Well Done NEW MEXICO LLC

P.O. Box 10640 Bozeman, Montana 59719 (406) 460-0903

TO: Jim Griswold, NMOCD

FROM: Curtis Shuck, Chairman

DATE: April 24, 2023

RE: O'Brien Fee 25 #005 (30-005-60655) Orphan Well Post-Plugging Methane Monitoring

TECHNICAL MEMORANDUM

Well Done New Mexico LLC and the Well Done Foundation, Inc. (WDF) performing contract professional services methane monitoring for the State of New Mexico Energy, Minerals and Natural Resources Department – Oil Conservation Division (OCD) under Purchase Order #52100-00000073985 for Orphan Oil & Gas Wells in Chaves County, NM.

The site conditions found at the O'Brien Fee 25 #005 by the WDF Measure 1 Field Team on March 31, 2023, revealed a cement-plugged orphan well, filled to within 6'-5" of the top of the casing. The WDF Measure 1 Team took site photographs, performed field gas measurements, and collected a gas sample for immediate laboratory analysis.

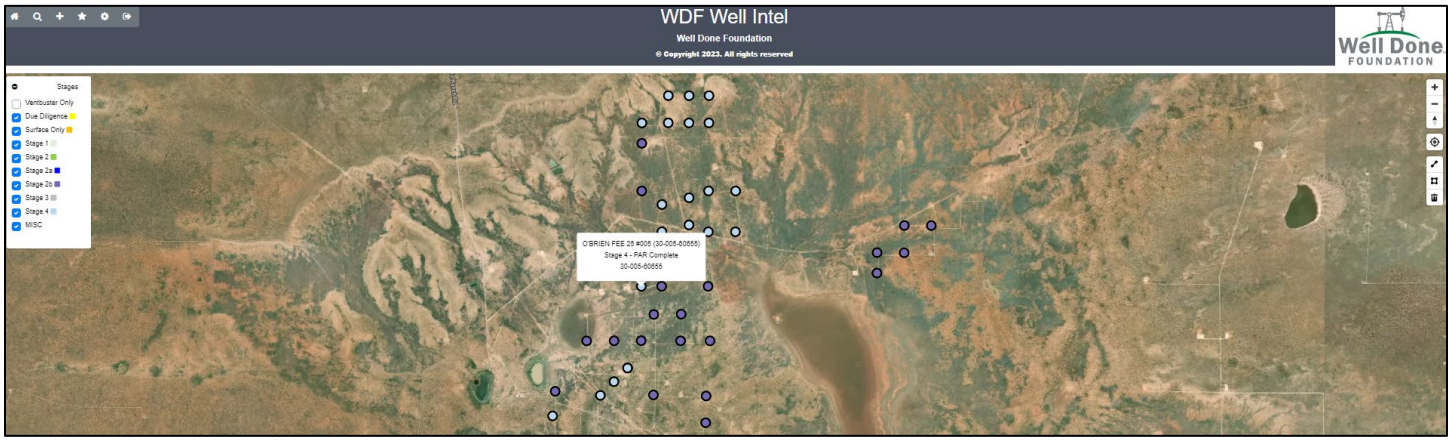


Image 1.1 – O'Brien Fee 25 #005 (30-005-60655) Orphan Well in Chaves County, NM

The Pre-Plugging Methane Flow Monitoring Test on February 22, 2023, using Ventbuster™ Instruments VB100-040 Ultra-Low Flow Meter with GPS, resulted in 0.01 cubic meters per day of total measured wellhead emissions. A composite gas sample collected at the wellhead by WDF during the flow test established a methane gas concentration level measured at 44,050 ppm, pursuant to Test ID 202306456 performed by Laboratory Services of Hobbs, NM. Therefore, the adjusted average methane gas emission measured at this wellhead is calculated at **0.01 grams per hour (g/hour)**.[1]

The State of New Mexico used the methane flow data collected by WDF to prioritize the O'Brien Fee 25 #005 orphan well plugging under the IIJA Program and began mobilizing a contractor to the location. J A Drake Well Service, Inc. of Farmington, NM was awarded the plugging contract.

