

Bright Sky Environmental, LLC

Green Paper Series

Produced Gas Venting and Flaring in Texas: An Operator's Guide

Introduction

Produced gas from oil and gas operations is flared for many reasons, such as during the drilling and completion phase when the gas does not meet quality specifications for pipeline transport, the gas pipeline is down for maintenance or is over/under pressured, there is an emergency process situation at the facility that prohibits the safe transport of the gas, or the producing well lacks pipeline infrastructure to transport the gas to a processing plant.

There is a common misconception that produced gas flaring in Texas is regulated by a single agency and that all flaring is allowed indefinitely. In fact, natural gas flaring from oil and gas operations is regulated by both the Railroad Commission of Texas ("RRC") and the Texas Commission on Environmental Quality ("TCEQ"), and there are multiple permitting requirements across both agencies that operators must follow in order to flare gas. This "Green Paper" discusses general regulatory requirements for the RRC and the TCEQ and provides a guide of what to do if your facility needs to vent or flare produced gas.¹

General Regulatory Jurisdiction and Background

In Texas the RRC has primary regulatory jurisdiction over the oil and gas industry; meanwhile, the TCEQ is the environmental agency for the state. The RRC regulations focus on permitting flaring operations to maximize production and prevent the waste of natural resources. The TCEQ is the state's air permitting authority, responsible for enforcing state and federal regulations concerning air emissions and air quality issues related to flaring. In general, TCEQ rules for oil and gas operations are applicable after a well is drilled and completed, and in the producing stage. RRC rules apply to operations both during drilling and completion and production phases.



Regulations from these two agencies include permitting and emergency reporting requirements. This analysis applies specifically to venting and flaring produced gas during the well's production phase, and does not cover tank vapors, amine and dehydration units, fugitive emissions, or blowdown gas from maintenance events.

RRC Oil and Gas Division Rules

RRC Statewide Rule 32 (16 Texas Administrative Code ("TAC") §3.32) regulates gas well gas and casinghead gas venting and flaring. Under the RRC rules, an operator can vent natural gas to the atmosphere from regulated activities for up to 24 hours. After 24 hours, the natural gas must be flared if it can be accomplished safely. Venting may not be allowed for safety reasons (e.g., high concentrations of hydrogen sulfide) or if another regulation (e.g., EPA, TCEQ) requires recovery or flaring.

¹ Please note that this Green Paper should not be considered a substitute for an individual analysis for your facility - Bright Sky encourages an individual regulatory analysis of every venting or flaring scenario.

Oil and Gas Production Operations - Gas Releases

All gas produced and released from oil and gas production operations must be metered and reported to the RRC on monthly Production Reports. An exception (permit) is required by the RRC if venting or flaring is beyond the limits set in the following instances (keeping in mind the 24-hour venting limit/requirement to flare discussed above, which is still applicable in these instances):

- 10 producing days after initial well completion, recompletion in another field, or workover in the same field.
- Gas from well unloading and cleanup operations may be vented up to 24 continuous hours or up to 72 hours in one calendar month.
- In the event of a gas plant or pipeline upset, gas from a lease production facility may be released for up to 24 hours.
- Waste gas from membrane unit or molecular sieve gas separation systems may be released provided that at least 85% of inlet gas is recovered and directed to legal use.
- Low-pressure separator gas, that is less than or equal to 15 MSCFD for gas wells, or 50,000 SCFD for oil leases or commingling points.
 - Gas must pass through separator, heater-treater, free-water knockout, or other low-pressure equipment before release.

Venting Sour Gas

RRC Statewide Rule 36 (16 TAC §3.36) regulates intentional and accidental releases of hydrogen sulfide (H₂S) with concentrations greater than 100 ppmv. For intentional releases of a potentially hazardous volume of hydrogen sulfide gas, the gas must be flared unless permission to vent is obtained from the commission or its delegate. Venting will be allowed only upon a showing that the venting will not pose an unreasonable risk of harm to the public.

Gas Gathering Systems, Gas Plants, or Gas Handling Operations - Gas Releases

Gas may be released for up to 24 hours in the event of a pipeline or gas plant upset.

- **Notification** to the local District Office is required as soon as reasonably possible after release begins.
- If the release extends beyond 24 hours, the gas plant operator must file an **exception request** within one business day after the first 24 hours of release. Justification of the necessity for the release beyond 24 hours is required with the exception request.

