LABORATORY SERVICES Natural Gas Analysis
www.permianls.com
575.397.3713 2609 W Marland Hobbs NM 88240

C6+ Gas Analysis Report

Sample Point Code	Sample Point Name	Sample Point Location
11054G	NHU Satellite 19-C	NHU Satellite 19-C

Source Laboratory	Lab File No	Container Identity	Sampler
Laboratory Services	2020037057	1970	D Armstrong - Spot

District	Area Name	Field Name	Facility Name
USA	USA	USA	New Mexico

Date Sampled	Date Effective	Date Received	Date Reported
Nov 24, 2020 13:58	Nov 24, 2020 13:58	Nov 25, 2020 09:37	Nov 25, 2020

Ambient Temp (°F)	Flow Rate (Mcf)	Analyst	Press PSI @ Temp °F Source Conditions
70.00		Torrance	318 @ 82

Operator	Lab Source Description
Oxy	Separator

Component	Normalized Mol %	Un-Normalized Mol %	GPM
H2S (H2S)	0.8800	0.88	
Nitrogen (N2)	1.8580	1.87438	
CO2 (CO2)	84.2500	85.00028	
Methane (C1)	8.4710	8.54569	
Ethane (C2)	1.5400	1.55329	0.4120
Propane (C3)	1.7350	1.75009	0.4780
I-Butane (IC4)	0.2240	0.22587	0.0730
N-Butane (NC4)	0.4530	0.45679	0.1430
I-Pentane (IC5)	0.1560	0.15725	0.0570
N-Pentane (NC5)	0.1400	0.14092	0.0510
Hexanes Plus (C6+)	0.2930	0.29545	0.1270
TOTAL	100.0000	100.8800	1.3410

Method(s): Gas C6+ - GPA 2261, Extended Gas - GPA 2286, Calculations - GPA 2172

Analyzer Information

Device Type:	Gas Chromatograph	Device Make:	Shimadzu
Device Model:	GC-2014	Last Cal Date:	Nov 24, 2020

Gross Heating Values (Real, BTU/ft³)

14.696 PSI @ 60.00 °F		14.73 PSI @ 60.00 °F	
Dry	Saturated	Dry	Saturated
211.7	209.000	212.2	209.5

Calculated Total Sample Properties

GPA2145-16 *Calculated at Contract Conditions

Relative Density Real	Relative Density Ideal
1.4356	1.4283

Molecular Weight: 41.3656

C6+ Group Properties

Assumed Composition

C6 - 60.000% C7 - 30.000% C8 - 10.000%

Field H2S: 8800 PPM

PROTREND STATUS:
Passed By Validator on Nov 25, 2020

DATA SOURCE:
Imported

PASSED BY VALIDATOR REASON:
First sample taken @ this point, composition looks reasonable

VALIDATOR:
Torrance Galvan

VALIDATOR COMMENTS:
OK

EVENT SPECIFIC JUSTIFICATIONS FORM

Facility: North Hobbs Unit CTB

Start Date: 06/18/2021 @ 08:35 AM **End Date:** 06/18/2021 @ 09:30 AM

Cause: Compressor malfunction on low lube oil level

Duration of event: 55 min.

Method of Flared Gas Measurement: Flare Meter

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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. 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. The flare at this facility has a 98% combustion efficiency in order to lessen emissions as much as possible. The flare is regularly monitored to the ensure flame is lit and meeting opacity requirements. 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, thereby, triggering the unit's sensors to automatically shut down the unit to avoid catastrophic damage to the internal engine components.

Oxy engages in respectable and good facility operation practices while also maintaining its continuous equipment preventative maintenance program. Internal OXY procedures ensure that upon a gas compressor unit shutdown, production techs are promptly notified via an equipment alarm notification app and are trained to respond immediately in order to assess the issue as soon as possible, so that prompt corrective actions are taken to minimize emissions. Oxy production techs must assess whether a gas compressor unit shutdown is due to damage and repair is needed, or whether there are other reasons for its cause. In this case, this facility is an unmanned location and therefore, the Oxy production tech, upon receiving the malfunction alarm for the North Hobbs Unit CTB, quickly drove to the facility from another distant facility location. Upon the production tech's arrival, the immediate steps taken was to check the lube oil level and inspect the unit for additional potential issues. The Oxy production tech determined that the cause of the Toromont compressor was due to a low lube oil level sensor. The Oxy production tech did not find any other issues affecting the unit, and as the lube oil level was normal, the production tech reset the control panel and restarted the unit. The Toromont compressor unit was working as designed and operated normally prior to the sudden and without warning automatic shutdown of the compressor unit.

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. The flare at this facility has a 98% combustion efficiency in order to lessen emissions as much as possible. The flare is regularly monitored to the ensure flame is lit and meeting opacity requirements.

