



## Certificate of Analysis

Number: 6030-20110087-001A

Artesia Laboratory

200 E Main St.

Artesia, NM 88210

Phone 575-746-3481

Chandler Montgomery  
Occidental Petroleum  
1502 W Commerce Dr.  
Carlsbad, NM 88220

Nov. 17, 2020

Field: NMSW  
Station Name: Corral Compressor Station 2 South  
Station Number: N/A  
Sample Point: N/A  
Meter Number:  
County: Eddy  
Type of Sample: Spot-Cylinder  
Heat Trace Used: N/A  
Sampling Method: Fill and Purge  
Sampling Company: OXY

Sampled By: Jesus Escobedo  
Sample Of: Gas Spot  
Sample Date: 11/11/2020 01:09  
Sample Conditions: 1265 psig Ambient: 49 °F  
Effective Date: 11/11/2020 01:09  
Method: GPA 2286  
Cylinder No: 1111-001162  
Instrument: 6030\_GC2 (Agilent GC-7890B)  
Last Inst. Cal.: 08/25/2020 8:12 AM  
Analyzed: 11/17/2020 12:40:16 by PGS

## Analytical Data

Components	Un-normalized Mol %	Mol. %	Wt. %	GPM at 14.65 psia		
Hydrogen Sulfide	0.000	0.000	0.000		GPM TOTAL C2+	6.390
Nitrogen	1.332	1.320	1.675		GPM TOTAL C3+	3.359
Methane	76.899	76.201	55.381		GPM TOTAL iC5+	0.805
Carbon Dioxide	0.171	0.169	0.337			
Ethane	11.459	11.355	15.468	3.031		
Propane	5.781	5.728	11.443	1.575		
Iso-butane	0.846	0.838	2.207	0.274		
n-Butane	2.259	2.238	5.893	0.705		
Iso-pentane	0.642	0.636	2.079	0.232		
n-Pentane	0.766	0.759	2.481	0.275		
Hexanes Plus	0.763	0.756	3.036	0.298		
	100.918	100.000	100.000	6.390		

## Calculated Physical Properties

Relative Density Real Gas	Total	C6+
	0.7649	3.0584
Calculated Molecular Weight	22.07	88.58
Compressibility Factor	0.9960	

## GPA 2172 Calculation:

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

Real Gas Dry BTU	1308	4763
Water Sat. Gas Base BTU	1285	4680
Ideal, Gross HV - Dry at 14.65 psia	1302.9	4763.5
Ideal, Gross HV - Wet	1280.1	0.000
Net BTU Dry Gas - real gas	1188	
Net BTU Wet Gas - real gas	1167	

Comments: H2S Field Content 0 ppm

Hydrocarbon Laboratory Manager

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



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Sample Of: Gas Spot  
Sample Date: 11/11/2020 01:09  
Sample Conditions: 1265 psig  
Method: GPA 2286  
Cylinder No: 1111-001162  
Analyzed: 11/17/2020 13:21:28 by PGS  
Sampling Company: OXY

## Analytical Data

Components	Mol. %	Wt. %	GPM at 14.65 psia	
Hydrogen Sulfide	NIL	NIL		GPM TOTAL C2+ 6.390
Nitrogen	1.320	1.675		GPM TOTAL C3+ 3.359
Methane	76.201	55.381		GPM TOTAL iC5+ 0.805
Carbon Dioxide	0.169	0.337		
Ethane	11.355	15.468	3.031	
Propane	5.728	11.443	1.575	
Iso-Butane	0.838	2.207	0.274	
n-Butane	2.238	5.893	0.705	
Iso-Pentane	0.636	2.079	0.232	
n-Pentane	0.759	2.481	0.275	
Hexanes	0.374	1.443	0.152	
Heptanes Plus	0.382	1.593	0.146	
	100.000	100.000	6.390	

## Calculated Physical Properties

Relative Density Real Gas	Total 0.7649	C7+ 3.1738
Calculated Molecular Weight	22.07	91.92
Compressibility Factor	0.9960	

## GPA 2172 Calculation:

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

Real Gas Dry BTU	1308	4850
Water Sat. Gas Base BTU	1285	4766
Ideal, Gross HV - Dry at 14.65 psia	1302.9	4850.4
Ideal, Gross HV - Wet	1280.1	NIL

