

# **Pre-Plugging Methane Emissions Monitoring Report**

James McFarland A #004

Prepared by TS-Nano, Inc.
For NM Energy, Minerals and Natural Resources Department, Oil Conservation Division PO# 52100-000077175

## Well information

ID #: 30-041-10492
Name: James McFarland A #004







Coordinates: 33.69144, -103.5816

## **Measurement notes**

Device used: VentMedic #DC9447

Test operator: Jay Kitowski

Gas sample taken from well: 6/14/24 14:00 VentMedic connected to well: 6/14/24 14:22

Continuous monitoring of well flowrate, pressure,

and temperature

Hourly measurement of weather data

VentMedic disconnected from well: 6/15/24 12:40

Notes: No remarkable observations

Gas sample delivered to laboratory: 6/18/24

Laboratory Name/Location: Laboratory Services / Hobbs, NM



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James McFarland A #004

### Measurement data

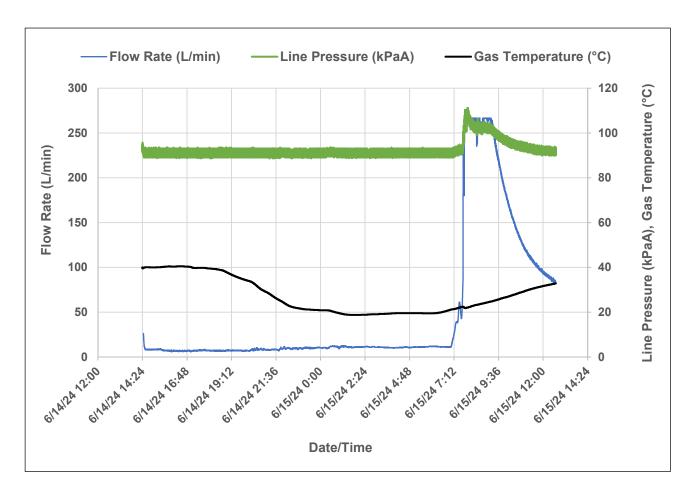
Wellhead pressure (kPa gage)\*: 1275 kPa (185 psi) Average flow rate (L/min): 48.239 Average methane mass flow rate (g/hr)

using methane % from lab analysis: 32.19

### Methane mass flowrate calculation

Variable	Unit	Value
Pressure (P)	kPaA	Measured from the Unit
Volumetric flow (V)	L gas/min	Measured from the Unit
% methane	% (methane/gas)	Measured from Unit or sample
Temperature (T)	Kelvin	Measured from the Unit
Gas constant (R)	Atmosphere·L/(mole·Kelvin)	0.0821
Molecular weight of methane (Mw)	g/mole	16.04

Mass flow of methane 
$$\left(\frac{g}{hr}\right) = \frac{\%, methane}{100\%} * V * P * \frac{Mw}{RT} * \frac{60}{101.3}$$



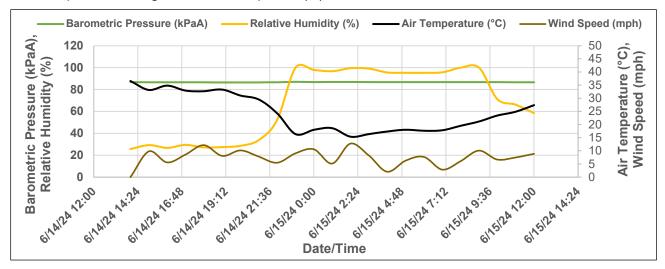


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## Weather data

Precipitation during measurement period (in): 0.841



	Air	Relative	Barometric	Wind
	Temperature	Humidity	Pressure	Speed
Date and Time	(°C)	(%)	(kPaA)	(mph)
6/14/2024 14:00	36.6	25.8	86.83	0.0
6/14/2024 15:00	33.2	29.3	86.69	9.8
6/14/2024 16:00	34.8	26.8	86.69	5.6
6/14/2024 17:00	32.9	29.5	86.66	8.6
6/14/2024 18:00	32.7	27.2	86.59	12.2
6/14/2024 19:00	33.3	27.5	86.49	8.1
6/14/2024 20:00	31.1	28.6	86.56	10.2
6/14/2024 21:00	29.6	33.9	86.56	7.8
6/14/2024 22:00	24.3	52.3	86.69	5.5
6/14/2024 23:00	16.4	100.0	87.03	9.1
6/15/2024 0:00	18.0	97.9	86.83	10.6
6/15/2024 1:00	18.7	96.8	86.96	5.2
6/15/2024 2:00	15.4	99.5	86.96	12.8
6/15/2024 3:00	16.4	99.1	86.83	8.2
6/15/2024 4:00	17.4	95.6	86.76	2.1
6/15/2024 5:00	18.1	95.3	86.76	6.3
6/15/2024 6:00	17.7	95.3	86.76	7.7
6/15/2024 7:00	17.8	95.7	86.79	2.9
6/15/2024 8:00	19.6	100.0	86.76	6.1
6/15/2024 9:00	21.2	100.0	86.79	10.1
6/15/2024 10:00	23.4	71.3	86.76	6.7
6/15/2024 11:00	24.9	66.2	86.69	7.5
6/15/2024 12:00	27.4	58.5	86.66	8.9

