TS-NANO

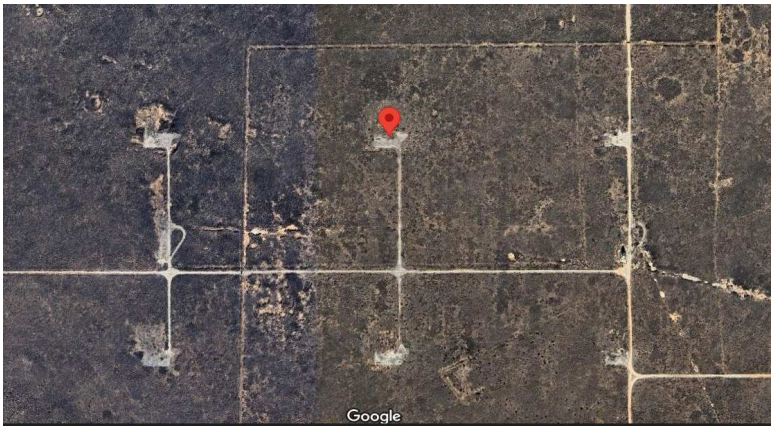
Pre-Plugging Methane Emissions Monitoring Report

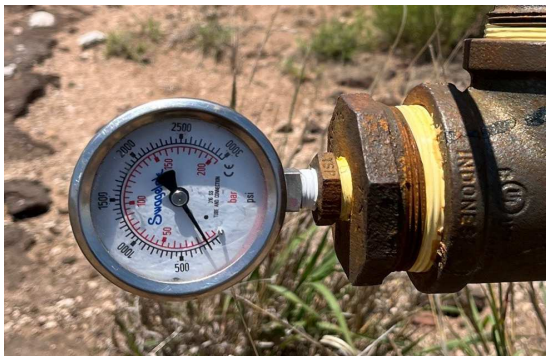
Humble Tucker #003

Prepared by TS-Nano, Inc.
For NM Energy, Minerals and Natural Resources Department, Oil Conservation Division
PO# 52100-0000077175

Well information

ID #: 30-041-20095
Name: Humble Tucker #003
Coordinates: 33.67682, -103.62936
Surface Location: Roosevelt County





Measurement notes

Device used: VentMedic #DC9447
Test operator: Jay Kitowski

Gas sample taken from well: 6/18/24 12:45
VentMedic connected to well: 6/18/24 14:39
Continuous monitoring of well flowrate, pressure, and temperature
Hourly measurement of weather data
VentMedic disconnected from well: 6/19/24 12:18
Notes: No remarkable observations

Gas sample delivered to laboratory: 6/20/24
Laboratory Name/Location: Laboratory Services / Hobbs, NM