Comments: H2S Field Content 0 ppm

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Sampling Company: OXY

## Analytical Data

Components	Mol. %	Wt. %	GPM at 14.65 psia	
Hydrogen Sulfide	NIL	NIL		GPM TOTAL C2+ 6.390
Nitrogen	1.320	1.675		
Methane	76.201	55.381		
Carbon Dioxide	0.169	0.337		
Ethane	11.355	15.468	3.031	
Propane	5.728	11.443	1.575	
Iso-Butane	0.838	2.207	0.274	
n-Butane	2.238	5.893	0.705	
Iso-Pentane	0.636	2.079	0.232	
n-Pentane	0.759	2.481	0.275	
i-Hexanes	0.229	0.880	0.092	
n-Hexane	0.145	0.563	0.060	
Benzene	0.036	0.125	0.010	
Cyclohexane	0.091	0.348	0.031	
i-Heptanes	0.135	0.566	0.054	
n-Heptane	0.027	0.125	0.013	
Toluene	0.015	0.065	0.005	
i-Octanes	0.065	0.307	0.029	
n-Octane	0.003	0.015	0.001	
Ethylbenzene	0.001	0.002	NIL	
Xylenes	0.003	0.010	0.001	
i-Nonanes	0.005	0.025	0.002	
n-Nonane	0.001	0.003	NIL	
i-Decanes	NIL	NIL	NIL	
n-Decane	NIL	0.001	NIL	
Undecanes	NIL	0.001	NIL	
Dodecanes	NIL	NIL	NIL	
Tridecanes	NIL	NIL	NIL	
Tetradecanes Plus	NIL	NIL	NIL	
	100.000	100.000	6.390	



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Calculated Physical Properties	Total
Calculated Molecular Weight	22.073
<b>GPA 2172 Calculation:</b>	
<b>Calculated Gross BTU per ft<sup>3</sup> @ 14.65 psia &amp; 60°F</b>	
Real Gas Dry BTU	1308.0
Water Sat. Gas Base BTU	1285.2
Relative Density Real Gas	0.7649
Compressibility Factor	0.9960

**Comments:** H2S Field Content 0 ppm

A handwritten signature in black ink, appearing to read 'Cody Peterson', is written over a horizontal line.

Hydrocarbon Laboratory Manager

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

**UPSET EVENT SPECIFIC JUSTIFICATIONS FORM****Facility:** Corral 2S CS**Date:** 08/08/2021**Duration of event:** 4 Hours**MCF Flared:** 106**Start Time:** 04:30 PM**End Time:** 05:15 PM**Cause:** Compressor Malfunctions**Method of Flared Gas Measurement:** Gas Flare Meter**Well API Associated with Facility:** 30-015-44507 Corral Fly 02 01 State #021H

**Comments:** This upset event was not caused by any wells associated with the facility. This emissions event was caused by the unforeseen, unexpected, sudden, and unavoidable breakdown of equipment or process that was beyond the owner/operator's control, and did not stem from activity that could have been foreseen and avoided, and could not have been avoided or prevented by good design, operation, and preventative maintenance practices.

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**1. Reason why this event was beyond Operator's control:**

This emissions event was caused by the unforeseen, unexpected, sudden, and unavoidable breakdown of equipment or process that was beyond the owner/operator's control, and did not stem from activity that could have been foreseen and avoided, and could not have been avoided or prevented by good design, operation, and preventative maintenance practices. Internal OXY procedures ensure that upon gas compressor unit and/or multiple unit shutdown, due to malfunction and/or alarms, production techs are promptly notified, and are instructed to assess the issue as soon as possible in order to take prompt corrective action and minimize emissions.

In this case, one compressor unit at the Corral 1 S compressor station, one compressor unit Corral 2 North compressor station and one compressor unit at the Corral 2S compressor station simultaneously malfunctioned due to high discharge temperature malfunctions. This event could not have been foreseen, avoided or planned for as notwithstanding compressor engine design and operation, compressors are inherently dynamic and even the smallest alarms, false or true, can be sudden, reasonably unforeseeable and unexpected which can cause compression malfunctions to occur. This event is out of OXY's control yet, OXY made every effort to control and minimize emissions as much as possible.

**2. Steps Taken to limit duration and magnitude of venting or flaring:**

The emissions event was caused by the unforeseen, unexpected, sudden, and unavoidable breakdown of equipment or process that was beyond the owner/operator's control, and did not stem from activity that could have been foreseen and avoided, and could not have been avoided by good design, operation, and preventative maintenance practices. Oxy engages in respectable and good facility operation practices while also maintaining its continuous facility equipment preventative maintenance program. Notwithstanding compressor engine design and operation, compressors are inherently dynamic and even the smallest alarms, false or true, can be sudden, reasonably unforeseeable and unexpected which can cause compression malfunctions to occur.

In this case, the immediate steps taken to limit duration of excess emissions was to route all stranded gas to flare at the Corral 2S compressor station. Though sudden and unexpected malfunctioning compressor issues

also occurred at the Corral 1S and Corral 2 North compressor stations, OXY routed the overflow of stranded gas to flare at the Corral 2S compressor station in an effort to mitigate emissions for this event as the flare at this location can accommodate a higher volume of gas and as a safety measure effort to protect equipment, environment, and personnel. In addition, internal OXY procedures ensure that upon gas compressor unit shutdown, Oxy production techs are promptly notified, and are instructed to assess the issue as soon as possible in order to take prompt corrective action and minimize emissions. Oxy production techs received the compressor alarms for all three compressor stations and quickly arrived on-site. finding no other cause for issues, simply reset the alarm panels and restarted each of the compressor units back to normal working service. Each of the compressor units were working as designed and operated normally prior to the sudden and without warning malfunction

### **3. Corrective Actions taken to eliminate the cause and reoccurrence of venting or flaring:**

The emissions event was caused by the unforeseen, unexpected, sudden, and unavoidable breakdown of equipment or process that was beyond the owner/operator's control and did not stem from activity that could have been foreseen and avoided, and could not have been avoided by good design, operation, and preventative maintenance practices. Oxy cannot take any corrective actions to eliminate the cause and potential reoccurrence of compressor malfunctions as notwithstanding proper gas compressor design, operation, and maintenance; various forms of mechanical or technical issues can be sudden, reasonably unforeseeable and unexpected. Oxy continually strives to maintain and operate its facility equipment in a manner consistent with good practices for minimizing emissions and reducing the number of emission events. Oxy has a dedicated compression equipment preventative maintenance program in place.

