

Pre-Plugging Methane Emissions Monitoring Report

James McFarland A#002

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

Well information

ID #: 30-041-10447 Coordinates: 33.68781, -103.58162

Name: James McFarland A#002 Surface Location: Roosevelt County









Measurement notes

Device used: VentMedic #DC9447

Test operator: Jay Kitowski

Gas sample taken from well: 6/12/24 11:59 VentMedic connected to well: 6/17/24 13:29

Continuous monitoring of well flowrate, pressure,

and temperature

Hourly measurement of weather data

VentMedic disconnected from well: 6/18/24 11:16

Notes: Well had initial pressure of 500 psi (3450 kPa); when venting well, some liquid (< a few liters) produced so subsequently used trap with VentMedic; well was vented to zero pressure upon shutting in before beginning flow test; flow rate strong for about 2 hours before dropping to near zero.

Gas sample delivered to laboratory: 6/18/24

Laboratory Name/Location: Laboratory Services / Hobbs, NM



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Measurement data

Wellhead pressure (kPa gage)*: 3450 kPa (500 psi)

Average flow rate (L/min): 6.673

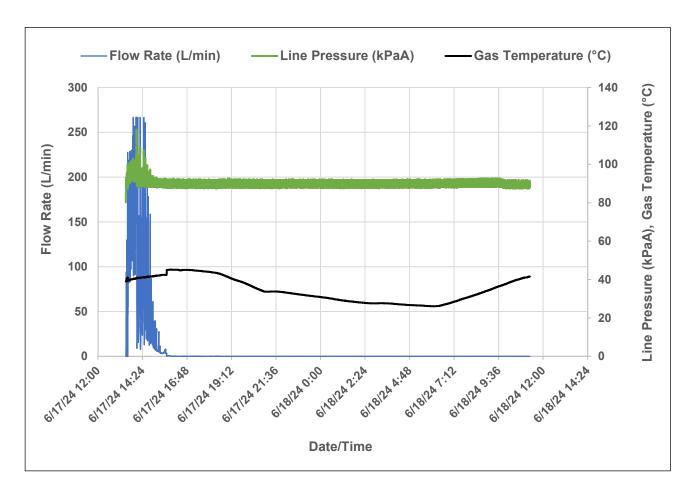
Average methane mass flow rate (g/hr)

using methane % from lab analysis: 1.92

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

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



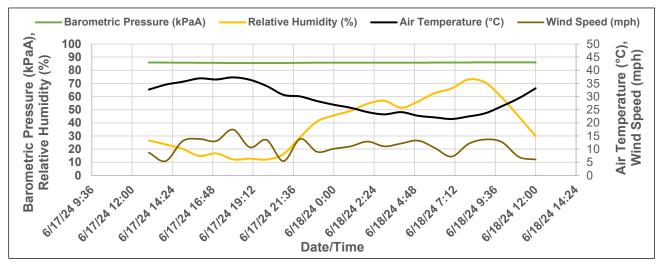


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Weather data

Precipitation during measurement period (in): 0.0



	Air	Relative	Barometric	Wind
	Temperature	Humidity	Pressure	Speed
Date and Time	(°C)	(%)	(kPaA)	(mph)
6/17/2024 13:00	32.7	26.7	85.98	8.7
6/17/2024 14:00	34.6	23.6	85.91	5.5
6/17/2024 15:00	35.7	20.2	85.84	13.1
6/17/2024 16:00	36.9	14.9	85.78	13.9
6/17/2024 17:00	36.6	16.8	85.68	13.1
6/17/2024 18:00	37.3	12.3	85.64	17.5
6/17/2024 19:00	36.4	12.8	85.61	10.7
6/17/2024 20:00	34.1	12.2	85.64	13.5
6/17/2024 21:00	30.7	16.3	85.64	5.5
6/17/2024 22:00	30.1	29.2	85.71	13.9
6/17/2024 23:00	28.3	41.1	85.81	9.0
6/18/2024 0:00	26.9	45.7	85.88	10.2
6/18/2024 1:00	25.8	49.2	85.88	11.1
6/18/2024 2:00	24.1	54.6	85.84	12.9
6/18/2024 3:00	23.3	56.9	85.84	11.1
6/18/2024 4:00	24.1	51.5	85.84	12.2
6/18/2024 5:00	22.7	56.3	85.88	13.3
6/18/2024 6:00	22.1	62.7	85.91	10.5
6/18/2024 7:00	21.5	66.2	85.98	7.2
6/18/2024 8:00	22.4	73.0	86.01	12.0
6/18/2024 9:00	23.7	70.7	86.05	13.7
6/18/2024 10:00	26.4	59.2	86.08	12.7
6/18/2024 11:00	29.4	44.8	86.05	7.1
6/18/2024 12:00	33.2	30.1	86.12	6.1

