



Orphan Well Pre Plugging Methane Quantification Report

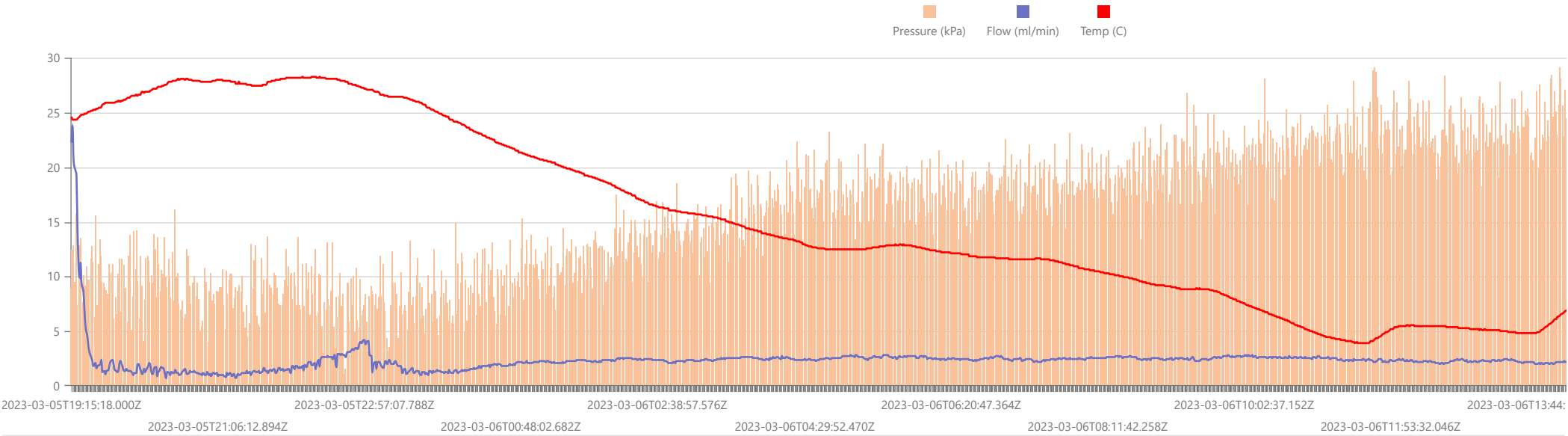
Start Date: Sun Mar 05 2023 19:15:18 GMT+0000 (Coordinated Universal Time) End Date: Mon Mar 06 2023 19:14:12 GMT+0000 (Coordinated Universal Time) Device: VB100-0044 Well Licensee: 30-005-29027 Well Name: Cato San Andres 588 UWI: 30-005-29027 Well License Number: 30-005-29027 Surface Location: State 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: 33.62043,-103.84573 Notes: GTG Prepared By: Curtis Shuck, QMS
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Flow / Pressure Test

Flow Duration 23 hrs 56 minutes <small>Duration</small>	Average Flowrate 2.2454 <small>m3/d</small>	Average Pressure 3.2114 <small>kPag</small>	Average Flow Temperature 16.5518 <small>°C</small>	Average CH4 Mass 7.56 g/hr Average CH4 Mass 122,760 ppm
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Methane Calculation: 717 grams CH4 per cubic meter (717 g/m³ x 2.2454 m³/day = 1609.95 g/day total /24 = 67.08 g/hour x 0.11276 (methane concentration) = **7.56 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/m³; 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/ft³], or 0.0004144 *ounce per cubic inch* [oz/inch³].





Flow / Pressure / Temperature Timeseries



#	Date	Note
1	2023-03-06	Rigged down flow test.
2	2023-03-05	Arrived 12:00pm 3/5/2023. Rigged up flow test. SP VB #44
3	2023-03-03	Arrived 10:37am 3/3/2023. Rigged down flow test.
4	2023-03-02	Arrived 12:09pm 3/2/2023. Rigged up Ventbuster #44 for flow testing.





