



## Certificate of Analysis

Number: 6030-20080273-001A

Artesia Laboratory

200 E Main St.

Artesia, NM 88210

Phone 575-746-3481

Matt Erickson  
Marathon Oil Corporation  
4111 S. Tidwell  
Carlsbad, NM 88220

Sep. 01, 2020

Station Name: Cave Lion 2,6,8,9 Sales Check  
Station Number: 21338SC  
Station Location: Marathon  
Sample Point: RGA  
Type of Sample: Spot-Cylinder  
Heat Trace Used: N/A  
Sampling Method: Fill and Purge  
Sampling Company: SPL  
Analyzed: 09/01/2020 15:09:38 by PGS

Sampled By: Jonah Reza  
Sample Of: Gas Spot  
Sample Date: 08/27/2020 12:02  
Sample Conditions: 90.07 psig, @ 100.06 °F Ambient: 91 °F  
Effective Date: 08/27/2020 12:02  
Method: GPA-2261M  
Cylinder No: 5030-03483  
Instrument: 70104251 (Inficon GC-MicroFusion)  
Last Inst. Cal.: 08/31/2020 0:00 AM

## Analytical Data

| Components       | Un-normalized<br>Mol % | Mol. %    | Wt. %   | GPM at<br>14.65 psia |                |       |
|------------------|------------------------|-----------|---------|----------------------|----------------|-------|
| Hydrogen Sulfide | 0.000                  | 0.00050   | 0.001   |                      | GPM TOTAL C2+  | 8.115 |
| Nitrogen         | 1.607                  | 1.60403   | 1.937   |                      | GPM TOTAL C3+  | 4.020 |
| Methane          | 69.494                 | 69.37815  | 47.983  |                      | GPM TOTAL iC5+ | 0.557 |
| Carbon Dioxide   | 0.183                  | 0.18299   | 0.347   |                      |                |       |
| Ethane           | 15.358                 | 15.33194  | 19.875  | 4.095                |                |       |
| Propane          | 8.840                  | 8.82499   | 16.776  | 2.428                |                |       |
| Iso-butane       | 0.872                  | 0.87025   | 2.181   | 0.284                |                |       |
| n-Butane         | 2.390                  | 2.38632   | 5.979   | 0.751                |                |       |
| Iso-pentane      | 0.416                  | 0.41491   | 1.291   | 0.152                |                |       |
| n-Pentane        | 0.454                  | 0.45344   | 1.410   | 0.164                |                |       |
| Hexanes Plus     | 0.553                  | 0.55248   | 2.220   | 0.241                |                |       |
|                  | 100.167                | 100.00000 | 100.000 | 8.115                |                |       |

## Calculated Physical Properties

|                             |        |        |
|-----------------------------|--------|--------|
| Relative Density Real Gas   | Total  | C6+    |
|                             | 0.8041 | 3.2176 |
| Calculated Molecular Weight | 23.20  | 93.19  |
| Compressibility Factor      | 0.9956 |        |

## GPA 2172 Calculation:

Calculated Gross BTU per ft<sup>3</sup> @ 14.65 psia & 60°F

|                                     |        |        |
|-------------------------------------|--------|--------|
| Real Gas Dry BTU                    | 1365   | 5113   |
| Water Sat. Gas Base BTU             | 1342   | 5024   |
| Ideal, Gross HV - Dry at 14.65 psia | 1359.1 | 5113.2 |
| Ideal, Gross HV - Wet               | 1335.3 | 5023.7 |

**Comments:** H2S Field Content 5 ppm  
Mcf/day 1240.599

Hydrocarbon Laboratory Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.

|                                     |           |
|-------------------------------------|-----------|
| Flaring/Venting Event Volume (MCF): | 208.27    |
| Flare or vent:                      | Flare     |
| Date:                               | 8/24/2022 |
| Time discovered:                    | 12:17 AM  |
| Time terminated:                    | 7:55 PM   |
| Total Duration (hrs):               | 7:25      |

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**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

DEFINITIONS

Action 138481

DEFINITIONS

|                                                                                        |                                                        |
|----------------------------------------------------------------------------------------|--------------------------------------------------------|
| Operator:<br>MARATHON OIL PERMIAN LLC<br>990 Town & Country Blvd.<br>Houston, TX 77024 | OGRID:<br>372098                                       |
|                                                                                        | Action Number:<br>138481                               |
|                                                                                        | Action Type:<br>[C-129] Venting and/or Flaring (C-129) |