WDF arrived at the O'Brien Deming 6 #002 location on March 18, 2023, to perform post-plugging orphan well methane testing and sampling on behalf of the State of New Mexico. **WDF post-plugging field gas tests revealed 0.00% of methane or H2S gasses. The post-plugging collected gas sample, analyzed by Laboratory Services, Inc. confirmed 0.00 ppm of methane gas and 0.00 ppm of H2s gas. THEREFORE, the total Methane Gas Emissions Reduction is: 0.01 g/hour.**

[1] Methane Calculation: 717 grams CH4 per cubic meter (717 x 0.01 m3/day = 7.17 g/day total /24 = 0.30 g/hour x 0.044050 (methane concentration) = **0.01 g/hour CH4**). **Methane, gas** weighs 0.000717 *gram per cubic centimeter* or 0.717 *kilogram 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 0.044 *pound per cubic foot* [lb/ft^3].

This orphan well did not exceed the >1 g/hour federal program reporting requirements for methane emissions reductions as described in Section 40601 (Orphaned well site plugging, remediation, and restoration) of Title V (Methane Reduction Infrastructure) of the 2021 Bipartisan Infrastructure Law (BIL; Public Law 117-58)[2].

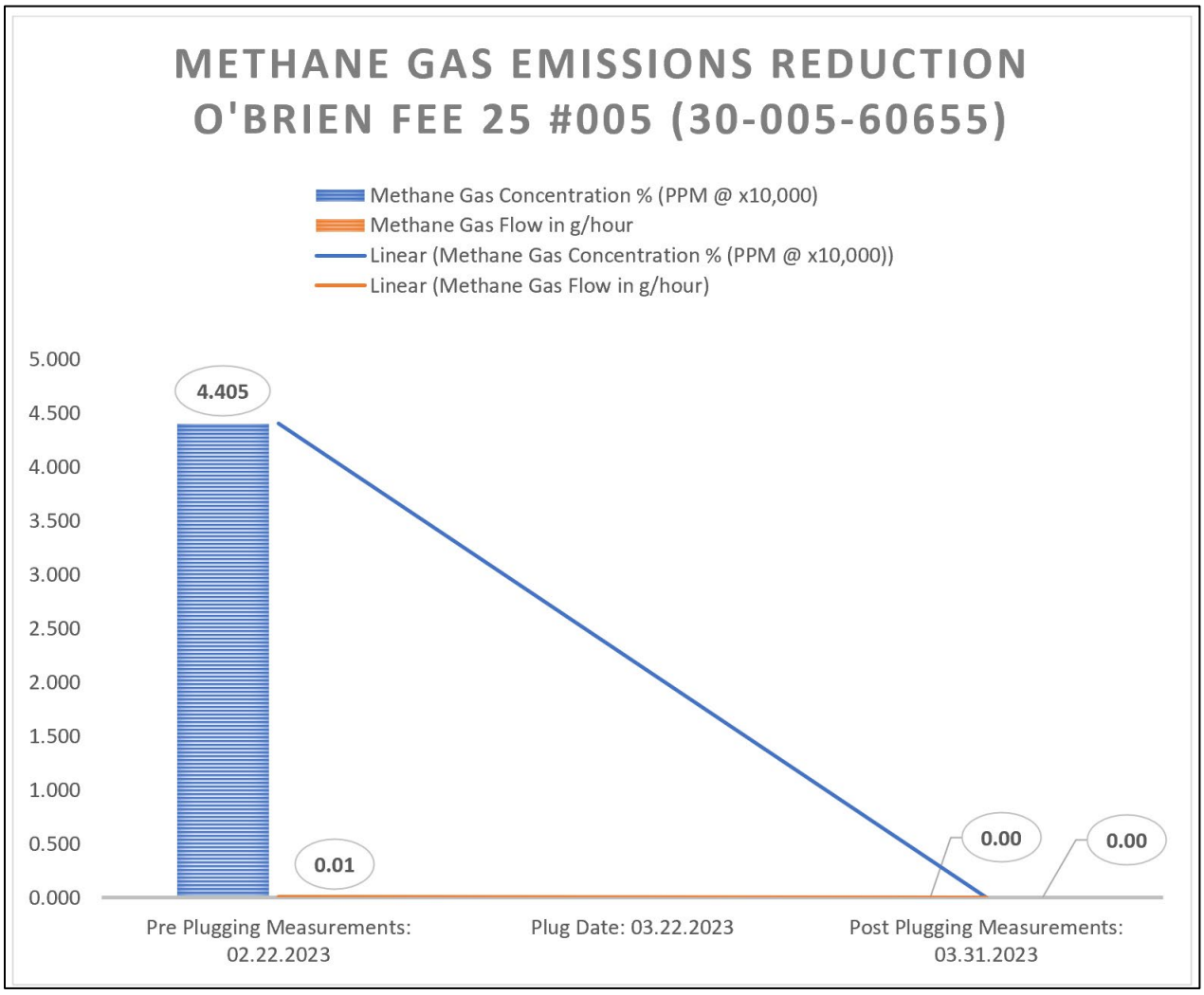


Image 2.1 – O'Brien Fee 25 #005 (30-005-60655) Methane Gas Emissions Reduction Pre-Plugging to Post-Plugging

TECHNICAL FINDINGS

