



Certificate of Analysis

Number: 6030-20120149-002A

Artesia Laboratory

200 E Main St.

Artesia, NM 88210

Phone 575-746-3481

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

Dec. 22, 2020

Station Name: Cass 16 State 2H Production
Station Number: 16817GP
Station Location: Marathon
Sample Point: Meter Run
Type of Sample: Spot-Cylinder
Heat Trace Used: N/A
Sampling Method: Fill and Purge
Sampling Company: SPL
Analyzed: 12/22/2020 12:47:22 by PGS

Sampled By: Jonah Reza
Sample Of: Gas Spot
Sample Date: 12/17/2020
Sample Conditions: 72 psig, @ 57 °F Ambient: 28 °F
Effective Date: 12/17/2020
Method: GPA-2261M
Cylinder No: 5030-02494
Instrument: 6030_GC6 (Inficon GC-3000 Micro)
Last Inst. Cal.: 12/21/2020 0:00 AM

Analytical Data

Components	Un-normalized Mol %	Mol. %	Wt. %	GPM at 14.65 psia		
Nitrogen	1.369	1.36906	1.832		GPM TOTAL C2+	5.615
Methane	78.604	78.61958	60.248		GPM TOTAL C3+	2.566
Carbon Dioxide	0.073	0.07251	0.152		GPM TOTAL iC5+	0.444
Ethane	11.425	11.42731	16.413	3.049		
Propane	5.202	5.20280	10.959	1.430		
Iso-butane	0.645	0.64552	1.792	0.211		
n-Butane	1.529	1.52940	4.246	0.481		
Iso-pentane	0.329	0.32906	1.134	0.120		
n-Pentane	0.357	0.35707	1.231	0.129		
Hexanes Plus	0.448	0.44769	1.993	0.195		
	99.981	100.0000	100.000	5.615		

Calculated Physical Properties

	Total	C6+
Relative Density Real Gas	0.7251	3.2176
Calculated Molecular Weight	20.93	93.19
Compressibility Factor	0.9965	

GPA 2172 Calculation:

Calculated Gross BTU per ft³ @ 14.65 psia & 60°F

Real Gas Dry BTU	1249	5113
Water Sat. Gas Base BTU	1228	5024
Ideal, Gross HV - Dry at 14.65 psia	1244.6	5113.2
Ideal, Gross HV - Wet	1222.8	5023.7

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):	53.91
Flare or vent:	Flare
Date discovered:	7/23/2021
Time discovered:	3:26 PM
Date terminated:	7/23/2021
Time terminated:	4:17 PM
Total Duration (hrs):	1

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

QUESTIONS

Action 40328

QUESTIONS

Operator: MARATHON OIL PERMIAN LLC 5555 San Felipe St. Houston, TX 77056	OGRID: 372098 Action Number: 40328 Action Type: [C-129] Venting and/or Flaring (C-129)
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QUESTIONS**Determination of Reporting Requirements**

Answer all questions that apply. The Reason(s) statements are calculated based on your answers and may provide additional guidance.

Was or is this venting or flaring caused by an emergency or malfunction	Yes
Did or will this venting or flaring last eight hours or more cumulatively within any 24-hour period from a single event	No
Is this considered a submission for a notification of a major venting or flaring	Yes, minor venting or flaring of natural gas.
The operator shall file a form C-141 instead of a form C-129 for a release that includes liquid during venting or flaring that is or may be a major or minor release under 19.13.297 NMAC.	
Was there or will there be at least 50 MCF of natural gas vented or flared during this event	Yes
Did this venting or flaring result in the release of ANY 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

Unregistered Facility Site

Please provide the facility details, if the venting or flaring occurred or is occurring at a facility that does not have an Facility ID (##) yet.

Facility or Site Name	Cass 2H
Facility Type	Not answered.

Equipment Involved

Primary Equipment Involved	Producing Well
Additional details for Equipment Involved. Please specify	high pressure flare

Representative Compositional Analysis of Vented or Flared Natural Gas

Please provide the mole percent for the percentage questions in this group.

Methane (CH4) percentage	79
Nitrogen (N2) percentage, if greater than one percent	1
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
If you are venting and/or flaring because of Pipeline Specification, please provide the required specifications for each gas.	
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.

Date(s) and Time(s)

Date venting or flaring was discovered or commenced	07/23/2021
Time venting or flaring was discovered or commenced	03:26 PM
Is the venting or flaring event complete	Yes
Date venting or flaring was terminated	07/23/2021
Time venting or flaring was terminated	04:17 PM
Total duration of venting or flaring in hours, if venting or flaring has terminated	1
Longest duration of cumulative hours within any 24-hour period during this event	1

Measured or Estimated Volume of Vented or Flared Natural Gas

Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Cause: High Line Pressure Producing Well Natural Gas Flared Spilled: 54 Mcf Recovered: 0 Mcf Lost: 54 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 Mcf values reported)	Yes, according to supplied volumes this appears to be a "gas only" report.

Venting or Flaring Resulting from Downstream Activity

Was or is this venting or flaring a result of downstream activity	Yes
Date notified of downstream activity requiring this venting or flaring	Not answered.
Time notified of downstream activity requiring this venting or flaring	Not answered.

Steps and Actions to Prevent Waste

For this event, the operator could not have reasonably anticipated the current event and it was beyond the operator's control.	True
Please explain reason for why this event was beyond your operator's control	High Line Pressure, no notification was given prior to event
Steps taken to limit the duration and magnitude of venting or flaring	No notification of event was provided, and therefore limiting the duration or magnitude of event was not feasible.
Corrective actions taken to eliminate the cause and reoccurrence of venting or flaring	Increased back pressure relief valve to flare to limit potential flaring during downstream upsets, but still maintain safety at the facility

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CONDITIONS

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	Action Number: 40328
	Action Type: [C-129] Venting and/or Flaring (C-129)

CONDITIONS

Created By	Condition	Condition Date
system	If the information provided in this report requires an amendment, submit a [C-129] Request to Amend Venting and/or Flaring Incident, utilizing your incident number from this event.	8/5/2021