pre-Plugging Methane Emissions Monitoring Report

Morgan A Federal 001

Prepared by TS-Nano, Inc.

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

PO# 52100-0000078682

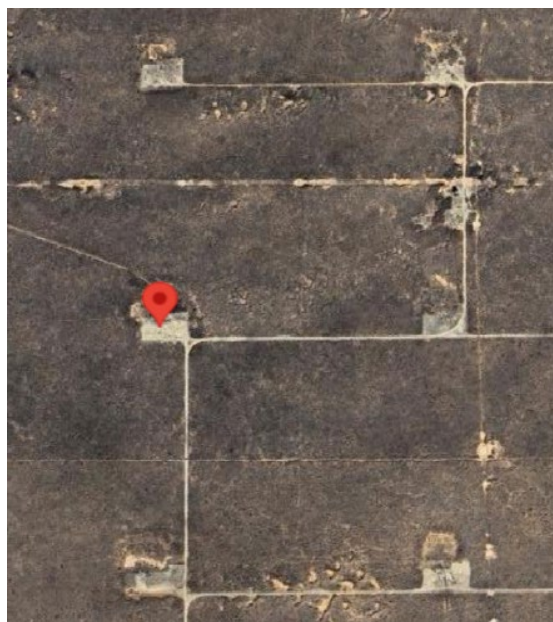
Well information

ID #: 30-041-10419

Coordinates: 33.67319, -103.55555

Name: Morgan A Federal 001

Surface Location: Roosevelt County



Measurement notes

Device used: Ventbuster device VB100-0138

Test operator: JR Molina

Gas sample taken from well: 12/18/24 12:05

Ventbuster connected to well: 12/20/24 16:37

*Continuous monitoring of well flowrate, pressure,
and temperature*

Hourly measurement of weather data

Ventbuster disconnected from well: 12/23/24 10:58

Notes: No remarkable observations

Gas sample delivered to laboratory: 12/20/24

Laboratory Name/Location: Laboratory Services / Hobbs, NM

**TS-NANO**

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Measurement data

Wellhead pressure (kPa gage)*: less than detection limit (<10 kPa)

Average flow rate (Sm^3/d): 0.088

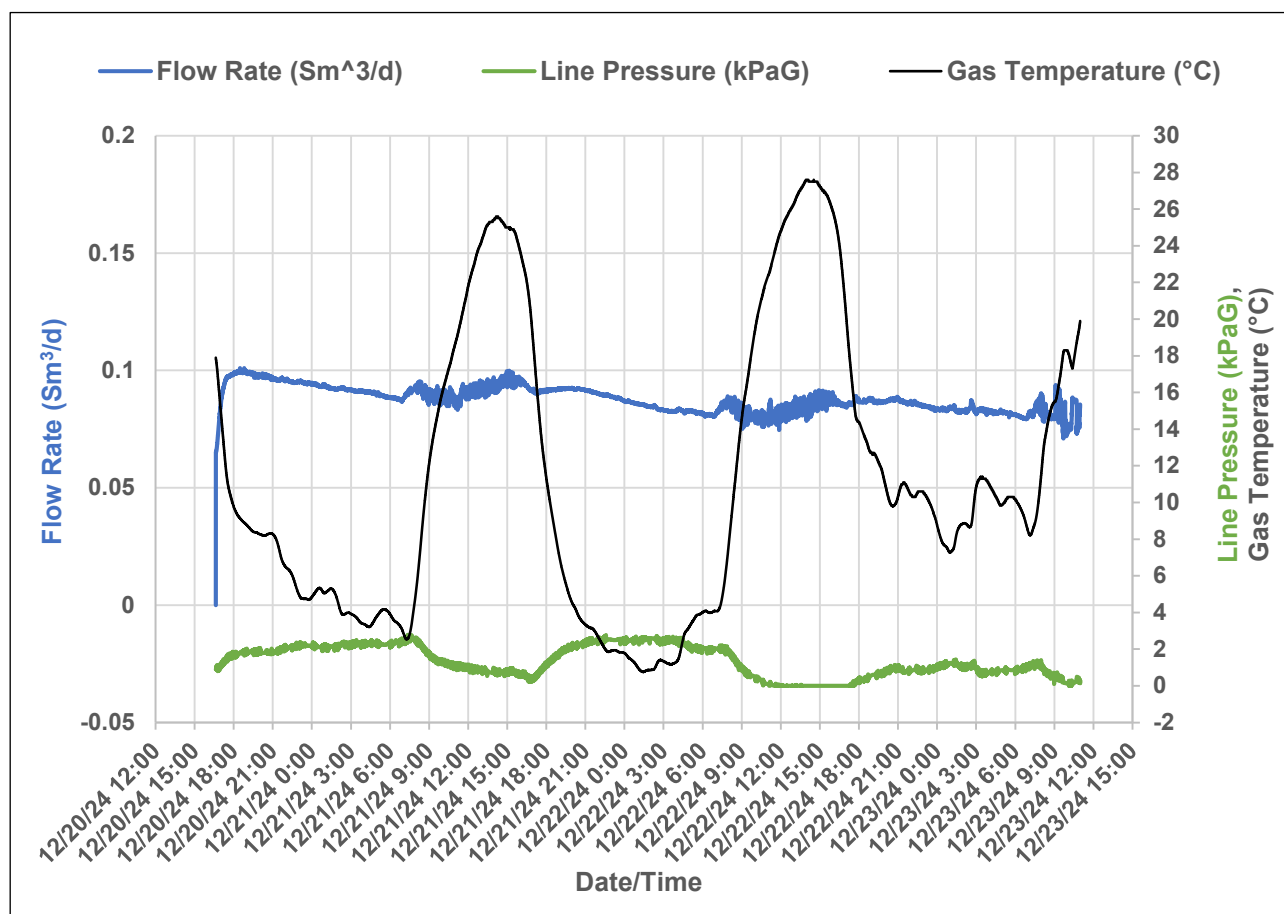
Average methane mass flow rate (g/hr)

