Orphan Well Pre Plugging Methane Quantification Report

Start Date: Fri Feb 24 2023 23:30:49 GMT+0000 (Coordinated Universal Time)
End Date: Sat Feb 25 2023 20:13:33 GMT+0000 (Coordinated Universal Time)
Device: VB100-0020
Well Licensee: 30-005-27986
Well Name: Cato San Andres 544
UWI: 30-005-27986
Well License Number: 30-005-27986
Surface Location: State of NM
Bottom Hole Location: Unknown

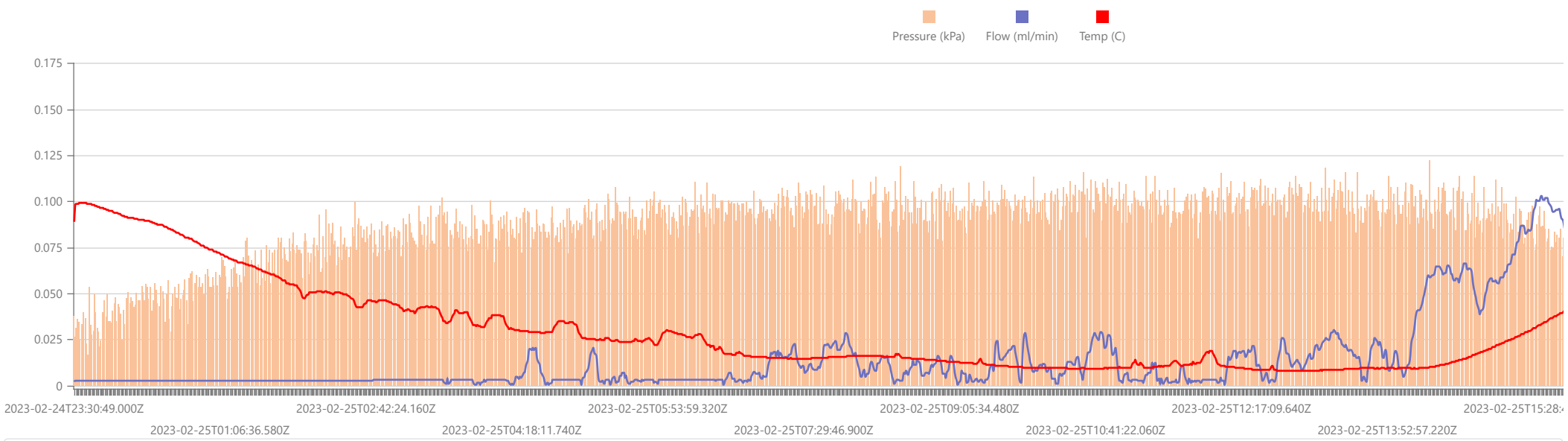
Test Operator: Sean O. Jacobson
Authorized By: State of NM
Test Reason: IIJA Pre Plugging
Scope Of Work: 12 Hour
AFE Number: 52100-00000073108
GPS: 33.63068,-103.85880
Notes: GTG
Prepared By: Curtis Shuck, QMS

Flow / Pressure Test

Flow Duration	Average Flowrate	Average Pressure	Average Flow Temperature	Average CH4 Mass
20 hrs 41 minutes	0.0296	3.1210	8.0701	0.01 g/hr
Duration	m3/d	kPag	°C	**CH4 Concentration**
				9,770 ppm

Methane Calculation: 717 grams CH4 per cubic meter (717 g/m^3 x 0.0296 m^3/day = 21.22 g/day total /24 = 0.88 g/hour x 0.00977 (methane concentration) = **0.01 g/hour CH4**). **Methane, gas** weighs 0.000717 *gram per cubic centimeter* or 0.717 *kilgram per cubic meter*, i.e. density of *methane, gas* is equal to 0.717 kg/m^3; at 0°C (32°F or 273.15K) at standard atmospheric pressure. In imperial or US customary measurement system, the density is equal to 0.0448 *pound per cubic foot* [lb/ft^3], or 0.0004144 *ounce per cubic inch* [oz/$inch^3$].

