Pre Plugging Methane Quantification Test Report

Report Prepared By Curtis Shuck

Start Date:	Sun Dec 15 2024 23:01:17 GMT+0000 (Coordinated Universal Time)
End Date:	Tue Dec 17 2024 21:23:28 GMT+0000 (Coordinated Universal Time)
Test Time Subset:	2024-12-15T22:59:56.872Z - 2024-12-17T21:22:07.432Z
Device:	VB100-0003
Well Licensee:	NMOCD
Well Name:	Cato San Andres Unit 109
UWI:	30-005-20068
Well License Number:	30-005-20068
Surface Location:	Berry Family
Bottom Hole Location:	Unknown
Test Operator:	CES QMS
Authorized By:	NMOCD
Test Reason:	IIJA FORMULA 1 PRE PLUG
Scope Of Work:	12-hour
AFE Number:	78656
GPS:	33.61804,-103.86119
Notes:	Leaking at tubing

Orphan Well Flow Test Results

Average Flowrate	Average Flow Temperature	Average Flow Pressure	Flow Duration	Methane Concentration	Methane Emissions	Benzene
0.0054 scf/hr	**46.95** °F	**2.6484** psi	**2782.18** min	**1** %	**0** g/hr	**1** ppm

Annual Emission Rate = ($\bar{x}Q_{measured}$) x ($Conc_{measured}$) x p x 0.454 x 8,760

Methane Calculation:

($\bar{x}Q_{measured}$) 0.0054 scf/hr x ($Conc_{measured}$) 0.01= 0.00005423 scf CH4/hr

Methane Flow x (***p***) x .0423 x .454 x 8,760 = 0 **CH4 kg/yr Emission Rate**

Where:

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

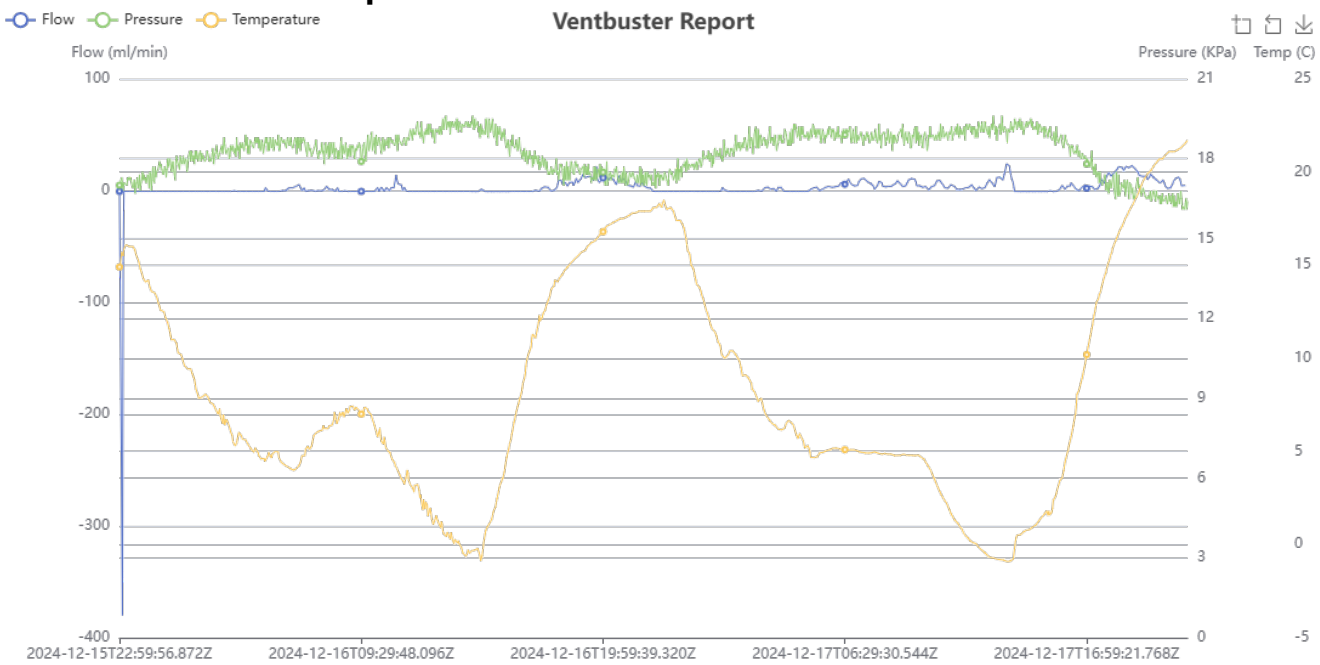
$Conc_{measured}$ - methane concentration measured

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

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
23156G	CSAU #109 Pre Plug	CSAU #109 Pre Plug

Source Laboratory	Lab File No	Container Identity	Sampler
Laboratory Services	2024103625	BAG	CES - Spot

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

Date Sampled	Date Effective	Date Received	Date Reported
Dec 15, 2024 16:25	Dec 1, 2024	Dec 23, 2024 15:33	Dec 31, 2024

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

Operator	Lab Source Description
Well Done Foundation	NG

Component	Normalized Mol %	Un-Normalized Mol %	GPM
H2S (H2S)	0.0000	0	
Nitrogen (N2)	97.1230	97.124	
CO2 (CO2)	0.0330	0.033	
Methane (C1)	1.2420	1.242	
Ethane (C2)	0.3670	0.367	0.0980
Propane (C3)	0.5330	0.533	0.1470
I-Butane (IC4)	0.1050	0.105	0.0340
N-Butane (NC4)	0.2950	0.295	0.0930
I-Pentane (IC5)	0.1300	0.13	0.0480
N-Pentane (NC5)	0.0860	0.086	0.0310
Hexanes Plus (C6+)	0.0860	0.086	0.0370
TOTAL	100.0000	100.0010	0.4880

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 Â°F		14.73 PSI @ 60.00 Â°F	
Dry	Saturated	Dry	Saturated
58.7	58.6	58.8	58.7

Calculated Total Sample Properties

GPA2145-16 *Calculated at Contract Conditions

Relative Density Real	Relative Density Ideal
0.9748	0.9748

Molecular Weight
28.2351

C6+ Group Properties

Assumed Composition

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

PROTREND STATUS:
Passed By Validator on Jan 2, 2025

DATA SOURCE:
Imported

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

VALIDATOR:
Ashley Russell

VALIDATOR COMMENTS:
OK

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

Operator: CANO PETRO OF NEW MEXICO, INC. 801 Cherry Street Fort Worth, TX 76102	OGRID: 248802
	Action Number: 494568
	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 494568

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QUESTIONS

Prerequisites	
[OGRID] Well Operator	**[248802] CANO PETRO OF NEW MEXICO, INC.**
[API] Well Name and Number	**[30-005-20068] CATO SAN ANDRES UNIT #109**
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	12/17/2024
Latitude	33.618000001
Longitude	-103.8612061

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)	46.3
Average flow temperature in degrees Celsius (°C)	8.3
Average gauge flow pressure in kilopascals (kPag)	18.2
Methane concentration in part per million (ppm)	12,420
Methane emission rate in grams per hour (g/hr)	0.00
Testing Method	Steady State

Monitoring Contractor *Please answer all the questions in this group.*	
Name of monitoring contractor	Well Done New Mexico LLC