O'Brien Fee 25 #005 (30-005-60655):

- **Total C1 through C6 Gas Concentration: 133,860 ppm**
- **Total Measured Wellhead Gas Emissions: 0.01 m3/day**
- **Methane Gas Concentration: 44,050 ppm**
- **Calculated Average Wellhead Methane Gas Emissions: 0.01 g/hour**
- **Post Plugging Methane Gas Concentration: 0.00 ppm**
- **Post Plugging Methane Flow: 0.00 g/hour**

[2] These April 11, 2022 Guidelines were developed to meet the federal program reporting requirements for methane emissions reductions as described in Section 40601 (Orphaned well site plugging, remediation, and restoration) of Title V (Methane Reduction Infrastructure) of the 2021 Bipartisan Infrastructure Law (BIL; Public Law 117-58).

CONCLUSIONS

- The O'Brien Fee 25 #0005 (30-005-60655) was not emitting Methane gas pre-plugging, at an average rate of 0.01 g/hour, which was below the Federal minimum threshold for reporting described in Section 40601 (Orphaned well site plugging, remediation, and restoration) of Title V (Methane Reduction Infrastructure) of the 2021 Bipartisan Infrastructure Law (BIL; Public Law 117-58) which is >1g/hour.

- Post Plugging, the O'Brien Fee 25 #005 (30-005-60655) presented 0.00 ppm of Methane gas emissions from field gas tests and laboratory analysis of WDF collected gas samples.