using methane % from lab analysis: 0.17

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

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



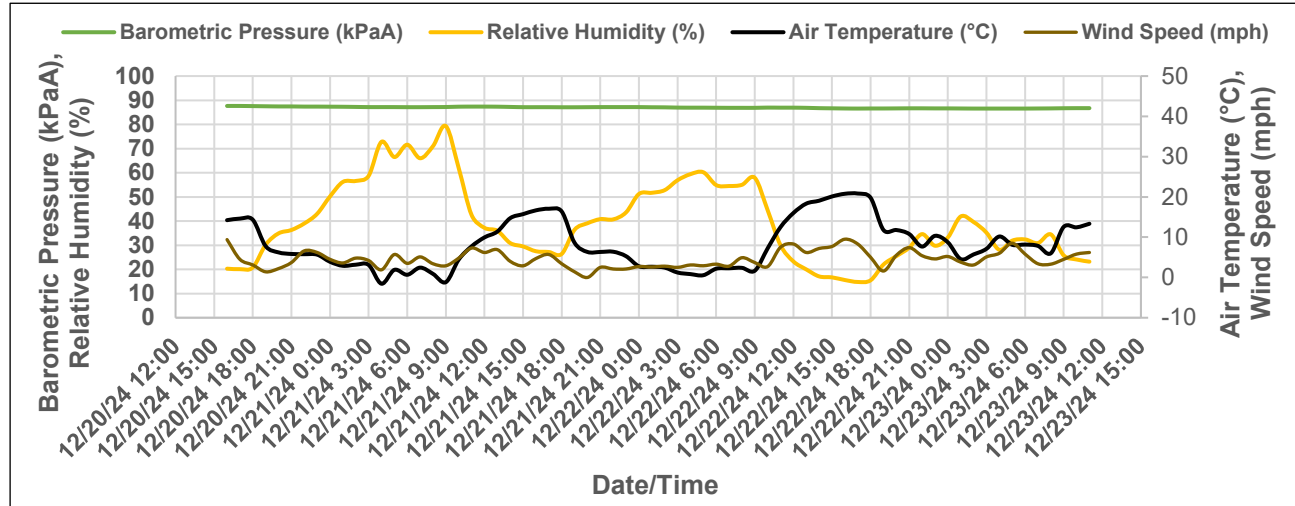


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Weather data

Precipitation during measurement period (in): 0.000



Date and Time	Air Temperature (°C)	Relative Humidity (%)	Barometric Pressure (kPaA)	Wind Speed (mph)
12/20/2024 16:00	14.2	20.3	87.64	9.4
12/20/2024 17:00	14.6	20.1	87.64	4.5
12/20/2024 18:00	14.3	20.8	87.57	3.1
12/20/2024 19:00	7.8	30.2	87.50	1.4
12/20/2024 20:00	6.2	34.9	87.44	2.2
12/20/2024 21:00	5.8	36.3	87.44	3.7
12/20/2024 22:00	5.8	39.0	87.37	6.6
12/20/2024 23:00	5.7	43.0	87.37	6.2
12/21/2024 0:00	3.9	50.2	87.33	4.5
12/21/2024 1:00	2.9	56.2	87.30	3.6
12/21/2024 2:00	3.2	56.6	87.23	4.8
12/21/2024 3:00	3.1	58.7	87.17	4.2
12/21/2024 4:00	-1.6	72.8	87.17	1.9
12/21/2024 5:00	1.9	66.5	87.17	5.7
12/21/2024 6:00	0.7	71.6	87.13	3.5
12/21/2024 7:00	2.4	66.0	87.13	5.1
12/21/2024 8:00	0.9	71.0	87.17	3.4
12/21/2024 9:00	-1.2	79.3	87.20	2.9
12/21/2024 10:00	4.4	61.9	87.33	4.8
12/21/2024 11:00	7.7	42.5	87.37	7.3
12/21/2024 12:00	9.9	37.2	87.37	6.2
12/21/2024 13:00	11.4	36.0	87.33	6.9
12/21/2024 14:00	14.7	30.9	87.23	4.0



23123G		Morgan A Federal #001		Morgan A Federal #001	
Sample Point Code		Sample Point Name		Sample Point Location	
Laboratory Services		2024103481		JR Molina - Spot	
Source Laboratory		Lab File No		Sampler	
USA		USA		New Mexico	
District		Area Name		Facility Name	
Dec 18, 2024		Dec 1, 2024		Dec 20, 2024 15:04	
Date Sampled		Date Effective		Date Reported	
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)	66.3960	66.397	
CO2 (CO2)	0.0510	0.051	
Methane (C1)	6.9430	6.943	
Ethane (C2)	9.2250	9.225	2.4660
Propane (C3)	11.4770	11.477	3.1610
I-Butane (IC4)	1.5620	1.562	0.5110
N-Butane (NC4)	2.9920	2.992	0.9430
I-Pentane (IC5)	0.6660	0.666	0.2440
N-Pentane (NC5)	0.4180	0.418	0.1510
Hexanes Plus (C6+)	0.2700	0.27	0.1170
TOTAL	100.0000	100.0010	7.5930

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

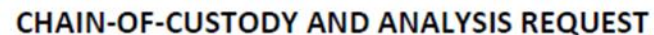
Gross Heating Values (Real, BTU/ft³)			