Flow / Pressure / Temperature Timeseries



#	Date	Note
1	2023-02-25	Arrived 1:12pm 2/25/2023. Rigged down flow test.
2	2023-02-24	Arrived 4:02pm 2/24/2023. Rigged up Ventbuster #20 for flow testing.

Weather in Roswell, February 24

Weather Forecast for February 24 in Roswell, New Mexico - temperature, wind, atmospheric pressure, humidity and precipitations. Detailed hourly weather chart.

February 22 | February 23 | Select date: | February 25 | February 26

February 24, 2023

	Atmospheric conditions and temperature °F	RealFeel °F	Atmospheric pressure inHg	Wind speed mph	Humidity
Night	+41°	+37°	26.4	S 7.6	45%
Morning	+30°	+25°	26.4	E 5.8	57%
Day	+57°	+57°	26.5	SE 9.8	30%
Evening	+48°	+46°	26.4	S 6	35%

Weather in Roswell, February 25

Weather Forecast for February 25 in Roswell, New Mexico - temperature, wind, atmospheric pressure, humidity and precipitations. Detailed hourly weather chart.

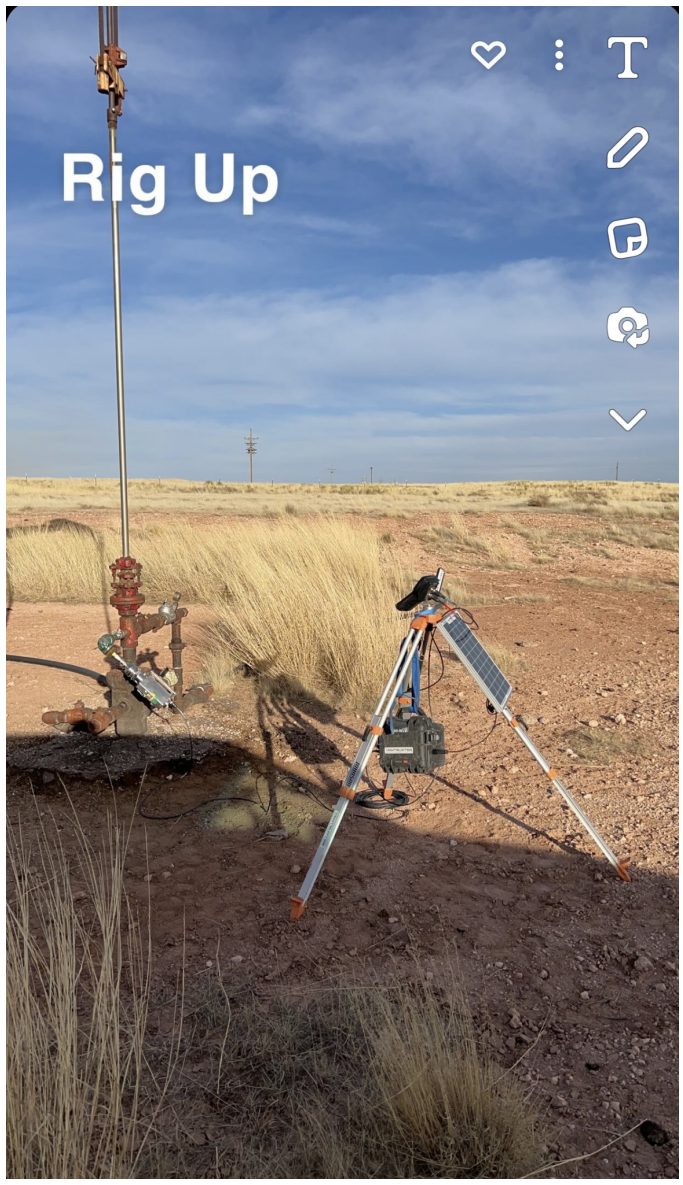
February 23 | February 24 | Select date: | February 26 | February 27