FIELD NOTES

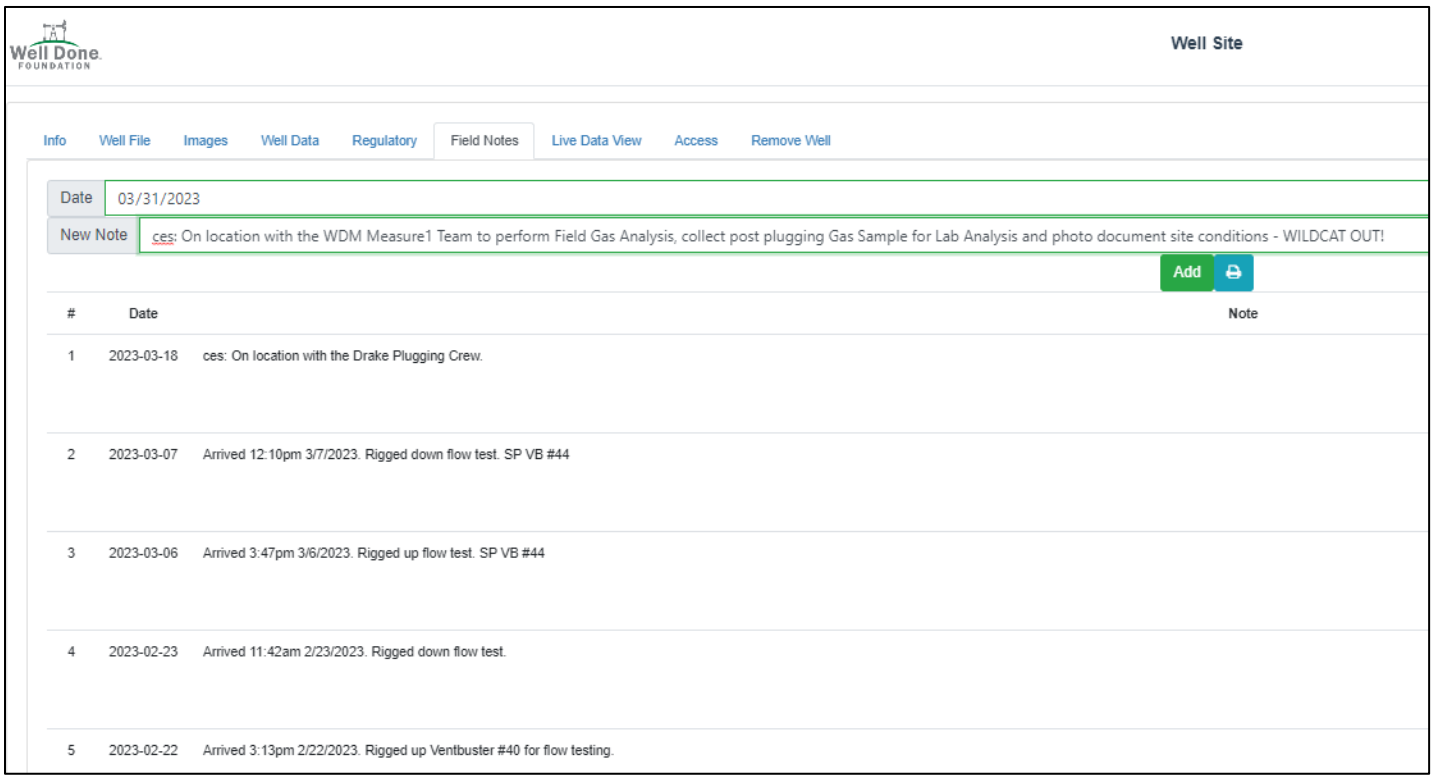


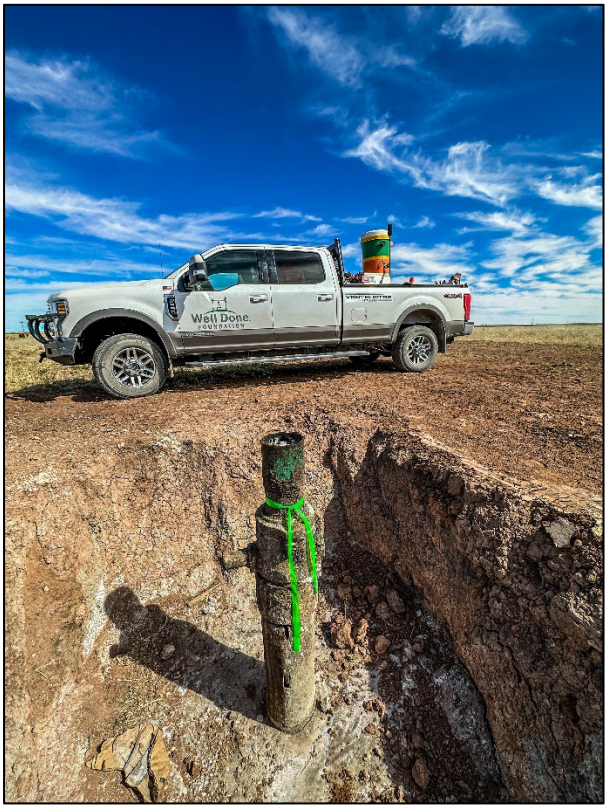
Image 3.1 – O'Brien Fee 25 #005 (30-005-60655) Field Notes from WDF Well Intel™ Orphan Well Project Management IoT

