**Volumetrics Inc.**
3710 East Rio Grande St, Victoria, TX-77901
Phone: 361-827-4024

| | | | |
|---|---|---|---|
| **Company:** | OXY USA INC | **Work Order** | 4000501489 |
| **Field/Location :** | NMSW | **Sampled by:** | OXY/JE |
| **Station Name :** | CORRAL COMPRESSOR STA 2 SOUTH FUEL SKID OUTLE | **Sample Type :** | SPOT-CYLINDER |
| **Station Number :** | NA | **Sample Temperature (F):** | NA |
| **Sample Date:** | 2/23/22 1:30 PM | **Sample Pressure (PSIG):** | 125 |
| **Analysis Date:** | 3/7/22 11:00 AM | **Flow rate (MCF/Day):** | NA |
| **Instrument:** | INFICON | **Ambient Temperature (F):** | 23 |
| **Calibration/Verification Date:** | 3/7/2022 | **Sampling method:** | FILL & EMPTY |
| **Heat Trace used:** | YES | **Cylinder Number:** | 27784 |

**NATURAL GAS ANALYSIS: GPA 2261**

| Components | Un-Normalized Mol% | Normalized Mol% | GPM 14.650 | GPM 14.730 | GPM 15.025 |
|---|---|---|---|---|---|
| Hydrogen Sulfide | 0.0000 | 0.0000 | | | |
| Nitrogen | 1.3240 | 1.3598 | | | |
| Methane | 75.6525 | 77.7008 | | | |
| Carbon Dioxide | 0.1877 | 0.1928 | | | |
| Ethane | 11.5036 | 11.8151 | 3.153 | 3.170 | 3.234 |
| Propane | 5.8586 | 6.0172 | 1.654 | 1.663 | 1.696 |
| Isobutane | 0.7572 | 0.7777 | 0.254 | 0.255 | 0.260 |
| N-butane | 1.6243 | 1.6683 | 0.525 | 0.528 | 0.538 |
| Isopentane | 0.2101 | 0.2158 | 0.079 | 0.079 | 0.081 |
| N-Pentane | 0.1809 | 0.1858 | 0.067 | 0.068 | 0.069 |
| Hexanes Plus | 0.0650 | 0.0667 | 0.029 | 0.029 | 0.030 |
| **Total** | **97.3638** | **100.0000** | | | |

**Hexanes plus split (60%-30%-10%)**

| **Physical Properties (Calculated)** | **14.650 psia** | **14.730 psia** | **15.025 psia** |
|---|---|---|---|
| Total GPM Ethane+ | 5.761 | 5.792 | 5.908 |
| Total GPM Iso-Pentane+ | 0.175 | 0.176 | 0.179 |
| Compressibility (Z) | 0.9965 | 0.9965 | 0.9964 |
| Specific Gravity ( Air=1) @ 60 °F | 0.7242 | 0.7242 | 0.7243 |
| Molecular Weight | 20.911 | 20.911 | 20.911 |

| **Gross Heating Value** | **14.650 psia** | **14.730 psia** | **15.025 psia** |
|---|---|---|---|
| Dry, Real (BTU/Ft$^3$) | 1244.9 | 1251.8 | 1276.9 |
| Wet, Real (BTU/Ft$^3$) | 1223.3 | 1230.0 | 1254.7 |
| Dry, Ideal (BTU/Ft$^3$) | 1240.6 | 1247.4 | 1272.3 |
| Wet, Ideal (BTU/Ft$^3$) | 1219.0 | 1225.7 | 1250.2 |