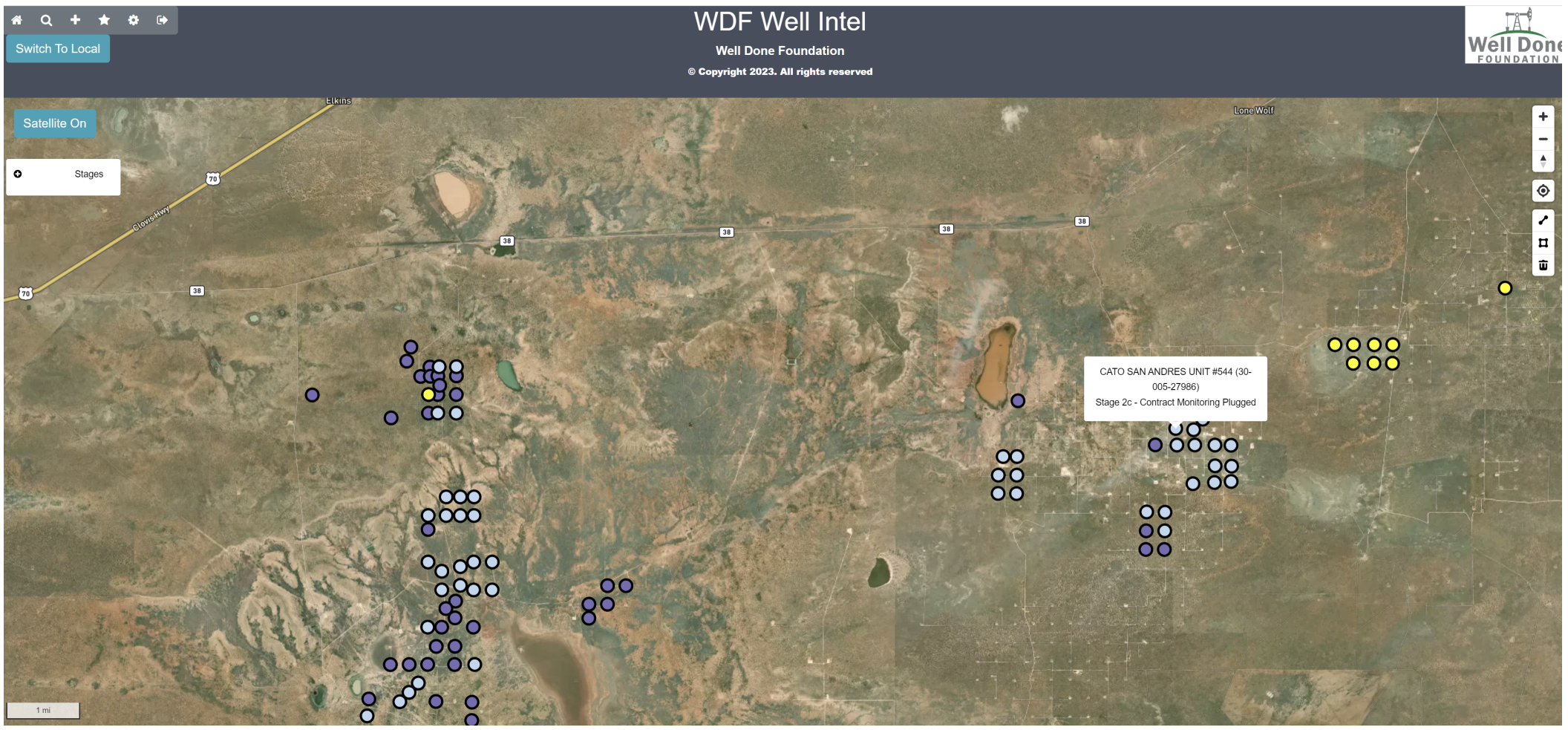
February 25, 2023

	Atmospheric conditions and temperature °F	RealFeel °F	Atmospheric pressure inHg	Wind speed mph	Humidity
Night	+39°	+36°	26.5	S 4.9	58%
Morning	+34°	+30°	26.5	W 4	64%
Day	+59°	+59°	26.5	SE 8.1	54%
Evening	+54°	+54°	26.4	S 6.5	53%