Appendix A – Site Photos for O'Brien Fee 25 #005 (30-005-60655)

1) O'Brien Fee 25 #005 – Locals Get Behind the Good Work

2) O'Brien Fee 25 #005 – Post Plug Cement filled to within -6'-5"

3) O'Brien Fee 25 #005 – Post Plugging Gas Sample



4) O'Brien Fee 25 #005 – Post Plug Green Ribbon

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

C6+ Gas Analysis Report

16093G	OBrien Fee 25 #005	OBrien Fee 25 #005
Sample Point Code	Sample Point Name	Sample Point Location

Laboratory Services	2023066466	Tedlar Bag	CES - Spot
Source Laboratory	Lab File No	Container Identity	Sampler

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

Mar 31, 2023 17:00	Mar 31, 2023 17:00	Apr 3, 2023 13:22	Apr 3, 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)	99.0970	99.09726	
CO2 (CO2)	0.0870	0.08707	
Methane (C1)	0.0000	0	
Ethane (C2)	0.0240	0.02357	0.0060
Propane (C3)	0.0160	0.01614	0.0040
I-Butane (IC4)	0.0000	0	0.0000
N-Butane (NC4)	0.0000	0	0.0000
I-Pentane (IC5)	0.0000	0	0.0000
N-Pentane (NC5)	0.0000	0	0.0000
Hexanes Plus (C6+)	0.7760	0.77596	0.3370
TOTAL	100.0000	100.0000	0.3470

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
40.7	41.00	40.8	41.1

Calculated Total Sample Properties

GPA2145-16 *Calculated at Contract Conditions

Relative Density Real	Relative Density Ideal
0.9852	0.9852

Molecular Weight: 28.5362

C6+ Group Properties

Assumed Composition

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

Field H2S: 0 PPM

PROTREND STATUS:
Passed By Validator on Apr 5, 2023

DATA SOURCE:
Imported

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

VALIDATOR:
Brooke Rush

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
Brooke Rush	Apr 5, 2023 8:46 am	Methane = 0 PPM

Pre Plugging Interval Report

Interval Start Date: Thursday, February 23rd, 2023, 9:42 AM MST
Interval End Date: Thursday, February 23rd, 2023, 11:43 AM MST
Device: VB100-0040
Well Licensee: 30-005-60655
Well Name: OBrien Fee 25 005
UWI: 30-005-60655
Well License Number: 30-005-60655
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: 52100-0000072995
GPS: 33.59188,-104.03415
Notes: GTG