Temperature base 60 °F

**Comment:** FIELD H2S =0 PPM

**Verified by**

Mostaq Ahammad
Petroleum Chemist

**Approved by**

Deann Friend
Laboratory Manager

# UPSET FLARING EVENT SPECIFIC JUSTIFICATIONS FORM

**Facility:** Corral 2S **Flare Date:** 10/14/2023

**Duration of Event:** 14 Hours 24 Minutes **MCF Flared:** 488

**Start Time:** 12:55 AM **End Time:** 03:19 PM

**Cause:** Emergency Flare > Opening of Corral Bluff Wells & Multiple Compression Equipment Issues

**Method of Flared Gas Measurement:** Gas Flare Meter

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

In this case, gas had to be flared rather than be compressed due to the opening of several Corral Bluff wells , which in turn began surging more gas than the compression equipment could handle, which then prompted sudden and unexpected compression malfunction to occur. Within a 24-hr period, there were several brief intermittent flaring episodes. All compression were running at maximized operational capacity when the Corral Bluff wells were being opened. Well surges occur from time to time, as they are unforeseeable and unanticipated, and can surge a large of volume of gas that compression equipment is not able to handle all at once, which triggers unexpected malfunctions to occur causing an automatic shutdown of the compression units, which in turn prompts unanticipated flaring to occur. 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. Compressor engines are designed to operate in a precise manner and when unexpected large volumes of well gas surges, it disrupts the operating manner, prompts a malfunction to occur, which then robs the compression engine of power, thus, causing an automatic shutdown of the unit. These brief intermittent flaring instances event could not have been foreseen, avoided, or prevented from happening as they occurred with no advance notice or warning. The duration and volume of this event is a collective of all intermittent flaring instances within a 24 hr-period.

## 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 to lessen emissions as much as possible. In this case, gas had to be flared rather than be compressed due to the opening of several Corral Bluff wells , which in turn began surging more gas than the compression equipment could handle, which then prompted sudden and unexpected compression malfunction to occur. Within a 24-hr period, there were several brief intermittent flaring episodes. All compression were running at maximized operational capacity when the Corral Bluff wells were being opened. Well surges occur from time to time, as they are unforeseeable and unanticipated, and can surge a large of volume of gas that compression equipment is not able to handle all at once, which triggers unexpected malfunctions to occur causing an automatic shutdown of the compression units, which in turn prompts unanticipated flaring to occur. As soon as a flaring instance was triggered, Oxy field personnel assisted with ensuring field area’s mitigation optimizers cut injection rates to wells in the field to reduce injection and sales

gas across the area so that field pressure would stay below the flare trigger setpoints to cease flaring, while also ensuring compression equipment was restarted. This event is out of OXY's control, yet OXY made every effort to control and minimize emissions as much as possible.

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

Oxy is unable to take any corrective actions to eliminate this cause and potential reoccurrence of well surges as wells will unpredictably surge from time to time, and affect the operation of compression equipment and therefore, is out of Oxy's control to prevent from happening or avoid. They only actions OXY field personnel can take during circumstances such as these, is to engage in constant communication with additional field personnel, flowback personnel, etc., regarding sudden and unexpected well surges, so that every effort is made to minimize emissions during these circumstances.

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# State of New Mexico
# Energy, Minerals and Natural Resources
# Oil Conservation Division
# 1220 S. St Francis Dr.
# Santa Fe, NM 87505



## DEFINITIONS

| | |
|---|---|
| Operator:<br>OXY USA INC<br>P.O. Box 4294<br>Houston, TX 772104294 | OGRID:<br>16696 |
| | Action Number:<br>280623 |
| | Action Type:<br>[C-129] Venting and/or Flaring (C-129) |

**DEFINITIONS**

For the sake of brevity and completeness, please allow for the following in all groups of questions and for the rest of this application:

- this application's operator, hereinafter "this operator";
- venting and/or flaring, hereinafter "vent or flare";
- any notification or report(s) of the C-129 form family, hereinafter "any C-129 forms";
- the statements in (and/or attached to) this, hereinafter "the statements in this";
- and the past tense will be used in lieu of mixed past/present tense questions and statements.

