



## Pre Plugging Methane Quantification Test Report

Report Prepared By Curtis Shuck

**Start Date:** Sun Mar 05 2023 20:28:29 GMT+0000  
 (Coordinated Universal Time)  
**End Date:** Mon Mar 06 2023 18:27:21 GMT+0000  
 (Coordinated Universal Time)  
**Test Time Subset:** 2023-03-05T20:28:29.000Z -  
 2023-03-06T18:24:35.024Z  
**Device:** VB100-0040  
**Well Licensee:** 30-005-20082  
**Well Name:** Cato San Andres 135  
**UWI:** 30-005-20082  
**Well License Number:** 30-005-20082  
**Surface Location:** State of NM  
**Bottom Hole Location:** Unknown  
**Test Operator:** Sean O. Jacobson  
**Authorized By:** State of NM  
**Test Reason:** IIJA Pre Plugging  
**Scope Of Work:** 12 Hour  
**AFE Number:** 52100-00000073108  
**GPS:** 33.60717,-103.86136  
**Notes:** GTG

### Orphan Well Flow Test Results

Average Flowrate	Average Flow Temperature	Average Flow Pressure	Flow Duration	Methane Concentration	Methane Emissions	Benzene
<b>247.6084</b> scf/hr	<b>58.19</b> °F	<b>0.1107</b> psi	<b>1316.1</b> min	<b>null</b> %	<b>null</b> g/hr	<b>N/A</b> ppm

Annual Emission Rate =  $(\bar{Q}_{measured}) \times (Conc_{measured}) \times p \times 0.454 \times 8,760$

#### Methane Calculation:

$(\bar{Q}_{measured})$  247.6084 scf/hr x  $(Conc_{measured})$  null = null scf CH<sub>4</sub>/hr

Methane Flow x  $(p)$  x .0423 x .454 x 8,760 = null CH<sub>4</sub> kg/yr Emission Rate

#### Where:

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

$Conc_{measured}$  - methane concentration measured

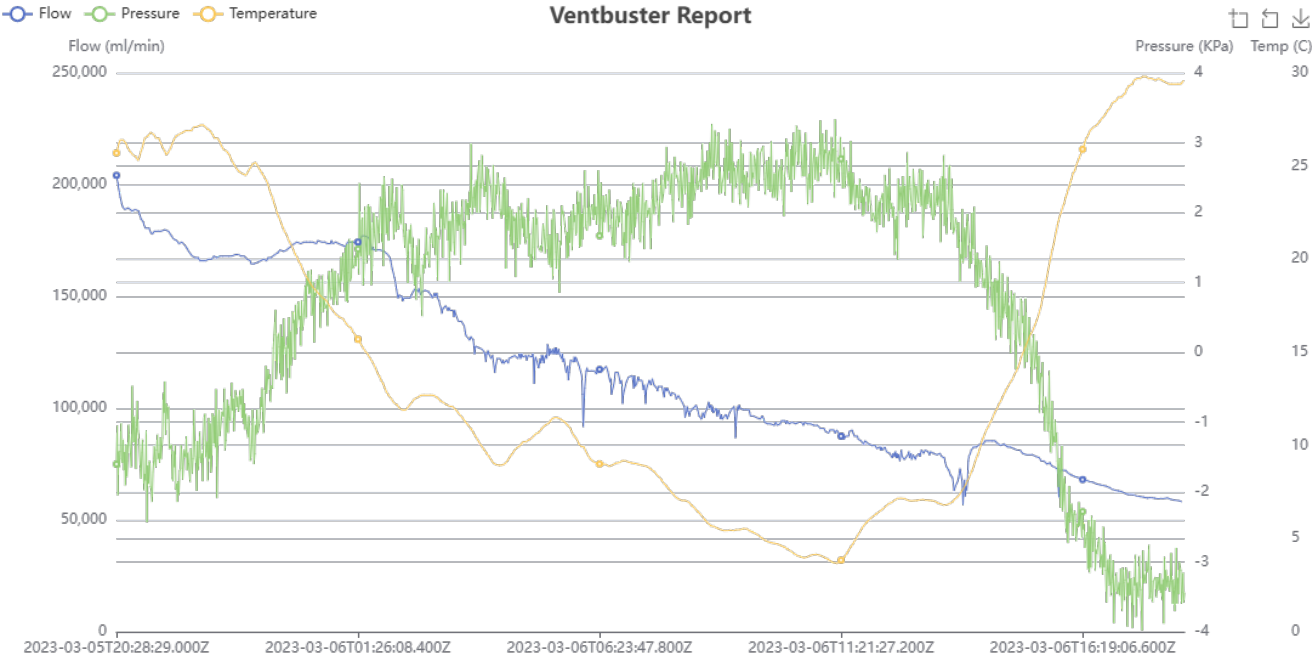
$p$  - 0.0423 methane density at 1 atm; 60° F