DEFINITIONS

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| For the sake of brevity and completeness, please allow for the following in all groups of questions and for the rest of this application: <ul style="list-style-type: none"><li>• this application's operator, hereinafter "this operator";</li><li>• venting and/or flaring, hereinafter "vent or flare";</li><li>• any notification or report(s) of the C-129 form family, hereinafter "any C-129 forms";</li><li>• the statements in (and/or attached to) this, hereinafter "the statements in this";</li><li>• and the past tense will be used in lieu of mixed past/present tense questions and statements.</li></ul> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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QUESTIONS

Action 138481

**QUESTIONS**

|                                                                                        |                                                        |
|----------------------------------------------------------------------------------------|--------------------------------------------------------|
| Operator:<br>MARATHON OIL PERMIAN LLC<br>990 Town & Country Blvd.<br>Houston, TX 77024 | OGRID:<br>372098                                       |
|                                                                                        | Action Number:<br>138481                               |
|                                                                                        | Action Type:<br>[C-129] Venting and/or Flaring (C-129) |

**QUESTIONS**

|                                                                                                                                                                           |                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| <b>Prerequisites</b>                                                                                                                                                      |                                          |
| <i>Any messages presented in this section, will prevent submission of this application. Please resolve these issues before continuing with the rest of the questions.</i> |                                          |
| Incident Well                                                                                                                                                             | Not answered.                            |
| Incident Facility                                                                                                                                                         | [fAPP2126037448] CAVE LION 5 FED 2689 TB |

|                                                                                                                                                                                                                                                                                            |                                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| <b>Determination of Reporting Requirements</b>                                                                                                                                                                                                                                             |                                                   |
| <i>Answer all questions that apply. The Reason(s) statements are calculated based on your answers and may provide additional guidance.</i>                                                                                                                                                 |                                                   |
| Was this vent or flare caused by an emergency or malfunction                                                                                                                                                                                                                               | Yes                                               |
| Did this vent or flare last eight hours or more cumulatively within any 24-hour period from a single event                                                                                                                                                                                 | No                                                |
| Is this considered a submission for a vent or flare event                                                                                                                                                                                                                                  | Yes, minor venting and/or flaring of natural gas. |
| <i>An operator shall file a form C-141 instead of a form C-129 for a release that, includes liquid during venting and/or flaring that is or may be a major or minor release under 19.15.29.7 NMAC.</i>                                                                                     |                                                   |
| Was there <b>at least 50 MCF</b> of natural gas vented and/or flared during this event                                                                                                                                                                                                     | Yes                                               |
| Did this vent or flare result in the release of <b>ANY</b> liquids (not fully and/or completely flared) that reached (or has a chance of reaching) the ground, a surface, a watercourse, or otherwise, with reasonable probability, endanger public health, the environment or fresh water | No                                                |
| Was the vent or flare within an incorporated municipal boundary or withing 300 feet from an occupied permanent residence, school, hospital, institution or church in existence                                                                                                             | No                                                |

|                                                           |               |
|-----------------------------------------------------------|---------------|
| <b>Equipment Involved</b>                                 |               |
| Primary Equipment Involved                                | Not answered. |
| Additional details for Equipment Involved. Please specify | Not answered. |

|                                                                                                                                      |               |
|--------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>Representative Compositional Analysis of Vented or Flared Natural Gas</b>                                                         |               |
| <i>Please provide the mole percent for the percentage questions in this group.</i>                                                   |               |
| Methane (CH4) percentage                                                                                                             | 69            |
| Nitrogen (N2) percentage, if greater than one percent                                                                                | 2             |
| Hydrogen Sulfide (H2S) PPM, rounded up                                                                                               | 0             |
| Carbon Dioxide (CO2) percentage, if greater than one percent                                                                         | 0             |
| Oxygen (O2) percentage, if greater than one percent                                                                                  | 0             |
| <i>If you are venting and/or flaring because of Pipeline Specification, please provide the required specifications for each gas.</i> |               |
| Methane (CH4) percentage quality requirement                                                                                         | Not answered. |
| Nitrogen (N2) percentage quality requirement                                                                                         | Not answered. |
| Hydrogen Sulfide (H2S) PPM quality requirement                                                                                       | Not answered. |
| Carbon Dioxide (CO2) percentage quality requirement                                                                                  | Not answered. |
| Oxygen (O2) percentage quality requirement                                                                                           | Not answered. |