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21414G	30-041-10447	JAME MCFARLAND #A002						
Sample Point Code	Sample Point Name	Sample Point Location						

Laborator	y Services	2024092596	TEDLAR B	AG C	CLARK HUTCHMAN - Spot								
Source L	aboratory	Lab File No	Lab File No Container Identity				Lab File No Container Identity Sampler						
USA		USA	USA		New Mexico								
District		Area Name		Facility Name									
Jun 12, 202	4 11:59	Jun 1, 2024		Jun 18, 2024 10:31	Jun 18, 2024								
Date Sam	npled	Date Effective		Date Received	Date Reported								
		Luis											
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)	98.9670	98.96692	
CO2 (CO2)	0.0000	0	
Methane (C1)	0.8460	0.84554	
Ethane (C2)	0.1060	0.10608	0.0280
Propane (C3)	0.0300	0.03043	0.0080
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+)	0.0510	0.05104	0.0220
TOTAL	100.0000	100.0000	0.0580

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						

Gro	Gross Heating Values (Real, BTU/ft³)								
14.696 PSI @	60.00 °F	14.73 PSI @ 60.00 °F							
Dry	Saturated	Dry	Saturated						
13.8	14.5	13.8	14.5						
C	alculated Total Sar	nple Proper	ties						
G	PA2145-16 *Calculated at	Contract Conditi	ons						
Relative De	nsity Real	Relative	Density Ideal						
0.96	550	0.9651							
Molecular	Weight								
27.9	524								
	C6+ Group Pi	roperties							
	Assumed Com	position							
C6 - 60.000%	6 C7 - 30.00	00%	C8 - 10.000%						
	Field H2	S							
	0 PPM	1							

DATA SOURCE:

PASSED BY VALIDATOR REASON:

Passed By Validator on Jun 18, 2024 Imported

Close enough to be considered reasonable.

VALIDATOR: Ashley Russell

PROTREND STATUS:

VALIDATOR COMMENTS:

OK



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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Project Manager: John Stormont	Manager: John Stormont PO #:																									
Address: 5901 Indian School Rd NE		Company					pany:	TS-N	ano, Inc.									-				EM MESON CONTROL OF THE PERSON CONTROL OF TH				
City: Albuquerque	Sta	te: NM			Zip: 8	37110		************	A DESCRIPTION OF THE PARTY OF T	Jay K		iki			-			-								
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Lab I.D. Sample I.D.	(S)POT or (C)OMP	# Container	Groudwater	Wastewater	GAS	Oil	Solid	Other	Acid/Base	Ice/Cool	Other	Date	Time	C-6+ RGA	C-10+ Ext		CHARLES AND	APPENDING TO THE PROPERTY OF T	and the contraction of the contr	e de la descripción de la companya de la compa						
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Sampler - UPS - Bus - other:				Yes			Inta Yes No		(Initial:	s)									~						

<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 370127

DEFINITIONS

Operator:	OGRID:				
RIDGEWAY ARIZONA OIL CORP.	164557				
575 N. Dairy Ashford	Action Number:				
Houston, TX 77079	370127				
	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 370127

QUESTIONS

Operator:	OGRID:
RIDGEWAY ARIZONA OIL CORP.	164557
575 N. Dairy Ashford	Action Number:
Houston, TX 77079	370127
	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	[30-041-10447] JAMES MCFARLAMD A #002							
Well Status	Active							

Monitoring Event Information						
Please answer all the questions in this group.						
Reason For Filing	Pre-Plug Methane Monitoring					
Date of monitoring	06/17/2024					
Latitude	33.68781					
Longitude	-103.58162					

Monitoring Event Details		
lease answer all the questions in this group.		
Flow rate in cubic meters per day (m³/day)	9.61	
Test duration in hours (hr)	21.8	
Average flow temperature in degrees Celsius (°C)	34.6	
Average gauge flow pressure in kilopascals (kPag)	4.5	
Methane concentration in part per million (ppm)	8,460	
Methane emission rate in grams per hour (g/hr)	1.92	
Testing Method	Steady State	

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