Weather in Roswell, March 5

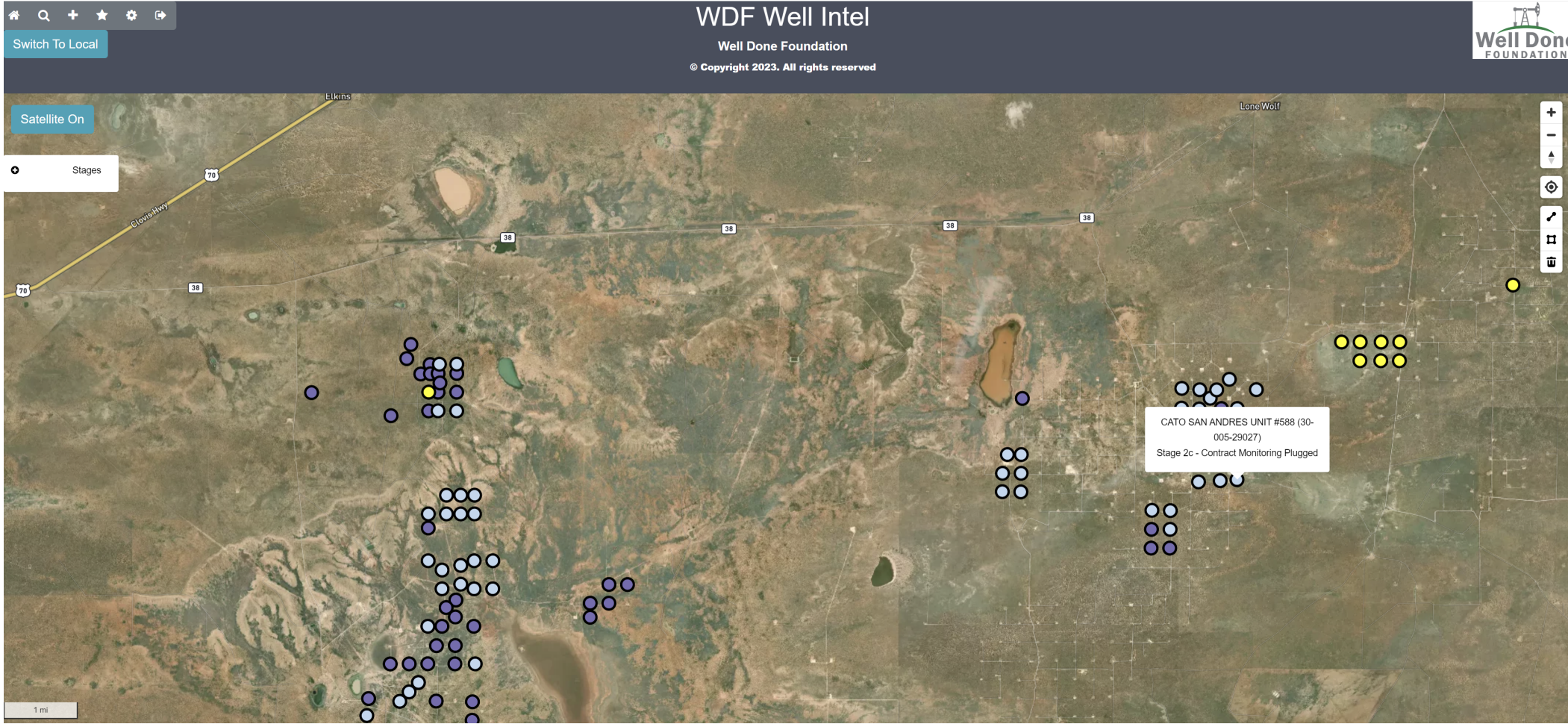
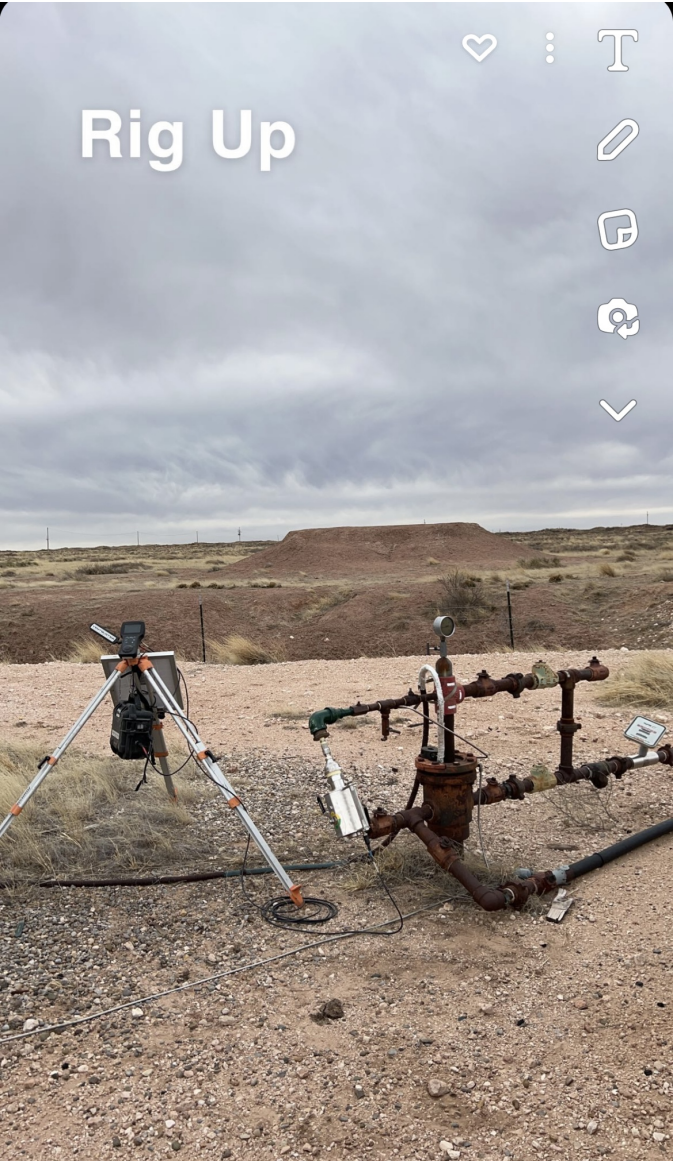
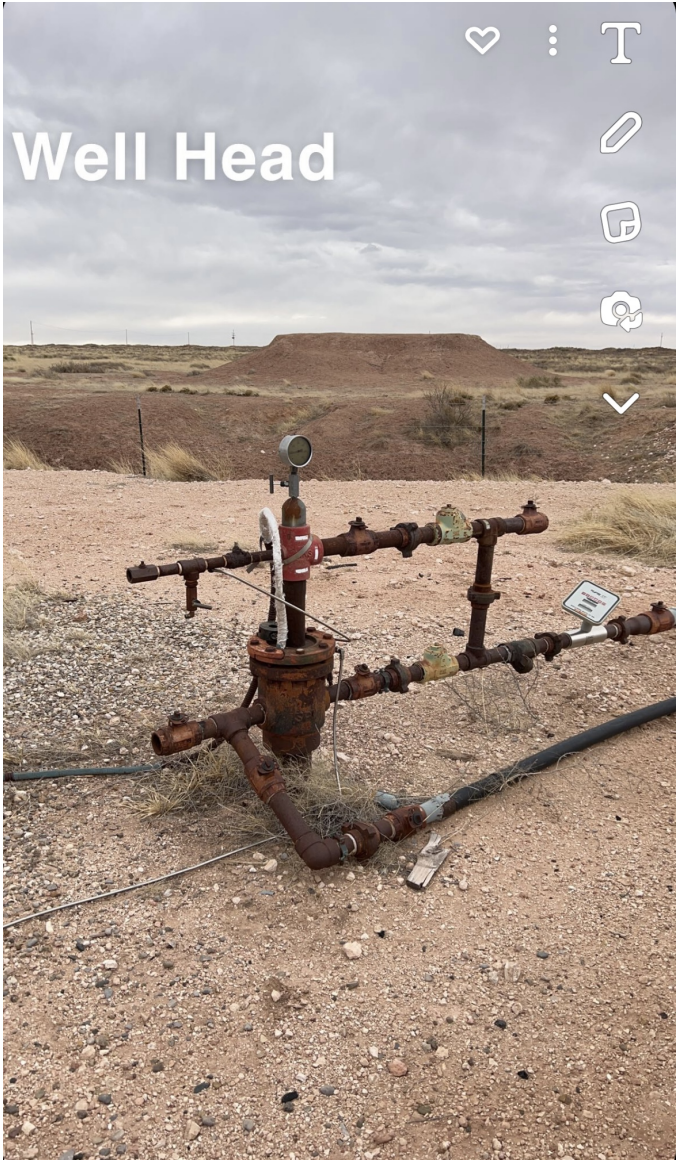
Weather Forecast for March 5 in Roswell, New Mexico - temperature, wind, atmospheric pressure, humidity and precipitations. Detailed hourly weather chart.

