



## Certificate of Analysis

Number: 6030-21060266-003A

Artesia Laboratory

200 E Main St.

Artesia, NM 88210

Phone 575-746-3481

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

June 28, 2021

Field: Sand Dunes  
Station Name: Sand Dunes CTB Train 3 Production  
Station Number: 17009P  
Station Location: CTB  
Sample Point: Meter  
Formation: Monthly  
County: Eddy  
Type of Sample: : Spot-Cylinder  
Heat Trace Used: N/A  
Sampling Method: : Fill and Purge  
Sampling Company: : SPL

Sampled By: Javier Lazo  
Sample Of: Gas Spot  
Sample Date: 06/24/2021 12:27  
Sample Conditions: 90 psia, @ 105 °F Ambient: 100 °F  
Effective Date: 06/24/2021 12:27  
Method: GPA-2261M  
Cylinder No: 1111-002295  
Instrument: 70104124 (Inficon GC-MicroFusion)  
Last Inst. Cal.: 05/18/2021 0:00 AM  
Analyzed: 06/25/2021 13:45:45 by KNF

## Analytical Data

Components	Un-normalized Mol %	Mol. %	Wt. %	GPM at 14.65 psia
Hydrogen Sulfide	NIL	NIL	NIL	
Nitrogen	1.770	1.78383	2.131	
Carbon Dioxide	1.321	1.33170	2.500	
Methane	72.953	73.52731	50.313	
Ethane	11.168	11.25608	14.436	3.007
Propane	6.184	6.23236	11.722	1.715
Iso-Butane	0.769	0.77545	1.922	0.253
n-Butane	1.954	1.96948	4.882	0.620
Iso-Pentane	0.551	0.55564	1.710	0.203
n-Pentane	0.641	0.64574	1.987	0.234
Hexanes	0.546	0.55030	2.023	0.226
Heptanes	0.675	0.68001	2.906	0.313
Octanes	0.527	0.53084	2.586	0.272
Nonanes Plus	0.160	0.16126	0.882	0.091
	99.219	100.0000	100.000	6.934

## Calculated Physical Properties

Calculated Molecular Weight	Total	C9+
Compressibility Factor	23.45	128.26
Relative Density Real Gas	0.9955	
	0.8129	4.4283

## GPA 2172 Calculation:

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

Real Gas Dry BTU	1346.1	6974.4
Water Sat. Gas Base BTU	1323.2	6852.4
Ideal, Gross HV - Dry at 14.65 psia	1340.1	6974.4
Ideal, Gross HV - Wet	1316.6	6852.4

Comments: H2S Field Content 0 ppm  
Mcf/day 3116

Data reviewed by: Eric Ramirez, Analyst

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

**UPSET FLARING EVENT SPECIFIC JUSTIFICATIONS FORM****Facility:** Sand Dunes South Corridor CTB**Flare Date:** 11/13/2021**Duration of event:** 1 Hour 10 Minutes**MCF Flared:** 138**Start Time:** 03:20 PM**End Time:** 04:30 PM**Cause:** Downstream Activity Issue > Enterprise > Sand Dunes Central station > Compression Equipment Issues**Method of Flared Gas Measurement:** Gas Flare Meter**Well API Associated with Facility:** 30-015-44526 Nimitz MDP1 12 Federal Com #001H

**Comments:** This upset event was not caused by any wells associated with the facility. The emissions event was caused by the unforeseen, unexpected, sudden, and unavoidable interruption, restriction or complete shut-in of a gas pipeline by a third-party pipeline operator, which impacted Oxy's ability to send gas to a third-party gas pipeline.

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

In this case, this emissions event was caused by the unforeseen, unexpected, sudden, and unavoidable interruption, restriction, or complete shut-in of a gas pipeline by a third-party pipeline operator, which impacted Oxy's ability to send gas to a third-party operated gas pipeline. This interruption, restriction, or complete shut-in of the gas pipeline by a third-party pipeline operator is downstream of Oxy's custody transfer point and out of Oxy's control to avoid or prevent from happening and did not stem from any of Oxy's upstream facility activity that could have been foreseen and avoided, and could not have been avoided by good design, operation, and preventative maintenance practices. The high line pressure spike in Enterprise sales gas service pipeline system impacted Oxy's ability to send gas to Enterprise's Sand Dunes Central Station, as their downstream facility compression equipment was unable to handle the gas loads sent to them because of their central station facility was having compression equipment issues. Until Enterprise was able to handle the volume of sales gas sent to them, the spike in line pressure forced Oxy's upstream facility to route its stranded gas to a flare, as it was not able to push its gas into Enterprise's gas pipeline. Upon immediate flaring at Oxy's Sand Dunes South Corridor CTB, Oxy personnel immediately contacted Enterprise to determine cause. No advance warning of any kind was provided to Oxy personnel from Enterprise personnel regarding issues with their sales gas service pipeline system or issues with their downstream facility.