Prepared By: CES

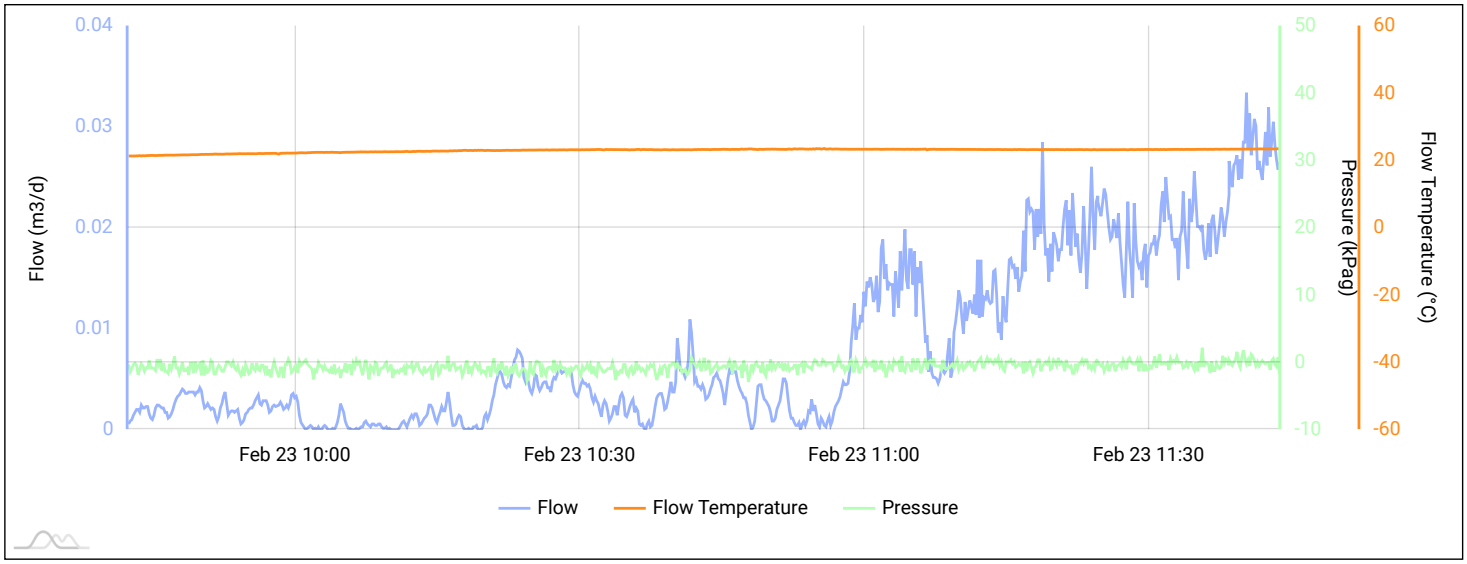
Flow Test

Average Flowrate	Average Flow Temperature	Average Flow Pressure	Flow Duration	Methane Concentration	Methane Emissions
0.01 m3/d	**23.0** °C	**-0.6** kPag	**2.0** hours	**44,050** ppm Total Explosive Gas **133,860** ppm	**0.01** g/hour

Methane Calculations

- [1] Methane Calculation: 717 grams CH4 per cubic meter (717 x 0.01 m3/day = 7.17 g/day total /24 = 0.30 g/hour x 0.044050 (methane concentration) = **0.01 g/hour CH4**). **Methane, gas** weighs 0.000717 *grams per cubic centimeter* or 0.717 *kilograms 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 the Imperial or US customary measurement system, the density is equal to 0.044 *pounds per cubic foot* [lb/ft^3].

Flow/Pressure/Temperature Timeseries



Data Retention Time:

Testing data shall be stored on this web platform for a period of 6-months. It is strongly recommended that the User download and store the electronic PDF reports and CSV Data into their own database, immediately upon viewing.

Ventbuster Instruments Inc. Disclaimer:

The Ventbuster® is a high precision atmospheric vent gas meter. Since it is deployed into testing scenarios and conditions beyond our control, we are not liable for, or make warranties, as to the resultant test information. Any decisions, interpretations, or conclusions made from the test results are the sole responsibility and discretion of the User.

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: CANYON E & P COMPANY 251 O'Connor Ridge Blvd. Irving, TX 75038	OGRID: 269864
	Action Number: 211876
	Action Type: [UF-OMA] Post-Plug Methane Monitoring (UF-OMA-MMB)

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 211876

QUESTIONS

Operator: CANYON E & P COMPANY 251 O'Connor Ridge Blvd. Irving, TX 75038	OGRID: 269864
	Action Number: 211876
	Action Type: [UF-OMA] Post-Plug Methane Monitoring (UF-OMA-MMB)

QUESTIONS

Prerequisites	
[OGRID] Well Operator	**[269864] CANYON E & P COMPANY**
[API] Well Name and Number	**[30-005-60655] O'BRIEN FEE 25 #005**
Well Status	**Plugged (not released)**

Monitoring Event Information *Please answer all the questions in this group.*	
Reason For Filing	**Post-Plug Methane Monitoring**
Date of monitoring	03/31/2023
Latitude	33.59196585
Longitude	-104.0339737

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)	1.0
Average flow temperature in degrees Celsius (°C)	17.2
Average gauge flow pressure in kilopascals (kPag)	0.0
Methane concentration in part per million (ppm)	0
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