



Pre Plugging Methane Quantification Test Report

Report Prepared By Curtis Shuck

Start Date: Sat Jan 21 2023 22:46:43 GMT+0000
 (Coordinated Universal Time)
End Date: Mon Jan 23 2023 18:57:22 GMT+0000
 (Coordinated Universal Time)
Test Time Subset: 2023-01-21T22:46:43.000Z -
 2023-01-23T18:55:30.477Z
Device: VB100-0020
Well Licensee: 30-005-20084
Well Name: Cato San Andres Unit 136
UWI: 30-005-20084
Well License Number: 30-005-20084
Surface Location: State of NM
Bottom Hole Location: Unknown
Test Operator: Sean O. Jacobson
Authorized By: State of NM
Test Reason: IJJA Pre Plugging
Scope Of Work: 12 Hour
AFE Number: 52100-00000073108
GPS: 33.60718,-103.86569
Notes: GTG

Orphan Well Flow Test Results

Average Flowrate 0.0014 scf/hr	Average Flow Temperature 38.48 °F	Average Flow Pressure 0.4711 psi	Flow Duration 2648.79 min	Methane Concentration 100 %	Methane Emissions 0.03 g/hr	Benzene 1 ppm
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Annual Emission Rate = ($\bar{Q}_{measured}$) x (Conc $_{measured}$) x p x 0.454 x 8,760

Methane Calculation:

($\bar{Q}_{measured}$) 0.0014 scf/hr x (Conc $_{measured}$) 1 = 0.00142588 scf CH₄/hr

Methane Flow x (p) x .0423 x .454 x 8,760 = 0.2628 CH₄ kg/yr Emission Rate

Where:

$Q_{measured}$ - scf/hr total measured flow

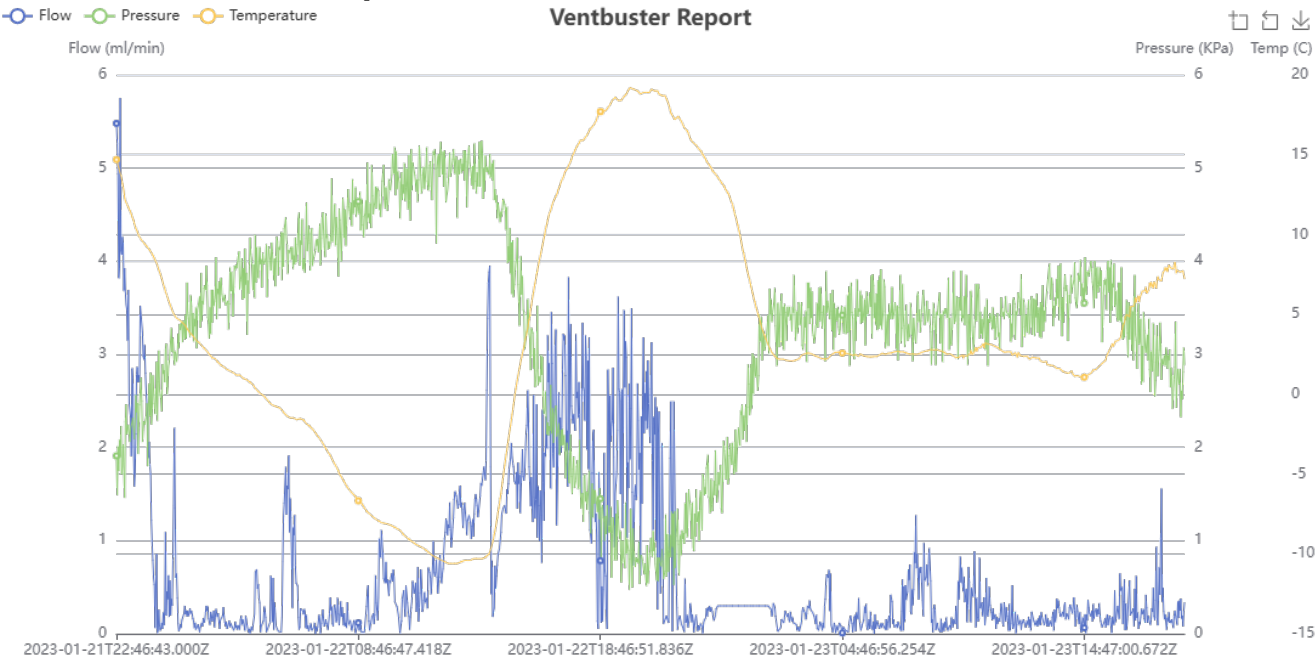
Conc $_{measured}$ - methane concentration measured