0.454 - Conversion from lb to kg

8760 - Conversion from hr to yr

# Flow/Pressure/Temperature Timeseries

Ventbuster Report



## Site Photos



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

## C6+ Gas Analysis Report

15894G	CSA #135	CSA #135	
Sample Point Code	Sample Point Name	Sample Point Location	
Laboratory Services	2023065056	Tedlar Bag	SOJ - Spot
Source Laboratory	Lab File No	Container Identity	Sampler
USA	USA	USA	New Mexico
District	Area Name	Field Name	Facility Name
Mar 2, 2023 10:46	Mar 2, 2023 10:46	Mar 3, 2023 08:37	Mar 6, 2023
Date Sampled	Date Effective	Date Received	Date Reported
Ambient Temp (°F)	Flow Rate (Mcf)	Luis	Press PSI @ Temp °F
		Analyst	Source Conditions
Well Done Foundation	NG		
Operator	Lab Source Description		

Component	Normalized Mol %	Un-Normalized Mol %	GPM
H2S (H2S)	0.0000	0	
Nitrogen (N2)	42.0280	42.01343	
CO2 (CO2)	5.6240	5.62163	
Methane (C1)	43.7180	43.70282	
Ethane (C2)	4.3460	4.34459	1.1620
Propane (C3)	2.4300	2.42963	0.6690
I-Butane (IC4)	0.2900	0.28963	0.0950
N-Butane (NC4)	0.6570	0.6563	0.2070
I-Pentane (IC5)	0.1750	0.17497	0.0640
N-Pentane (NC5)	0.2150	0.21504	0.0780
Hexanes Plus (C6+)	0.5170	0.51659	0.2240
TOTAL	100.0000	99.9646	2.4990

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:	Feb 13, 2023

Source	Date	Notes
Brooke Rush	Mar 7, 2023 2:24 pm	Methane = 437,180 PPM

Gross Heating Values (Real, BTU/ft³)			
14.696 PSI @ 60.00 Å°F		14.73 PSI @ 60.00 Å°F	
Dry	Saturated	Dry	Saturated
654.9	644.6	656.4	646.1

Calculated Total Sample Properties	
GPA2145-16 *Calculated at Contract Conditions	
Relative Density Real	Relative Density Ideal
0.8629	0.8617
Molecular Weight	
24.9539	

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

Field H2S
1 PPM

**PROTREND STATUS:** Passed By Validator on Mar 7, 2023  
**DATA SOURCE:** Imported

**PASSED BY VALIDATOR REASON:**  
Close enough to be considered reasonable.

**VALIDATOR:**  
Brooke Rush  
**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

Action 494551

DEFINITIONS

Operator:  CANO PETRO OF NEW MEXICO, INC. 801 Cherry Street Fort Worth, TX 76102	OGRID:  248802
	Action Number:  494551
	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**

<b>Prerequisites</b>	
[OGRID] Well Operator	[248802] CANO PETRO OF NEW MEXICO, INC.
[API] Well Name and Number	[30-005-20082] CATO SAN ANDRES UNIT #135
Well Status	Reclamation Fund Approved

<b>Monitoring Event Information</b>	
<i>Please answer all the questions in this group.</i>	
Reason For Filing	Pre-Plug Methane Monitoring
Date of monitoring	03/05/2023
Latitude	33.6071167
Longitude	-103.8614197

<b>Monitoring Event Details</b>	
<i>Please answer all the questions in this group.</i>	
Flow rate in cubic meters per day (m <sup>3</sup> /day)	168.29
Test duration in hours (hr)	21.9
Average flow temperature in degrees Celsius (°C)	14.4
Average gauge flow pressure in kilopascals (kPag)	0.1
Methane concentration in part per million (ppm)	437,180
Methane emission rate in grams per hour (g/hr)	2,092.25
Testing Method	Steady State

<b>Monitoring Contractor</b>	
<i>Please answer all the questions in this group.</i>	
Name of monitoring contractor	Well Done New Mexico LLC