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21415G	30-041-10492	JAMES MCFARLAND A #004					
Sample Point Code	Sample Point Name	Sample Point Location					

Laborator	y Services	2024092597	TEDLAR B	AG	JAY KITOWSKI - Spot					
Source La	aboratory	Lab File No	Container Ide	ntity	Sampler					
USA		USA	USA		New Mexico					
District		Area Name		Facility Name						
Jun 14, 202	4 14:00	Jun 1, 2024		Jun 18, 2024 10:33	Jun 18, 2024					
Date Sam	npled	Date Effective		Date Received	Date Reported					
		Admin								
Ambient Temp (°F)	Flow Rate (Mcf)	Analyst		@ Temp °F Conditions						
TS-Na	ano	_			NG					
Opera	ator				Lab Source Description					

Component	Normalized Mol %	Un-Normalized Mol %	GPM
H2S (H2S)	0.0000	0	
Nitrogen (N2)	98.0860	98.08655	
CO2 (CO2)	0.0000	0	
Methane (C1)	1.7840	1.78356	
Ethane (C2)	0.0850	0.08539	0.0230
Propane (C3)	0.0000	0	0.0000
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+)	0.0450	0.0445	0.0200
TOTAL	100.0000	100.0000	0.0430

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:	Jun 3, 2024						

Gross Heating Values (Real, BTU/ft³)									
14.696 PSI @	9 60.00 °F	14.73 PSI @ 60.00 °F							
Dry	Saturated	Dry	Saturated						
21.9	22.4	22.00	22.5						
С	alculated Total	Sample Proper	ties						
O	GPA2145-16 *Calculat	ed at Contract Conditi	ions						
Relative De	nsity Real	Relative	e Density Ideal						
0.90	508	(	0.9609						
Molecular	3								
27.8	309								
	C6+ Grou	p Properties							
	Assumed	Composition							
C6 - 60.0009	C8 - 10.000%								
	Field H2S								
	0	PPM							

Passed By Validator on Jun 18, 2024 PASSED BY VALIDATOR REASON:

First sample taken @ this point, composition looks reasonable

DATA SOURCE:

Imported

VALIDATOR:

Ashley Russell

PROTREND STATUS:

**VALIDATOR COMMENTS:** 

OK



# **CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

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					PO#:			Analysis Request																			
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City: Albuquerque		State	e: NM			7in: 9	87110		NT TO THE PARTY.		Jay K																ĺ
Phone #: 505-907-409!		CONTRACTOR AND ADDRESS	il: jstormon	†@†c			07110				ess: S		or.(			Charles (Inc.)											
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					No			No																			

<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 Phone:(575) 393-6161 Fax:(575) 393-0720

District II 811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720

District III 1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

1220 S. St Francis Dr., Santa Fe, NM 87505 Phone:(505) 476-3470 Fax:(505) 476-3462

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

DEFINITIONS

Action 370131

#### **DEFINITIONS**

Operator:	OGRID:				
RIDGEWAY ARIZONA OIL CORP.	164557				
575 N. Dairy Ashford	Action Number:				
Houston, TX 77079	370131				
	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 370131

## **QUESTIONS**

Operator:	OGRID:
RIDGEWAY ARIZONA OIL CORP.	164557
575 N. Dairy Ashford	Action Number:
Houston, TX 77079	370131
	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	[30-041-10492] JAMES MCFARLAMD A #004							
Well Status	Active							

Monitoring Event Information						
Please answer all the questions in this group.						
Reason For Filing	Pre-Plug Methane Monitoring					
Date of monitoring	06/14/2024					
Latitude	33.69144					
Longitude	-103.58160					

Monitoring Event Details	
Please answer all the questions in this group.	
Flow rate in cubic meters per day (m³/day)	69.46
Test duration in hours (hr)	22.3
Average flow temperature in degrees Celsius (°C)	27.4
Average gauge flow pressure in kilopascals (kPag)	5.9
Methane concentration in part per million (ppm)	17,840
Methane emission rate in grams per hour (g/hr)	32.19
Testing Method	Steady State

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