**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 42786

**QUESTIONS**

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID: 16696
	Action Number: 42786
	Action Type: [C-129] Venting and/or Flaring (C-129)

**QUESTIONS**

<b>Prerequisites</b>	
Any messages presented in this section, will prevent submission of this application. Please resolve these issues before continuing with the rest of the questions.	
Incident Well	[30-015-44507] CORRAL FLY 02 01 STATE #021H
Incident Facility	Not answered.

<b>Determination of Reporting Requirements</b>	
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 and/or flaring caused by an emergency or malfunction	Yes
Did or will this venting and/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 and/or flaring	Yes, minor venting and/or flaring of natural gas.
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.	
Was there or will there be at least 50 MCF of natural gas vented and/or flared during this event	Yes
Did this venting and/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
Was the venting and/or flaring 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	Other (Specify)
Additional details for Equipment Involved. Please specify	Emergency Flaring >Compressor Malfunctions

<b>Representative Compositional Analysis of Vented or Flared Natural Gas</b>	
Please provide the mole percent for the percentage questions in this group.	
Methane (CH4) percentage	76
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.

<b>Date(s) and Time(s)</b>	
Date venting and/or flaring was discovered or commenced	08/08/2021
Time venting and/or flaring was discovered or commenced	04:30 PM
Time venting and/or flaring was terminated	05:15 PM
Cumulative hours during this event	4

<b>Measured or Estimated Volume of Vented or Flared Natural Gas</b>	
Natural Gas Vented (Mcf) Details	Not answered.

Natural Gas Flared (Mcf) Details	Cause: Other   Other (Specify)   Natural Gas Flared   Released: 106 Mcf   Recovered: 0 Mcf   Lost: 106 Mcf ]
Other Released Details	Not answered.
Additional details for Measured or Estimated Volume(s). Please specify	Gas Flare Meter
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 or is this venting and/or flaring a result of downstream activity	No
Date notified of downstream activity requiring this venting and/or flaring	Not answered.
Time notified of downstream activity requiring this venting and/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	This emissions event was caused by the unforeseen, unexpected, sudden, and unavoidable breakdown of equipment or process that was beyond the owner/operator's control, and did not stem from activity that could have been foreseen and avoided, and could not have been avoided or prevented by good design, operation, and preventative maintenance practices. Internal OXY procedures ensure that upon gas compressor unit and/or multiple unit shutdown, due to malfunction and/or alarms, production techs are promptly notified, and are instructed to assess the issue as soon as possible in order to take prompt corrective action and minimize emissions.
Steps taken to limit the duration and magnitude of venting and/or flaring	In this case, the immediate steps taken to limit duration of excess emissions was to route all stranded gas to flare at the Corral 2S compressor station. Though sudden and unexpected malfunctioning compressor issues also occurred at the Corral 1S and Corral 2 North compressor stations, OXY routed the overflow of stranded gas to flare at the Corral 2S compressor station in an effort to mitigate emissions for this event as the flare at this location can accommodate a higher volume of gas and as a safety measure effort to protect equipment, environment, and personnel. In addition, internal OXY procedures ensure that upon gas compressor unit shutdown, Oxy production techs are promptly notified, and are instructed to assess the issue as soon as possible in order to take prompt corrective action and minimize emissions. Oxy production techs received the compressor alarms for all three compressor stations and quickly arrived on-site. finding no other cause for issues, simply reset the alarm panels and restarted each of the compressor units back to normal working service. Each of the compressor units were working as designed and operated normally prior to the sudden and without warning malfunction.
Corrective actions taken to eliminate the cause and reoccurrence of venting and/or flaring	The emissions event was caused by the unforeseen, unexpected, sudden, and unavoidable breakdown of equipment or process that was beyond the owner/operator's control and did not stem from activity that could have been foreseen and avoided, and could not have been avoided by good design, operation, and preventative maintenance practices. Oxy cannot take any corrective actions to eliminate the cause and potential reoccurrence of compressor malfunctions as notwithstanding proper gas compressor design, operation, and maintenance; various forms of mechanical or technical issues can be sudden, reasonably unforeseeable and unexpected. Oxy continually strives to maintain and operate its facility equipment in a manner consistent with good practices for minimizing emissions and reducing the number of emission events. Oxy has a dedicated compression equipment preventative maintenance program in place.

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	Action Number: 42786
	Action Type: [C-129] Venting and/or Flaring (C-129)

CONDITIONS

Created By	Condition	Condition Date
marialuna	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.	8/17/2021