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

It is OXY's policy to route its stranded gas to a flare during an unforeseen and unavoidable emergency or malfunction, that is beyond Oxy's control to avoid, prevent or foresee, to minimize emissions as much as possible as part of the overall steps taken to limit duration and magnitude of flaring. The flare at this facility has a 98% combustion efficiency in order to lessen emissions as much as possible. The high line pressure spike in Enterprise sales gas service pipeline system impacted Oxy's ability to send gas to Enterprise's Sand Dunes Central Station, as their downstream facility compression equipment was unable to handle the gas loads sent to them because of their central station facility was having compression equipment issues. Until Enterprise was able to handle the volume of sales gas sent to them, the spike in line pressure forced Oxy's upstream facility to route its stranded gas to a flare, as it was not able to push its gas into Enterprise's gas pipeline. Upon immediate flaring

at Oxy's Sand Dunes South Corridor CTB, Oxy personnel immediately contacted Enterprise to determine cause. No advance warning of any kind was provided to Oxy personnel from Enterprise personnel regarding issues with their sales gas service pipeline system or issues with their downstream facility. To significantly minimize emissions during this flaring event, Oxy production techs began to quickly shut-in multiple high GOR wells to minimize gas throughput at its Sand Dunes South Corridor CTB facility to reduce flaring volumes and attempted to offload as much gas as possible to secondary offloading third party operator, DCP. Once Enterprise downstream facility resumed normal working operations and began gas sales pipeline service once again, did flaring cease.

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

Oxy is limited in its corrective actions to eliminate the cause and potential reoccurrence of an Enterprise gas flow pipeline restriction or shut in, as this control issue is downstream of Oxy's custody transfer point and out of Oxy's control to avoid or prevent from happening or reoccurring. Enterprise 's downstream facility issues will re-occur from time to time, which in turn, directly impacts Oxy's ability to send gas to them. When Enterprise downstream facility and/or its facility equipment has issues or greatly struggles to handle the volume of gas being sent to them by Oxy, Enterprise then restricts or cuts off Oxy's ability to send gas, which then prompts Oxy to route its stranded gas not pushed into the Enterprise gas pipeline, to flare. OXY makes every effort to control and minimize emissions as much as possible during these circumstances. The limited actions that Oxy can do in this circumstance is to shut in multiple high GOR wells and engage in secondary third-party operator offload alternative routes to minimize flaring volumes during these third-party pipeline operator downstream activity restrictions and/or shut ins.

**District I**

1625 N. French Dr., Hobbs, NM 88240  
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**District II**

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**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 65277

**QUESTIONS**

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID: 16696 Action Number: 65277 Action Type: [C-129] Venting and/or Flaring (C-129)
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**QUESTIONS****Prerequisites**

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	Not answered.
Incident Facility	[fAPP2127048458] Sand Dunes South Corridor CTB

**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 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 venting and/or flaring event	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

**Equipment Involved**

Primary Equipment Involved	Not answered.
Additional details for Equipment Involved. Please specify	Emergency Flare > Downstream Activity Issue > Enterprise > Sand Dunes Central station > Compression Equipment Issues

**Representative Compositional Analysis of Vented or Flared Natural Gas**

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

Methane (CH4) percentage	74
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	1
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 and/or flaring was discovered or commenced	11/20/2021
Time venting and/or flaring was discovered or commenced	03:20 PM
Time venting and/or flaring was terminated	04:30 PM
Cumulative hours during this event	1