Well Head


Gas Sample
CLOSE
OPEN
ONE FULL TURN ONLY
TEDLAR® BAG
28220306


Rig Up


WDF Well Intel
Well Done Foundation
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Switch To Local
Satellite On
Stages
Clovis Hwy
Elkins
Lone Wolf
CATO SAN ANDRES UNIT #544 (30-005-27986)
Stage 2c - Contract Monitoring Plugged
1 mi

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

C6+ Gas Analysis Report

16101G	CSAU #544 Pre Plug	CSA #544
Sample Point Code	Sample Point Name	Sample Point Location

Laboratory Services	2023064664	Tedlar Bag	S.O. Jacobson - Spot
Source Laboratory	Lab File No	Container Identity	Sampler

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

Feb 24, 2023 16:10	Feb 24, 2023 16:10	Feb 27, 2023 10:58	Mar 1, 2023
Date Sampled	Date Effective	Date Received	Date Reported

		Luis	
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)	93.8960	93.89588	
CO2 (CO2)	1.5790	1.57943	
Methane (C1)	0.9770	0.97699	
Ethane (C2)	0.8190	0.81884	0.2190
Propane (C3)	1.2440	1.2436	0.3430
I-Butane (IC4)	0.2070	0.20683	0.0680
N-Butane (NC4)	0.4820	0.48236	0.1520
I-Pentane (IC5)	0.1390	0.1387	0.0510
N-Pentane (NC5)	0.1150	0.11538	0.0420
Hexanes Plus (C6+)	0.5420	0.542	0.2350
TOTAL	100.0000	100.0000	1.1100

Method(s): Gas C6+ - GPA 2261, Extended Gas - GPA 2286, Calculations - GPA 2172

Gross Heating Values (Real, BTU/ft³)

14.696 PSI @ 60.00 Â°F		14.73 PSI @ 60.00 Â°F	
Dry	Saturated	Dry	Saturated
116.5	115.3	116.8	115.6

Calculated Total Sample Properties

GPA2145-16 *Calculated at Contract Conditions

Relative Density Real	Relative Density Ideal
1.0029	1.0027

Molecular Weight: 29.0387

C6+ Group Properties

Assumed Composition: C6 - 60.000% C7 - 30.000% C8 - 10.000%

Field H2S: 0 PPM

PROTREND STATUS: Passed By Validator on Mar 3, 2023

DATA SOURCE: Imported

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

VALIDATOR: Luis Cano

VALIDATOR COMMENTS: OK

Analyzer Information

Device Type:	Gas Chromatograph	Device Make:	Shimadzu
Device Model:	GC-2014	Last Cal Date:	Feb 13, 2023

Source	Date	Notes
Luis Cano	Mar 3, 2023 7:26 am	Methane: 9,770 PPM

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: CANO PETRO OF NEW MEXICO, INC. 801 Cherry Street Fort Worth, TX 76102	OGRID: 248802
	Action Number: 278356
	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 278356

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	Action Number: 278356
	Action Type: [UF-OMA] Pre-Plug Methane Monitoring (UF-OMA-MMA)

QUESTIONS

Prerequisites	
[OGRID] Well Operator	**[248802] CANO PETRO OF NEW MEXICO, INC.**
[API] Well Name and Number	**[30-005-27986] CATO SAN ANDRES UNIT #544**
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	02/24/2023
Latitude	33.63068
Longitude	-103.85880

Monitoring Event Details *Please answer all the questions in this group.*	
Flow rate in cubic meters per day (m^3/day)	0.03
Test duration in hours (hr)	20.7
Average flow temperature in degrees Celsius (°C)	8.0
Average gauge flow pressure in kilopascals (kPag)	3.1
Methane concentration in part per million (ppm)	9,770
Methane emission rate in grams per hour (g/hr)	0.01
Testing Method	Steady State

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