In this case, the immediate steps taken to limit duration and magnitude of flaring was for the Oxy production tech, upon his arrival to the facility from another distant facility, was to check the lube oil level and inspect the compressor unit for additional potential issues. The Oxy production tech determined that the cause of the Toromont compressor was due to a low lube oil level sensor. The Oxy production tech did not find any other issues affecting the unit, and as the lube oil level was normal, the production tech reset the control panel and restarted the unit. The Toromont compressor unit was working as designed and operated normally prior to the sudden and without warning automatic shutdown of the compressor unit. Flaring ceased as soon as the compressor unit was up to normal working condition and speed.

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

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. 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. The flare at this facility has a 98% combustion efficiency in order to lessen emissions as much as possible. The flare is regularly monitored to the ensure flame is lit and meeting opacity requirements.

Oxy is limited in the corrective actions available to them to eliminate the cause and potential reoccurrence of compressor malfunctions 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, thereby, triggering the unit’s sensors to automatically shut down the unit to avoid catastrophic damage to the internal engine components. 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 Toromont compressor unit was working as designed and operated normally prior to the sudden and without warning automatic shutdown of the compressor unit. Oxy has a strong and positive compression equipment preventative maintenance program in place.

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District IV
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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 35818

QUESTIONS

Operator: OCCIDENTAL PERMIAN LTD P.O. Box 4294 Houston, TX 772104294	OGRID: 157984
	Action Number: 35818
	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 addional 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 19.15.29.7 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 occuring at a facility that does not have an Facility ID (f#) yet.	
Facility or Site Name	*Not answered.*
Facility Type	*Not answered.*

Equipment Involved	
Primary Equipment Involved	Other (Specify)
Additional details for Equipment Involved. Please specify	Emergency Flare, Compressor malfunction, lube oil level sensor

Representative Compositional Analysis of Vented or Flared Natural Gas	
Please provide the mole percent for the percentage questions in this group.	
Methane (CH4) percentage	8
Nitrogen (N2) percentage, if greater than one percent	2
Hydrogen Sulfide (H2S) PPM, rounded up	8,800
Carbon Dioxide (C02) percentage, if greater than one percent	84
Oxygen (02) 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 Sufide (H2S) PPM quality requirement	*Not answered.*
Carbon Dioxide (C02) percentage quality requirement	*Not answered.*
Oxygen (02) percentage quality requirement	*Not answered.*

Date(s) and Time(s)	
Date venting or flaring was discovered or commenced	06/18/2021
Time venting or flaring was discovered or commenced	08:35 AM
Is the venting or flaring event complete	Yes
Date venting or flaring was terminated	06/18/2021
Time venting or flaring was terminated	09:30 AM
Total duration of venting or flaring in hours, if venting or flaring has terminated	0
Longest duration of cumulative hours within any 24-hour period during this event	0

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: 134 Mcf | Recovered: 0 Mcf | Lost: 134 Mcf]
Other Released Details	*Not answered.*
Additional details for Measured or Estimated Volume(s). Please specify	Emergency Flare, Compressor malfunction, lube oil level sensor
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	No
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	See Justification Form > 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. 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. The flare at this facility has a 98% combustion efficiency in order to lessen emissions as much as possible. The flare is regularly monitored to the ensure flame is lit and meeting opacity requirements. 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, thereby, triggering the unit's sensors to automatically shut down the unit to avoid catastrophic damage to the internal engine components.
Steps taken to limit the duration and magnitude of venting or flaring	See Justification Form > In this case, the immediate steps taken to limit duration and magnitude of flaring was for the Oxy production tech, upon his arrival to the facility from another distant facility, was to check the lube oil level and inspect the compressor unit for additional potential issues. The Oxy production tech determined that the cause of the Toromont compressor was due to a low lube oil level sensor. The Oxy production tech did not find any other issues affecting the unit, and as the lube oil level was normal, the production tech reset the control panel and restarted the unit. The Toromont compressor unit was working as designed and operated normally prior to the sudden and without warning automatic shutdown of the compressor unit. Flaring ceased as soon as the compressor unit was up to normal working condition and speed.
Corrective actions taken to eliminate the cause and reoccurrence of venting or flaring	See Justification Form > Oxy is limited in the corrective actions available to them to eliminate the cause and potential reoccurrence of compressor malfunctions 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, thereby, triggering the unit's sensors to automatically shut down the unit to avoid catastrophic damage to the internal engine components. 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 Toromont compressor unit was working as designed and operated normally prior to the sudden and without warning automatic shutdown of the compressor unit. Oxy has a strong and positive compression equipment preventative maintenance program in place.

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	Action Number: 35818
	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.	7/9/2021