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QUESTIONS, Page 2

Action 138481

QUESTIONS (continued)

|                                                                                        |                                                        |
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|                                                                                        | Action Number:<br>138481                               |
|                                                                                        | Action Type:<br>[C-129] Venting and/or Flaring (C-129) |

QUESTIONS

| Date(s) and Time(s)                            |            |
|------------------------------------------------|------------|
| Date vent or flare was discovered or commenced | 08/24/2022 |
| Time vent or flare was discovered or commenced | 12:17 AM   |
| Time vent or flare was terminated              | 07:55 PM   |
| Cumulative hours during this event             | 7          |

| Measured or Estimated Volume of Vented or Flared Natural Gas              |                                                                                                                   |
|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Natural Gas Vented (Mcf) Details                                          | Not answered.                                                                                                     |
| Natural Gas Flared (Mcf) Details                                          | Cause: Equipment Failure   Dump Valve   Natural Gas Flared   Released: 208 Mcf   Recovered: 0 Mcf   Lost: 208 Mcf |
| Other Released Details                                                    | Not answered.                                                                                                     |
| Additional details for Measured or Estimated Volume(s). Please specify    | Not answered.                                                                                                     |
| Is this a gas only submission (i.e. only significant Mcf values reported) | Yes, according to supplied volumes this appears to be a "gas only" report.                                        |

| Venting or Flaring Resulting from Downstream Activity             |               |
|-------------------------------------------------------------------|---------------|
| Was this vent or flare a result of downstream activity            | No            |
| Was notification of downstream activity received by this operator | Not answered. |
| Downstream OGRID that should have notified this operator          | Not answered. |
| Date notified of downstream activity requiring this vent or flare | Not answered. |
| Time notified of downstream activity requiring this vent or flare | Not answered. |

| Steps and Actions to Prevent Waste                                                                                               |                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| For this event, this operator could not have reasonably anticipated the current event and it was beyond this operator's control. | True                                                                                                     |
| Please explain reason for why this event was beyond this operator's control                                                      | Equipment Malfunction                                                                                    |
| Steps taken to limit the duration and magnitude of vent or flare                                                                 | As soon as flaring due to an equipment failure was identified, repairs were made as soon as practicable. |
| Corrective actions taken to eliminate the cause and reoccurrence of vent or flare                                                | As soon as the equipment failure was found, repairs were made.                                           |

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ACKNOWLEDGMENTS

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**ACKNOWLEDGMENTS**

|                                     |                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | I acknowledge that I am authorized to submit a <i>Venting and/or Flaring</i> (C-129) report on behalf of this operator and understand that this report can be a <b>complete</b> C-129 submission per 19.15.27.8 and 19.15.28.8 NMAC.                                                                                      |
| <input checked="" type="checkbox"/> | I acknowledge that upon submitting this application, I will be creating a new incident file (assigned to this operator) to track any C-129 forms, pursuant to 19.15.27.7 and 19.15.28.8 NMAC and understand that this submission meets the notification requirements of Paragraph (1) of Subsection G and F respectively. |
| <input checked="" type="checkbox"/> | I hereby certify the statements in this report are true and correct to the best of my knowledge and acknowledge that any false statement may be subject to civil and criminal penalties under the Oil and Gas Act.                                                                                                        |
| <input checked="" type="checkbox"/> | I acknowledge that the acceptance of any C-129 forms by the OCD does not relieve this operator of liability should their operations have failed to adequately investigate, report, and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment.                       |
| <input checked="" type="checkbox"/> | I acknowledge that OCD acceptance of any C-129 forms does not relieve this operator of responsibility for compliance with any other applicable federal, state, or local laws and/or regulations.                                                                                                                          |

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CONDITIONS

Action 138481

**CONDITIONS**

|                                                                                        |                                                        |
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|                                                                                        | Action Number:<br>138481                               |
|                                                                                        | Action Type:<br>[C-129] Venting and/or Flaring (C-129) |

**CONDITIONS**

| Created By | Condition                                                                                                                                                                          | Condition Date |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| icastro    | If the information provided in this report requires an amendment, submit a [C-129] Amend Venting and/or Flaring Incident (C-129A), utilizing your incident number from this event. | 8/30/2022      |