March 03	March 04	Select date: 📅	March 06	March 07	
March 05, 2023					
	Atmospheric conditions and temperature °F	RealFeel °F	Atmospheric pressure inHg	Wind speed mph	Humidity
Night	 +43°	+39°	26.2	↙ SW 4.9	21%
Morning	 +39°	+34°	26.2	⬆️ S 7.8	30%
Day	 +77°	+77°	26.3	↙ SW 14.3	7%
Evening	 +64°	+64°	26.3	➤ W 9.6	9%

Weather in Roswell, March 6

Weather Forecast for March 6 in Roswell, New Mexico - temperature, wind, atmospheric pressure, humidity and precipitations. Detailed hourly weather chart.

March 04	March 05	Select date: 📅	March 07	March 08	
March 06, 2023					
	Atmospheric conditions and temperature °F	RealFeel °F	Atmospheric pressure inHg	Wind speed mph	Humidity
Night	 +54°	+54°	26.3	⬆️ S 4.9	17%
Morning	 +48°	+48°	26.3	↙ SW 2.9	27%
Day	 +73°	+73°	26.4	↘️ SE 6.7	8%
Evening	 +66°	+66°	26.3	➡️ W 9.2	8%





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

C6+ Gas Analysis Report

16164G	CSAU #588 Pre Plug	CSA #588	
Sample Point Code	Sample Point Name	Sample Point Location	
Laboratory Services	2023065060	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 12:14	Mar 2, 2023 12:14	Mar 3, 2023 08:46	Mar 6, 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)	61.3250	61.302	
CO2 (CO2)	3.8450	3.844	
Methane (C1)	12.2760	12.272	
Ethane (C2)	7.5920	7.589	2.0300
Propane (C3)	9.9120	9.909	2.7300
I-Butane (IC4)	1.3980	1.398	0.4570
N-Butane (NC4)	2.3080	2.307	0.7270
I-Pentane (IC5)	0.5220	0.522	0.1910
N-Pentane (NC5)	0.3150	0.315	0.1140
Hexanes Plus (C6+)	0.5070	0.507	0.2200
TOTAL	100.0000	99.9650	6.4690

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

Gross Heating Values (Real, BTU/ft³)			
14.696 PSI @ 60.00 Å°F	14.73 PSI @ 60.00 Å°F		
Dry	Saturated	Dry	Saturated
690.4	679.6	692.000	681.2

Calculated Total Sample Properties	
GPA2145-16 *Calculated at Contract Conditions	
Relative Density Real	Relative Density Ideal
1.0628	1.0607
Molecular Weight	
30.7247	

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

Source	Date	Notes
Brooke Rush	Mar 7, 2023 2:33 pm	Methane = 122,760 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

Action 278365

DEFINITIONS

Operator: CANO PETRO OF NEW MEXICO, INC. 801 Cherry Street Fort Worth, TX 76102	OGRID: 248802
	Action Number: 278365
	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 278365

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	Action Number: 278365
	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	[30-005-29027] CATO SAN ANDRES UNIT #588
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	03/05/2023
Latitude	33.62043
Longitude	-103.84573

Monitoring Event Details

Please answer all the questions in this group.

Flow rate in cubic meters per day (m³/day)	2.24
Test duration in hours (hr)	23.9
Average flow temperature in degrees Celsius (°C)	16.5
Average gauge flow pressure in kilopascals (kPag)	3.2
Methane concentration in part per million (ppm)	122,760
Methane emission rate in grams per hour (g/hr)	7.56
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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