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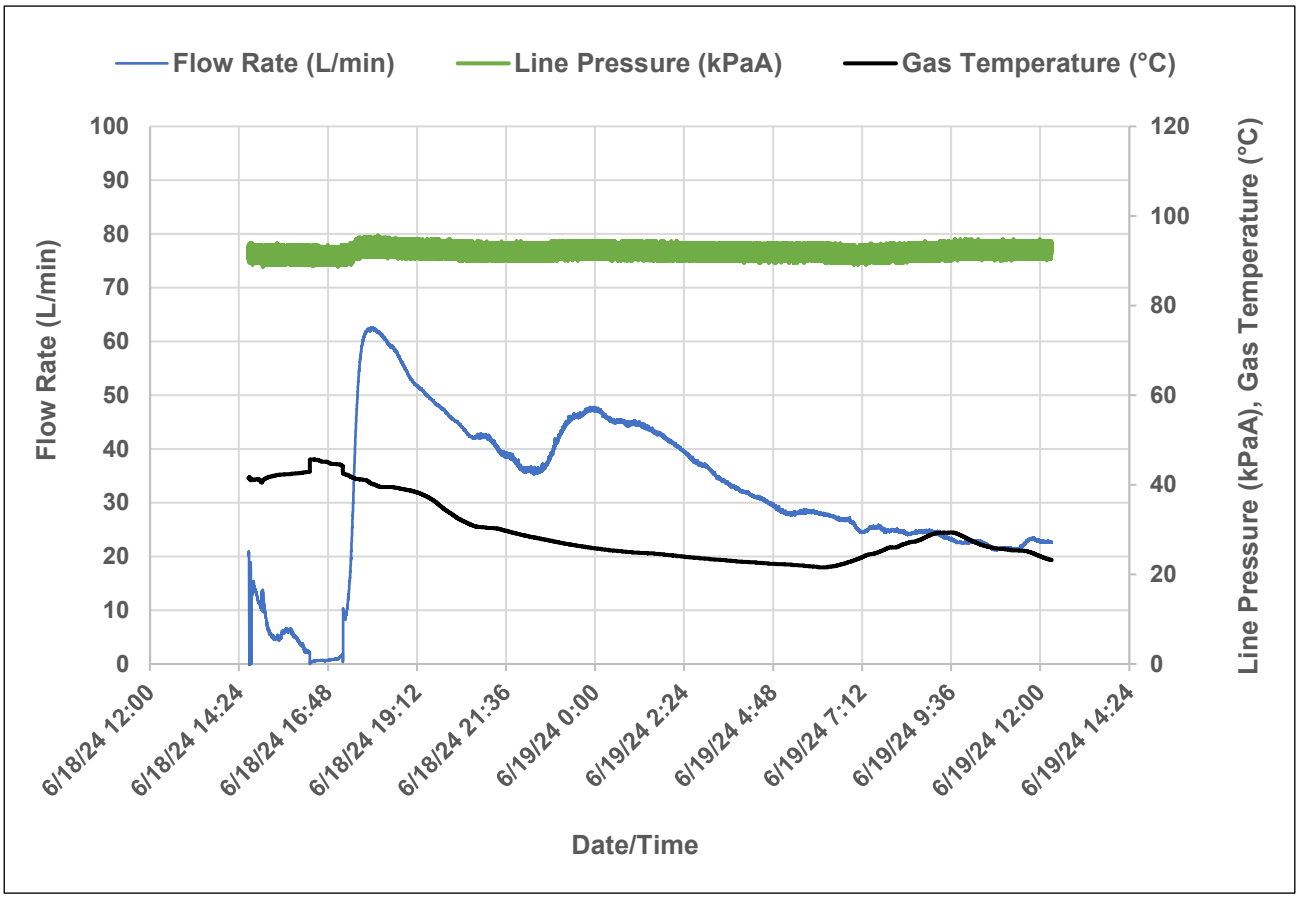
Measurement data

Wellhead pressure (kPa gage):* 1380 kPa (200 psi)
Average flow rate (L/min): 31.995
Average methane mass flow rate (g/hr)
using methane % from lab analysis: 724.13

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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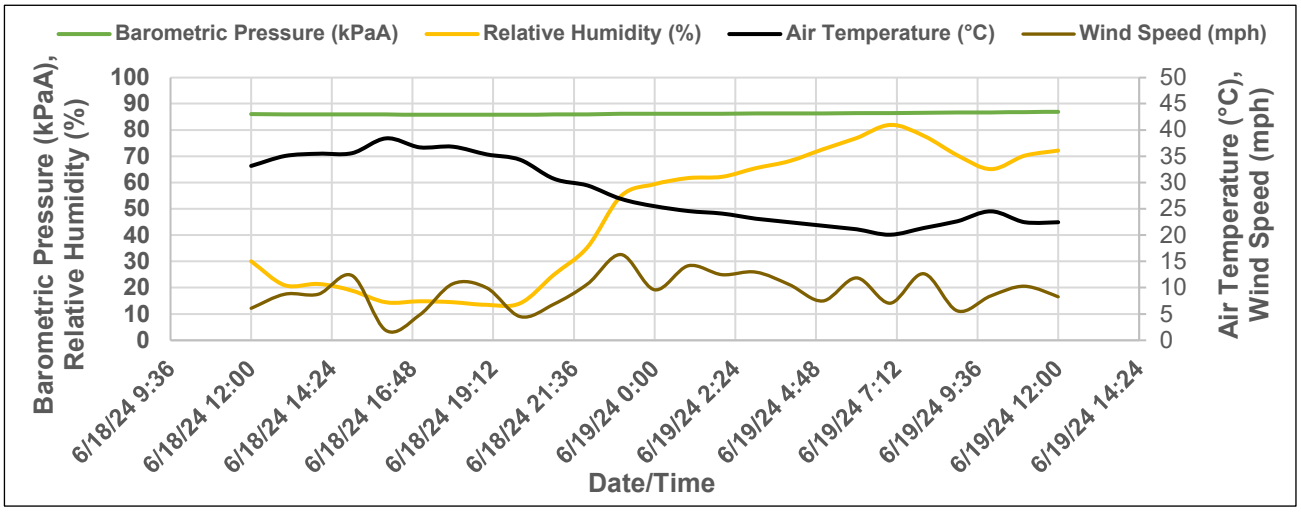
Weather data

