



Certificate of Analysis

Number: 6030-20110087-001A

Artesia Laboratory

200 E Main St.
Artesia, NM 88210
Phone 575-746-3481Chandler 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 ft³ @ 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 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+
Nitrogen	1.320	1.675		GPM TOTAL C3+
Methane	76.201	55.381		GPM TOTAL iC5+
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	0.7649	C7+
Calculated Molecular Weight	22.07	91.92
Compressibility Factor	0.9960	

GPA 2172 Calculation:

Calculated Gross BTU per ft³ @ 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
GPA 2172 Calculation:	
Calculated Gross BTU per ft³ @ 14.65 psia & 60°F	
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

Hydrocarbon Laboratory Manager

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UPSET EVENT SPECIFIC JUSTIFICATIONS FORM**Facility:** Corral 2S CS**Start Date:** 06/11/2021 @ 03:00 PM**End Date:** 06/11/2021 @ 06:30 PM**Cause:** Compressor Malfunction> Extreme Ambient Temperature**Duration of event:** 3 hours 30 minutes**Total MCF:** 1632**Method of Flared Gas Measurement:** Flare Meter

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

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 or prevented by good design, operation, and preventative maintenance practices. Internal OXY procedures ensure that upon gas compressor unit and/or multiple unit shutdown, 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 must assess whether compressor unit shutdown is due to damage and repair is needed, or whether there are other reasons for its cause. 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.

Oxy engages in respectable and good facility operation practices while also maintaining its continuous facility equipment preventative maintenance program. In this case, Oxy production techs determined that the cause of all its compression equipment automatically shutting down was due to high discharge temperature malfunction alarms, that were triggered by the area's extreme scorching temperatures affecting the compression equipment. These without warning malfunctions were triggered by the combination of extremely high ambient temperatures and certain engine operating conditions (despite proper design and operation), that caused the facilities compression equipment to overheat, which prompted all of the compressor engine's sensors to abruptly shut down each of the units concurrently to avoid catastrophic damage to the internal engine components. The extreme scorching ambient temperatures caused the compression equipment to automatically shut down several times between 03:00 PM to 06:30 PM. This incident was completely out of Oxy's control to prevent from happening. OXY made every effort to control and minimize emissions as much as possible during this event.

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

It is OXY's policy to route all stranded sales gas to a flare during a sudden, unforeseen and unavoidable emergency or malfunction, in order to minimize emissions as much as possible. In this case, Oxy production techs determined that the cause of all its compression equipment automatically shutting down several times, was due to high discharge temperature malfunction alarms, that were triggered by the area's extreme scorching temperatures affecting the compression equipment operation. These without warning malfunctions were triggered by the combination of extremely high ambient temperatures and certain engine operating

conditions (despite proper design and operation), that caused the facilities compression equipment to overheat, which prompted all of the compressor engine's sensors to abruptly shut down each of the units concurrently to avoid catastrophic damage to the internal engine components. The extreme scorching ambient temperatures caused the compression equipment to automatically shut down several times between 03:00 PM to 06:30 PM. As soon as Oxy production techs responded quickly to the malfunction alarms, and arrived on-site to the facility, as this facility is unmanned and the techs had to travel from another facility, a visible inspection of the compression equipment did not provide any additional causes for the compression equipment to have malfunctioned, other than all the units were engaging in high discharge temperature alarms, brought on by the extreme scorching heat of the day temperatures affecting the units, causing them to run hotter and overheat. During each episode that the compression automatically shutdown from malfunction alarms, that were beyond Oxy's control to avoid or prevent, regardless of the equipment being part of a very good preventative maintenance program, Oxy production techs immediately reset the compression equipment's alarms, then all of the compressors were restarted and returned to normal working operations. All of the compression equipment was working normally and in good working operation prior to the malfunctions automatically shutting down the compression equipment, on both occasions. During each episode that Oxy's facility compression equipment automatically shut down without warning, Oxy production techs quickly responded and took steps to resolve the issues. 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. During the period of malfunctions and corrective actions, OXY routed all stranded gas to a flare briefly in an effort to minimize emissions until the units were brought back to working service. The flare is regularly monitored per the facility's General Construction Permit (GCP) requirements to ensure flame is lit and meeting opacity requirements.

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. It is OXY's policy to route all stranded sales gas to a flare during an unforeseen and unavoidable emergency or malfunction, in order to minimize emissions as much as possible. Oxy cannot take any corrective actions to eliminate the cause and potential reoccurrence of compressor malfunctions as notwithstanding proper gas compressor design and operation, various forms of mechanical or technical issues can be sudden, reasonably unforeseeable and unexpected which can cause compressor unit malfunctions to occur without warning or advance notice. 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. The only actions that Oxy can take and handle that is within its control, is to continue with its compression equipment preventative maintenance program for this facility's compression equipment.

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 36418

QUESTIONS

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID: 16696
	Action Number: 36418
	Action Type: [C-129] Venting and/or Flaring (C-129)

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, major 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 19.13.29.7 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	Corral 2S Compressor Station
Facility Type	Compressor Station - (CS)

Equipment Involved

Primary Equipment Involved	Other (Specify)
Additional details for Equipment Involved. Please specify	Emergency Flare>Compressor Malfunction> Extreme Ambient Temperature

Representative Compositional Analysis of Vented or Flared Natural Gas

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.

Date(s) and Time(s)

Date venting or flaring was discovered or commenced	06/11/2021
Time venting or flaring was discovered or commenced	03:00 PM
Is the venting or flaring event complete	Yes
Date venting or flaring was terminated	06/11/2021
Time venting or flaring was terminated	06:30 PM
Total duration of venting or flaring in hours, if venting or flaring has terminated	4
Longest duration of cumulative hours within any 24-hour period during this event	4

Measured or Estimated Volume of Vented or Flared Natural Gas

Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Cause: Other Other (Specify) Natural Gas Flared Spilled: 1,632 Mcf Recovered: 0 Mcf Lost: 1,632 Mcf]
Other Released Details	Not answered.
Additional details for Measured or Estimated Volume(s). Please specify	Flare Meter
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

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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	See Justification Form >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 or prevented by good design, operation, and preventative maintenance practices. Internal OXY procedures ensure that upon gas compressor unit and/or multiple unit shutdown, 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 must assess whether compressor unit shutdown is due to damage and repair is needed, or whether there are other reasons for its cause. 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.
Steps taken to limit the duration and magnitude of venting or flaring	See Justification Form >It is OXY's policy to route all stranded sales gas to a flare during a sudden, unforeseen and unavoidable emergency or malfunction, in order to minimize emissions as much as possible. During each episode that the compression automatically shutdown from malfunction alarms, that were beyond Oxy's control to avoid or prevent, regardless of the equipment being part of a very good preventative maintenance program, Oxy production techs immediately reset the compression equipment's alarms, then all of the compressors were restarted and returned to normal working operations.
Corrective actions taken to eliminate the cause and reoccurrence of venting or flaring	See Justification Form >Oxy cannot take any corrective actions to eliminate the cause and potential reoccurrence of compressor malfunctions as notwithstanding proper gas compressor design and operation, various forms of mechanical or technical issues can be sudden, reasonably unforeseeable and unexpected which can cause compressor unit malfunctions to occur without warning or advance notice. 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. The only actions that Oxy can take and handle that is within its control, is to continue with its compression equipment preventative maintenance program for this facility's compression equipment.

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	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.	7/14/2021