14.696 PSI @ 60.00 Å°F		14.73 PSI @ 60.00 Å°F	
Dry	Saturated	Dry	Saturated
730.4	718.8	732.1	720.5

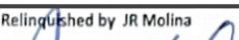
Calculated Total Sample Properties	
GPA2145-16 *Calculated at Contract Conditions	
Relative Density Real	Relative Density Ideal
1.0812	1.0790
Molecular Weight	
31.2514	

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

PROTREND STATUS: Passed By Validator on Dec 26, 2024
DATA SOURCE: Imported
PASSED BY VALIDATOR REASON: First sample taken @ this point, composition looks reasonable
VALIDATOR: Ashley Russell

VALIDATOR COMMENTS:
OK

[illegible]

Relinquished by: 	Date: Dec 20, 2024 Time: 11:30 am	Received by:	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone: <input type="checkbox"/> Yes <input type="checkbox"/> No
Relinquished by:	Date: Time:	Received by:	Email Result: <input type="checkbox"/> Yes <input type="checkbox"/> No
Deliver by: (circle one) Sampler - UPS - Bus - other:		Sample Condition Cool Intact Yes <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/>	REMARKS:
		Checked by (Initials)	

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 421831

DEFINITIONS

Operator: RIDGEWAY ARIZONA OIL CORP. 575 N. Dairy Ashford Houston, TX 77079	OGRID: 164557
	Action Number: 421831
	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

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QUESTIONS

Prerequisites	
[OGRID] Well Operator	[164557] RIDGEWAY ARIZONA OIL CORP.
[API] Well Name and Number	[30-041-10419] MORGAN A FEDERAL #001
Well Status	Active

Monitoring Event Information	
Please answer all the questions in this group.	
Reason For Filing	Pre-Plug Methane Monitoring
Date of monitoring	12/20/2024
Latitude	33.67319
Longitude	-103.55600

Monitoring Event Details	
Please answer all the questions in this group.	
Flow rate in cubic meters per day (m³/day)	0.09
Test duration in hours (hr)	66.4
Average flow temperature in degrees Celsius (°C)	11.1
Average gauge flow pressure in kilopascals (kPag)	1.4
Methane concentration in part per million (ppm)	69,430
Methane emission rate in grams per hour (g/hr)	0.17
Testing Method	Steady State

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