Precipitation during measurement period (in): 0.021



Date and Time	Air Temperature (°C)	Relative Humidity (%)	Barometric Pressure (kPaA)	Wind Speed (mph)
6/18/2024 12:00	33.2	30.1	86.12	6.1
6/18/2024 13:00	35.1	21.0	85.95	8.8
6/18/2024 14:00	35.5	21.5	85.95	8.8
6/18/2024 15:00	35.6	18.9	85.95	12.3
6/18/2024 16:00	38.4	14.5	85.91	1.9
6/18/2024 17:00	36.7	14.9	85.84	4.8
6/18/2024 18:00	36.8	14.5	85.84	10.8
6/18/2024 19:00	35.4	13.5	85.81	10.0
6/18/2024 20:00	34.3	14.1	85.84	4.5
6/18/2024 21:00	30.7	25.0	85.91	6.9
6/18/2024 22:00	29.4	35.4	86.01	10.7
6/18/2024 23:00	26.9	54.9	86.15	16.3
6/19/2024 0:00	25.5	59.4	86.22	9.6
6/19/2024 1:00	24.6	61.7	86.25	14.2
6/19/2024 2:00	24.1	62.2	86.25	12.5
6/19/2024 3:00	23.2	65.5	86.29	13.0
6/19/2024 4:00	22.5	68.2	86.29	10.6
6/19/2024 5:00	21.8	72.7	86.35	7.5
6/19/2024 6:00	21.1	77.0	86.42	11.9
6/19/2024 7:00	20.1	82.0	86.45	7.1
6/19/2024 8:00	21.4	77.8	86.56	12.7
6/19/2024 9:00	22.7	70.4	86.69	5.6
6/19/2024 10:00	24.6	65.1	86.73	8.5
6/19/2024 11:00	22.5	70.2	86.86	10.3
6/19/2024 12:00	22.5	72.2	86.93	8.3

LABORATORY SERVICES Natural Gas Analysis
www.permianls.com
575.397.3713 2609 W Marland Hobbs NM 88240

C6+ Gas Analysis Report

Sample Point Code	Sample Point Name	Sample Point Location
21469G	30-041-20095	Humble Tucker #003

Source Laboratory	Lab File No	Container Identity	Sampler
Laboratory Services	2024092769	Tedlar Bag	J K - Spot

District	Area Name	Field Name	Facility Name
USA	USA	USA	New Mexico

Date Sampled	Date Effective	Date Received	Date Reported
Jun 18, 2024 12:45	Jun 1, 2024	Jun 20, 2024 12:09	Jun 25, 2024

Ambient Temp (°F)	Flow Rate (Mcf)	Analyst	Press PSI @ Temp °F Source Conditions
		Luis	