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QUESTIONS

Action 280623

## QUESTIONS

| | |
|---|---|
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| | Action Number:<br>280623 |
| | Action Type:<br>[C-129] Venting and/or Flaring (C-129) |

**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 | *Unavailable.* |
| Incident Facility | **[fAPP2126640958] CORRAL #2 SOUTH COMP STATION** |

| **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 this vent or flare caused by an emergency or malfunction | Yes |
| Did this vent or flare last eight hours or more cumulatively within any 24-hour period from a single event | Yes |
| Is this considered a submission for a vent or flare 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 **at least 50 MCF** of natural gas vented and/or flared during this event | Yes |
| Did this vent or flare 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 vent or flare 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 | Other (Specify) |
| Additional details for Equipment Involved. Please specify | Emergency Flare > Opening of Corral Bluff Wells & Multiple 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 | 78 |
| Nitrogen (N2) percentage, if greater than one percent | 1 |
| Hydrogen Sulfide (H2S) PPM, rounded up | 0 |
| Carbon Dioxide (C02) percentage, if greater than one percent | 0 |
| 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.* |

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## QUESTIONS (continued)

| | |
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| | Action Number:<br>280623 |
| | Action Type:<br>[C-129] Venting and/or Flaring (C-129) |

**QUESTIONS**

| **Date(s) and Time(s)** | |
|---|---|
| Date vent or flare was discovered or commenced | 10/14/2023 |
| Time vent or flare was discovered or commenced | 12:55 AM |
| Time vent or flare was terminated | 03:19 PM |
| Cumulative hours during this event | 14 |

| **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 \| Released: 488 Mcf \| Recovered: 0 Mcf \| Lost: 488 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 this vent or flare a result of downstream activity | No |
| Was notification of downstream activity received by this operator | *Not answered.* |
| Downstream OGRID that should have notified this operator | *Not answered.* |
| Date notified of downstream activity requiring this vent or flare | *Not answered.* |
| Time notified of downstream activity requiring this vent or flare | *Not answered.* |

| **Steps and Actions to Prevent Waste** | |
|---|---|
| For this event, this operator could not have reasonably anticipated the current event and it was beyond this operator's control. | True |
| Please explain reason for why this event was beyond this operator's control | In this case, gas had to be flared rather than be compressed due to the opening of several Corral Bluff wells , which in turn began surging more gas than the compression equipment could handle, which then prompted sudden and unexpected compression malfunction to occur. Within a 24-hr period, there were several brief intermittent flaring episodes. All compression were running at maximized operational capacity when the Corral Bluff wells were being opened. Well surges occur from time to time, as they are unforeseeable and unanticipated, and can surge a large of volume of gas that compression equipment is not able to handle all at once, which triggers unexpected malfunctions to occur causing an automatic shutdown of the compression units, which in turn prompts unanticipated flaring to occur. 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. Compressor engines are designed to operate in a precise manner and when unexpected large volumes of well gas surges, it disrupts the operating manner, prompts a malfunction to occur, which then robs the compression engine of power, thus, causing an automatic shutdown of the unit. These brief intermittent flaring instances event could not have been foreseen, avoided, or prevented from happening as they occurred with no advance notice or warning. The duration and volume of this event is a collective of all intermittent flaring instances within a 24 hr-period. |
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| | |
|---|---|
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## ACKNOWLEDGMENTS

| | |
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| | Action Number:<br>280623 |
| | Action Type:<br>[C-129] Venting and/or Flaring (C-129) |

**ACKNOWLEDGMENTS**

| | |
|---|---|
| ☑ | I acknowledge that I am authorized to submit a *Venting and/or Flaring* (C-129) report on behalf of this operator and understand that this report can be **a complete** C-129 submission per 19.15.27.8 and 19.15.28.8 NMAC. |
| ☑ | I acknowledge that upon submitting this application, I will be creating a new incident file (assigned to this operator) to track any C-129 forms, pursuant to 19.15.27.7 and 19.15.28.8 NMAC and understand that this submission meets the notification requirements of Paragraph (1) of Subsection G and F respectively. |
| ☑ | I hereby certify the statements in this report are true and correct to the best of my knowledge and acknowledge that any false statement may be subject to civil and criminal penalties under the Oil and Gas Act. |
| ☑ | I acknowledge that the acceptance of any C-129 forms by the OCD does not relieve this operator of liability should their operations have failed to adequately investigate, report, and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment. |
| ☑ | I acknowledge that OCD acceptance of any C-129 forms does not relieve this operator of responsibility for compliance with any other applicable federal, state, or local laws and/or regulations. |

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## CONDITIONS

| | |
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**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. | 10/29/2023 |