



Well Name: ZACHRY 18E; TBG

API #:

Source: TUBING

Sample Type: GAS

Analysis No: MS2021077

Cust No: 53400-11655

### Well/Lease Information

Customer Name: MORNINGSTAR  
 Well Name: ZACHRY 18E; TBG  
 County/State: SAN JUAN NM  
 Location:  
 Lease/PA/CA:  
 Formation:  
 Cust. Stn. No.:  
 14633261

Source: TUBING  
 Well Flowing: Y  
 Pressure: 47 PSIG  
 Flow Temp: 52 DEG. F  
 Ambient Temp: 54 DEG. F  
 Flow Rate: 23 MCF/D  
 Sample Method: Purge & Fill  
 Sample Date: 04/22/2021  
 Sample Time: 8.15 AM  
 Sampled By: JEREMY BARNEY  
 Sampled by (CO): MORNINGSTAR

Heat Trace:

Remarks:

### Analysis

| Component:  | Mole%:   | Unnormalized %: | **GPM:  | *BTU:   | *SP Gravity: |
|-------------|----------|-----------------|---------|---------|--------------|
| Nitrogen    | 0.3975   | 0.3873          | 0.0440  | 0.00    | 0.0038       |
| CO2         | 1.0264   | 1.0000          | 0.1760  | 0.00    | 0.0156       |
| Methane     | 82.0976  | 79.9878         | 13.9620 | 829.19  | 0.4547       |
| Ethane      | 9.0646   | 8.8317          | 2.4320  | 160.42  | 0.0941       |
| Propane     | 4.3153   | 4.2044          | 1.1930  | 108.58  | 0.0657       |
| Iso-Butane  | 0.7203   | 0.7018          | 0.2360  | 23.42   | 0.0145       |
| N-Butane    | 1.1075   | 1.0790          | 0.3500  | 36.13   | 0.0222       |
| I-Pentane   | 0.3067   | 0.2988          | 0.1130  | 12.27   | 0.0076       |
| N-Pentane   | 0.2546   | 0.2481          | 0.0930  | 10.21   | 0.0063       |
| Hexane Plus | 0.7095   | 0.6913          | 0.3170  | 37.40   | 0.0235       |
| Total       | 100.0000 | 97.4302         | 18.9160 | 1217.61 | 0.7081       |

\* @ 14.730 PSIA DRY &amp; UNCORRECTED FOR COMPRESSIBILITY

\*\*@ 14.730 PSIA &amp; 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0034  
 BTU/CU.FT IDEAL: 1220.4  
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1224.6  
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1203.3  
 DRY BTU @ 15.025: 1249.1  
 REAL SPECIFIC GRAVITY: 0.7103

CYLINDER #: 4044  
 CYLINDER PRESSURE: 105 PSIG  
 ANALYSIS DATE: 04/22/2021  
 ANALYSIS TIME: 02:59:09 PM  
 ANALYSIS RUN BY: SHYANN GALLEGOS

GPM, BTU, and SPG calculations as shown above are based on current GPA constants.

GPA Standard: GPA-2261

GC: Danalyzer Model 500 Last Cal/Verify: 04/22/2021

GC Method: C6+ Gas



MORNINGSTAR  
WELL ANALYSIS COMPARISON

Lease: ZACHRY 18E; TBG  
Stn. No.:  
Mtr. No.: 14633261

TUBING

04/22/2021  
53400-11655

Smpl Date: 04/22/2021  
Test Date: 04/22/2021  
Run No: MS2021077

Nitrogen: 0.3975  
CO2: 1.0264  
Methane: 82.0976  
Ethane: 9.0646  
Propane: 4.3153  
I-Butane: 0.7203  
N-Butane: 1.1075  
I-Pentane: 0.3067  
N-Pentane: 0.2546  
Hexane+: 0.7095

BTU: 1224.6  
GPM: 18.9160  
SPG: 0.7103

**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**

CONDITIONS

Action 25363

**CONDITIONS OF APPROVAL**

|              |                           |              |                     |        |        |                |       |              |              |
|--------------|---------------------------|--------------|---------------------|--------|--------|----------------|-------|--------------|--------------|
| Operator:    | MORNINGSTAR OPERATING LLC | 400 W 7th St | Fort Worth, TX76102 | OGRID: | 330132 | Action Number: | 25363 | Action Type: | GAS ANALYSIS |
| OCD Reviewer | Condition                 |              |                     |        |        |                |       |              |              |
| mkuehling    | None                      |              |                     |        |        |                |       |              |              |