Operator	Lab Source Description
TS-Nano	Ng

Component	Normalized Mol %	Un-Normalized Mol %	GPM
H2S (H2S)	0.0000	0	
Nitrogen (N2)	28.2090	28.20906	
CO2 (CO2)	0.0320	0.03166	
Methane (C1)	66.7400	66.7404	
Ethane (C2)	3.0740	3.0742	0.8230
Propane (C3)	1.0790	1.07945	0.2980
I-Butane (IC4)	0.1750	0.17477	0.0570
N-Butane (NC4)	0.3460	0.34604	0.1090
I-Pentane (IC5)	0.1190	0.11858	0.0440
N-Pentane (NC5)	0.0790	0.07857	0.0290
Hexanes Plus (C6+)	0.1470	0.14725	0.0640
TOTAL	100.0000	100.0000	1.4240

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 @ 60.00 Â°F		14.75 PSI @ 60.00 Â°F	
Dry	Saturated	Dry	Saturated
790.9	778.5	793.8	781.4

Calculated Total Sample Properties

GPA2145-16 *Calculated at Contract Conditions

Relative Density Real	Relative Density Ideal
0.7123	0.7114

Molecular Weight: 20.6059

C6+ Group Properties

Assumed Composition

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

Field H2S: 0 PPM

PROTREND STATUS:
Passed By Validator on Jun 25, 2024

DATA SOURCE:
Imported

PASSED BY VALIDATOR REASON:
First sample taken @ this point, composition looks reasonable

VALIDATOR:
Ashley Russell

VALIDATOR COMMENTS:
OK

LABORATORY SERVICES
Natural Gas Analysis

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

www.permianls.com
575.397.3713 2609 W Marland Hobbs, NM 88240

		BILL TO
Company Name: TS-Nano, Inc.		PO #:
Project Manager: John Stormont		Company: TS-Nano, Inc.
Address: 5901 Indian School Rd NE		Attn: Jay Kitowski
City: Albuquerque	State: NM Zip: 87110	Address: Same
Phone #: 505-907-4095	Email: jstormont@ts-nano.com	City:
Project #:	Project Owner:	State: Zip:
Project Name:		Phone #: 505-464-4836
Project Location:		Email: jkitowski@ts-nano.com
Sampler Name: Jay Kitowski		

Lab I.D.	Sample I.D.	(S)POT or (C)OMP	# Container	Matrix: Groundwater	Matrix: Wastewater	Matrix: GAS	Matrix: Oil	Matrix: Solid	Matrix: Other	Preserve: Acid/Base	Preserve: Ice/Cool	Preserve: Other	Sampling: Date	Sampling: Time	Analysis Request: C-6+ RGA	Analysis Request: C-10+ Ext
2024092769	Humble Tucker #003	S	1 Tedlar			X									X	

Relinquished by Jay Kitowski (signature) Date: 6/20/24 Time: 12:09	Received by: Jess Shepker	Phone Result: ☐ Yes ☐ No Add'l Phone:
		Email Result: X Yes ☐ No jstormont@ts-nano.com
Relinquished by Date: Time:	Received by:	REMARKS:
Deliver by: (circle one) (Sampler) - UPS - Bus - other:	Sample Condition: Cool Yes ☐ No ☐; Intact Yes ☐ No ☐	Checked by (Initials)

District I
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
District IV
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

Operator: RIDGEWAY ARIZONA OIL CORP. 575 N. Dairy Ashford Houston, TX 77079	OGRID: 164557
	Action Number: 370115
	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 370115

QUESTIONS

Operator: RIDGEWAY ARIZONA OIL CORP. 575 N. Dairy Ashford Houston, TX 77079	OGRID: 164557
	Action Number: 370115
	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	**[30-041-20095] HUMBLE TUCKER #003**
Well Status	**Active**

Monitoring Event Information *Please answer all the questions in this group.*	
Reason For Filing	**Pre-Plug Methane Monitoring**
Date of monitoring	06/18/2024
Latitude	33.67682
Longitude	-103.62936

Monitoring Event Details *Please answer all the questions in this group.*	
Flow rate in cubic meters per day (m^3/day)	46.07
Test duration in hours (hr)	21.6
Average flow temperature in degrees Celsius (°C)	29.5
Average gauge flow pressure in kilopascals (kPag)	6.0
Methane concentration in part per million (ppm)	667,400
Methane emission rate in grams per hour (g/hr)	724.13
Testing Method	Steady State

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