



# **Final-Form Rulemaking: Control of VOC Emissions from Oil and Natural Gas Sources**

Environmental Quality Board  
March 15, 2022

Tom Wolf, Governor

Patrick McDonnell, Secretary

# Basis of the Final Rulemaking

- Establishes VOC emission limitations and other requirements consistent with the RACT recommendations in EPA's Control Techniques Guidelines (CTG) for the Oil and Natural Gas Industry issued on October 27, 2016.
- **RACT = Reasonably Available Control Technology**
  - Considers technological and economic feasibility
- The Commonwealth is required to submit a SIP revision to EPA by June 16, 2022, addressing the RACT requirements to avoid sanctions.

# Elements of the Final Rulemaking

- Establishes requirements for:
  - Storage vessels
  - Natural gas-driven continuous bleed pneumatic controllers
  - Natural gas-driven diaphragm pumps
  - Reciprocating and centrifugal compressors
  - Fugitive emissions components
- Establishes compliance dates and compliance demonstration requirements for the above sources

# Public Participation

- The proposed rulemaking was published on May 23, 2020, for a 66-day public comment period that ended on July 27, 2020.
- Three public hearings were held and 128 people providing testimony.
- EQB received 4,510 written comments, including letters and petitions with multiple signatories.

# General Supportive Comments

- Supportive of the efforts in Pennsylvania which balance societal, environmental, energy, and economic objectives.
- Economic benefits of the proposed rulemaking are well thought out and documented both quantitatively and qualitatively in the proposal.
- Pennsylvania has some of the strongest emission requirements in the nation; the State Review of Oil and Natural Gas Regulations have rated Pennsylvania's oil and natural gas program highly, and other state regulatory agencies use Pennsylvania's program as a reference.

# General Adverse Comments

- Concerns that the Department is not meeting its obligations to protect Pennsylvania's air, land, and water from pollution, nor providing for the health and safety of its citizens through a cleaner environment.
- Claims that the EQB failed to adhere to requirements in Act 52 because the rulemaking does not distinguish conventional from unconventional oil and natural gas operations in the proposed rulemaking.
- The Commonwealth cannot afford to neglect the looming climate crisis and its impacts on public health and the environment, including environmental justice communities.

## Specific Section Comments

- Storage vessel applicability threshold should be higher or lower.
- Pneumatic controllers should be limited to continuous bleed pneumatic controllers.
- Standards for compressors should be applied to well sites.
- The low-production well exemption for wells that produce, on average, 15 **barrels of oil equivalent (BOE)** per day and the step-down provision should be removed.
- The frequency of instrument-based **Leak Detection and Repair (LDAR)** requirements should be higher or lower than in the proposed rulemaking.

# Key Changes from Proposed

## **Storage vessels**

- Applicability for 95% VOC control is reduced to 2.7 tons per year (TPY) threshold for all storage vessels.
- Maximum daily average throughput changed to monthly average throughput to calculate actual VOC emissions.

## **Natural gas-driven continuous bleed pneumatic controllers**

- Changed the term natural gas-driven pneumatic controller to natural gas-driven *continuous bleed* pneumatic controller for clarity. Also clarified which controllers need to be tagged.



# Key Changes from Proposed

## Fugitive emissions components

- Removed 2% leak step-down provision and replaced it with the production-based provision.
- A well site producing, on average, equal to or greater than 15 BOE per day, with at least one well producing, on average, equal to or greater than 15 BOE per day, must perform quarterly LDAR inspection.
- A well site producing, on average, equal to or greater than 15 BOE per day, and at least one well producing, on average, equal to or greater than 5 BOE per day but less than 15 BOE per day must perform annual LDAR inspections. Operators in this category can request an exemption from the annual instrument-based LDAR inspection on a case-by-case basis.

# Key Changes from Proposed

## **Compressors**

- Changed the applicability for reciprocating compressors to require rod packing changes for reciprocating compressors located at well sites. Allowed routing the VOC emissions from a reciprocating compressor to a control device in addition to a process.

## **Covers and closed vent systems**

- The requirements for initial AVO inspections were changed from 30 days to 60 days after the effective date of the final-form rulemaking.

## **Recordkeeping and reporting**

- Minor edits were made to reflect the reduction to 2.7 TPY threshold for storage vessels and refer to natural gas continuous bleed pneumatic controllers.

# Affected Parties

- DEP identified 5,039 operators of affected facilities in this Commonwealth using the eFACTS database and the NAICS codes covered by the CTG, and estimates that 3,834 of these facility operators may meet the definition of small business.
- DEP estimates that the owners and operators of approximately 30,648 well sites, 486 gathering and boosting stations, 120 transmission stations, and 15 natural gas processing plants may have sources that are affected by this final rulemaking.
- DEP estimates owners and operators of approximately 18 facilities with storage vessels, 34,856 facilities with pneumatic controllers, 17 facilities with diaphragm pumps, 448 facilities with reciprocating compressors, and 2,976 facilities with fugitive emissions components are subject to this final rulemaking.

# Economic Impacts

- Overall, the expected total cost to industry will be approximately \$31.7 million per year with approximately \$20.3 million per year in savings of recovered natural gas at a price of \$1.70/Mcf.
- This equates to costs of, on average, \$6,285 gross cost per operator or \$2,263 net cost per operator.
- Implementing the requirements of the final rulemaking will:
  - Contribute to attaining and maintaining the 2008 and 2015 8-hour ozone NAAQS which may result in \$63 million or more in health benefits for the Commonwealth.
  - Help protect over 600,000 jobs and \$163 billion in revenue in the agriculture and forestry industries.

# Environmental Impacts

- Total estimated emissions reductions from this final rulemaking across the oil and natural gas industry are 12,068 TPY VOC and 221,066 TPY methane (co-benefit).
  - An increase of 7,774 TPY VOC and 145,481 TPY methane over the reductions estimated in the proposed rulemaking.
- Total estimated emissions reductions include 714 TPY VOC and 11,913 TPY methane due to changes made to the final rulemaking.
- The final rulemaking will allow the Commonwealth to make substantial progress in achieving and maintaining the 8-hour ozone NAAQS statewide.

# Advisory Committee Review

- DEP consulted with the following advisory committees in preparation of this final rulemaking:
  - Air Quality Technical Advisory Committee on December 19, 2021
  - Citizens Advisory Council on January 18, 2022
  - Small Business Compliance Advisory Committee on January 27, 2022

# Recommendation

The Department recommends the Board adopt this final rulemaking for publication in the *Pennsylvania Bulletin* as a final-form regulation.



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