p - 0.0423 methane density at 1 atm; 60° F

0.454 - Conversion from lb to kg

8760 - Conversion from hr to yr

Flow/Pressure/Temperature Timeseries



Site Photos



15893G	CSA #136 1 inch	CSA #136	
Sample Point Code	Sample Point Name	Sample Point Location	
Laboratory Services	2023063332	Tedlar Bag	SOJ - Spot
Source Laboratory	Lab File No	Container Identity	Sampler
USA	USA	USA	New Mexico
District	Area Name	Field Name	Facility Name
Jan 21, 2023 15:28	Jan 21, 2023 15:28	Jan 27, 2023 11:02	Jan 30, 2023
Date Sampled	Date Effective	Date Received	Date Reported
System Administrator			
Ambient Temp (°F)	Flow Rate (Mcf)	Analyst	Press PSI @ Temp °F Source Conditions
Well Done Foundation		NG	
Operator		Lab Source Description	

Component	Normalized Mol %	Un-Normalized Mol %	GPM
H2S (H2S)	0.0000	0	
Nitrogen (N2)	89.3150	89.316	
CO2 (CO2)	0.5000	0.5	
Methane (C1)	5.5180	5.518	
Ethane (C2)	1.6570	1.657	0.4430
Propane (C3)	1.9500	1.95	0.5370
I-Butane (IC4)	0.2060	0.206	0.0670
N-Butane (NC4)	0.3380	0.338	0.1070
I-Pentane (IC5)	0.0490	0.049	0.0180
N-Pentane (NC5)	0.0200	0.02	0.0070
Hexanes Plus (C6+)	0.4470	0.447	0.1940
TOTAL	100.0000	100.0010	1.3730

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:	Jan 23, 2023

Gross Heating Values (Real, BTU/ft³)			
14.696 PSI @ 60.00 Å°F		14.73 PSI @ 60.00 Å°F	
Dry	Saturated	Dry	Saturated
178.1	176.000	178.5	176.4

Calculated Total Sample Properties	
GPA2145-16 *Calculated at Contract Conditions	
Relative Density Real	Relative Density Ideal
0.9762	0.9760
Molecular Weight	
28.2661	

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

Field H2S
0 PPM

PROTREND STATUS:

Passed By Validator on Jan 31, 2023

DATA SOURCE:

Imported

PASSED BY VALIDATOR REASON:

First sample taken @ this point, composition looks reasonable

VALIDATOR:

Brooke Rush

VALIDATOR COMMENTS:

OK

Source	Date	Notes
Brooke Rush	Jan 31, 2023 9:43 pm	Methane = 55,180 PPM

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 494744

DEFINITIONS

Operator: CANO PETRO OF NEW MEXICO, INC. 801 Cherry Street Fort Worth, TX 76102	OGRID: 248802
	Action Number: 494744
	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	[248802] CANO PETRO OF NEW MEXICO, INC.
[API] Well Name and Number	[30-005-20084] CATO SAN ANDRES UNIT #136
Well Status	Reclamation Fund Approved

Monitoring Event Information*Please answer all the questions in this group.*

Reason For Filing	Pre-Plug Methane Monitoring
Date of monitoring	01/21/2023
Latitude	33.6071129
Longitude	-103.8657608

Monitoring Event Details*Please answer all the questions in this group.*

Flow rate in cubic meters per day (m ³ /day)	0.00
Test duration in hours (hr)	44.1
Average flow temperature in degrees Celsius (°C)	3.6
Average gauge flow pressure in kilopascals (kPag)	3.3
Methane concentration in part per million (ppm)	55,180
Methane emission rate in grams per hour (g/hr)	0.03
Testing Method	Steady State

Monitoring Contractor*Please answer all the questions in this group.*

Name of monitoring contractor	WELL DONE NEW MEXICO LLC
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