**Measured or Estimated Volume of Vented or Flared Natural Gas**

Natural Gas Vented (Mcf) Details	Not answered.
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Natural Gas Flared (Mcf) Details	Cause: Other   Other (Specify)   Natural Gas Flared   Released: 138 Mcf   Recovered: 0 Mcf   Lost: 138 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	Yes
Was notification of downstream activity received by you or your operator	No
Downstream OGRID that should have notified you or your operator	[713731] Enterprise Crude Pipeline LLC
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	In this case, this emissions event was caused by the unforeseen, unexpected, sudden, and unavoidable interruption, restriction, or complete shut-in of a gas pipeline by a third-party pipeline operator, which impacted Oxy's ability to send gas to a third-party operated gas pipeline. This interruption, restriction, or complete shut-in of the gas pipeline by a third-party pipeline operator is downstream of Oxy's custody transfer point and out of Oxy's control to avoid or prevent from happening and did not stem from any of Oxy's upstream facility activity that could have been foreseen and avoided, and could not have been avoided by good design, operation, and preventative maintenance practices. The high line pressure spike in Enterprise sales gas service pipeline system impacted Oxy's ability to send gas to Enterprise's Sand Dunes Central Station, as their downstream facility compression equipment was unable to handle the gas loads sent to them because of their central station facility was having compression equipment issues. Until Enterprise was able to handle the volume of sales gas sent to them, the spike in line pressure forced Oxy's upstream facility to route its stranded gas to a flare, as it was not able to push its gas into Enterprise's gas pipeline. Upon immediate flaring at Oxy's Sand Dunes South Corridor CTB, Oxy personnel immediately contacted Enterprise to determine cause. No advance warning of any kind was provided to Oxy personnel from Enterprise personnel regarding issues with their sales gas service pipeline system or issues with their downstream facility.
Steps taken to limit the duration and magnitude of venting and/or flaring	It is OXY's policy to route its stranded gas to a flare during an unforeseen and unavoidable emergency or malfunction, that is beyond Oxy's control to avoid, prevent or foresee, to minimize emissions as much as possible as part of the overall steps taken to limit duration and magnitude of flaring. The flare at this facility has a 98% combustion efficiency in order to lessen emissions as much as possible. The high line pressure spike in Enterprise sales gas service pipeline system impacted Oxy's ability to send gas to Enterprise's Sand Dunes Central Station, as their downstream facility compression equipment was unable to handle the gas loads sent to them because of their central station facility was having compression equipment issues. Until Enterprise was able to handle the volume of sales gas sent to them, the spike in line pressure forced Oxy's upstream facility to route its stranded gas to a flare, as it was not able to push its gas into Enterprise's gas pipeline. Upon immediate flaring at Oxy's Sand Dunes South Corridor CTB, Oxy personnel immediately contacted Enterprise to determine cause. No advance warning of any kind was provided to Oxy personnel from Enterprise personnel regarding issues with their sales gas service pipeline system or issues with their downstream facility. To significantly minimize emissions during this flaring event, Oxy production techs began to quickly shut-in multiple high GOR wells to minimize gas throughput at its Sand Dunes South Corridor CTB facility to reduce flaring volumes and attempted to offload as much gas as possible to secondary offloading third party operator, DCP. Once Enterprise downstream facility resumed normal working operations and began gas sales pipeline service once again, did flaring cease.
Corrective actions taken to eliminate the cause and reoccurrence of venting and/or flaring	Oxy is limited in its corrective actions to eliminate the cause and potential reoccurrence of an Enterprise gas flow pipeline restriction or shut in, as this control issue is downstream of Oxy's custody transfer point and out of Oxy's control to avoid or prevent from happening or reoccurring. Enterprise 's downstream facility issues will re-occur from time to time, which in turn, directly impacts Oxy's ability to send gas to them. When Enterprise downstream facility and/or its facility equipment has issues or greatly struggles to handle the volume of gas being sent to them by Oxy, Enterprise then restricts or cuts off Oxy's ability to send gas, which then prompts Oxy to route its stranded gas not pushed into the Enterprise gas pipeline, to flare. OXY makes every effort to control and minimize emissions as much as possible during these circumstances. The limited actions that Oxy can do in this circumstance is to shut in multiple high GOR wells and engage in secondary third-party operator offload alternative routes to minimize flaring volumes during these third-party pipeline operator downstream activity restrictions and/or shut ins.

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CONDITIONS  
  
Action 65277

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Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID: 16696
	Action Number: 65277
	Action Type: [C-129] Venting and/or Flaring (C-129)

CONDITIONS

Created By	Condition	Condition Date
marialuna2	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.	12/6/2021