The RRC can extend the above-listed activities based on site-specific needs that can be justified. RRC staff issue flare permits administratively for 45 days at a time, for a maximum limit of 180 days. Extensions beyond 180 days must be granted through a Commission Final Order.

TCEQ Rules

An air permit is required in most instances for routine venting and flaring of natural gas at an oil and gas production facility. 30 TAC §116 requires oil and gas handling and production facilities with the potential to emit air emissions to obtain an air permit from the TCEQ before construction commences. The TCEQ uses air Permits by Rule (“PBR”), Standard Permits, and individual air permits to authorize routine air emissions. These permits require air pollution controls and process designs to limit venting and flaring of gas from production facilities. The type of authorization required will depend on the type of facility and the quantity of contaminants emitted.

For most single-well sites that are permitted with a PBR, the bright-line to consider is that a PBR limits emissions of tons volatile organic compounds (VOCs) to 25 tons per year from **all** sources. A good rule-of-thumb is that 100 MMSCF of flared Texas gas would emit approximately 25 tons of VOC. If a facility emits more than 25 tons of VOC per year from all sources, it must obtain a more-complex and restrictive Standard Permit or NSR permit prior to continued flaring or production at the site.

Emergency and upset events from venting and flaring of natural gas may be reportable emissions events to the TCEQ, if not handled by an air permit. Reportable emissions events are unauthorized emissions from any emissions point equal to or greater than a reportable quantity (“RQ”) in any 24 hours. See 30 TAC §101.1 for the definition of an RQ in Texas. Typically, the limiting pollutants in the Eagle Ford, Barnett Shale, and Permian Basins are 10 pounds of benzene, 5,000 pounds of natural gas, or 100 pounds of H₂S. Upset reports to the TCEQ are due no later than 24 hours of the discovery of the reportable event. If an operator knows that there will be a planned maintenance, startup, or shutdown event that will trigger an RQ, it must notify the TCEQ in advance.

Strategies for Air Permitting

- If obtaining a PBR, incorporate as much flaring as possible into the permit so that total VOC emissions approach, but do not exceed 25 tons per year. This will allow flexibility to flare with authorization such that the likelihood of having an RQ is reduced.
 - Monitoring flaring activity, preferably by collecting daily automated data. If the total actual annual gas flared begins to approach permit limits, it is time to evaluate obtaining a new permit.
- If obtaining a Standard Permit, incorporate as much flaring as possible into the permit such that hourly and annual flared flow do not exceed permit limits.

Steps to Follow if You Need to Vent or Flare

We often find that operators have separate regulatory and environmental departments that tend to work independently. In the case of flaring, we encourage collaboration between both departments to ensure rules from both agencies are followed properly.

Venting Produced Gas

1. Venting gas can pose safety and environmental concerns. Route the gas to flare in every case if possible.
2. Notify RRC of the venting event as soon as possible, especially if H₂S is present.
3. If the air permit contains no venting scenarios, determine if the venting event is a reportable event by comparing the emissions to those in 30 TAC §101.1.
 - a. Report to TCEQ if applicable.
4. Venting past 24 hours is not allowed by RRC. Flare or shut-in.

Flaring Produced Gas at a Producing Well

1. Ensure flaring is included in your air permit, or obtain the proper air permit.
2. If you need to flare more than 50,000 cubic feet of gas per day for more than 10 days after completion/recompletion/workover, obtain a 45-day flaring permit from RRC.
3. Meter the flared gas and report in RRC monthly production reports.
4. Maintain a rolling air emissions calculation workbook to confirm flaring is within air permit limits. If the site approaches the permitted flaring limit, revise the air permit or obtain a new (and more complex) air permit.
5. Ensure your flare is designed and operating according to EPA and TCEQ regulations.
6. Work with facility engineering to reduce or end routine produced gas flaring.

For More Information

Bright Sky Environmental staff have worked with operators to obtain hundreds of TCEQ air permits and RRC flaring permits. We also support oil and gas companies with compliance projects to track, report, calculate, and reduce venting and flaring activities.

Contact us to conduct an initial complimentary venting or flaring analysis of your facility or to assist your team with preparing permits.



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