

# As COP26 Begins in Glasgow, at Home EPA Releases Bold Proposal on Oil and Gas Methane Emissions: Four Elements Worth Knowing



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Building on the Biden Administration’s [strategy](#) to achieve net-zero greenhouse gas (GHG) emissions by 2050, and as world leaders begin gathering in Glasgow, Scotland, yesterday, the US Environmental Protection Agency (EPA) issued a [proposal](#) under the Clean Air Act to significantly expand regulation of methane from oil and gas operations in the United States. The [proposal](#)—issued in conjunction with measures proposed by at least five other cabinet-level agencies to address GHG emissions—is part of President Biden’s “whole of government”

approach to addressing climate change and represents EPA's most ambitious regulatory effort to date to curb oil and gas sector emissions. EPA estimates compliance costs of **\$12 billion** (present value, 3% discount rate) for existing sources, which it indicates would be offset by an estimated **\$4.7 billion** (present value) through the capture of natural gas pursuant to the fugitive emission requirements in the proposal.

Four key areas of the proposal to understand are:

1. **Increasing Stringency of Current Standards for New/Modified/Reconstructed Facilities**: EPA proposes to increase stringency of the current *new* source performance standards (NSPS) for GHGs and volatile organic compounds (VOCs) for the Crude Oil and Natural Gas source category. The proposed standards would be codified in a new section of the federal regulations, 40 C.F.R. Part 60, Subpart OOOOb ("Quad Ob"). At the end of this post is EPA's Table 2 from the proposal summarizing the new proposed standards in Quad Ob. EPA's proposal for new, modified, and/or reconstructed sources in oil and natural gas would expand and make more stringent regulatory requirements currently in place under the NSPS 40 C.F.R. Part 60, Subparts OOOO ("Quad O") and OOOOa ("Quad Oa").

In a unique, but not wholly unprecedented approach, EPA has withheld at this time the language that it would include in a regulation if one were issued. Instead, it seeks comment and states that it will issue a *supplemental* proposal in 2022 to make that language available for public comment. This approach could have been chosen for any one or a combination of the following reasons:

- **Time**: The proposal is being issued "quickly" as regulatory proposals go, less than a year after the administration took office—typically, it would take at least two years to issue a nearly 600-page proposed regulatory action, and even accounting for the fact that the Administration is building on prior actions, much of it is brand new. Thus, there simply may not have been time to develop the language.
- **Complexity**: The number of changes being suggested and their interaction with a series of regulatory provisions that previously were issued, rescinded, subject a Congressional Review Act (CRA) action, means that the task is challenging.
- **OMB**: All regulatory proposals and final actions require review by the Office of Management and Budget's Office of Information and Regulatory Affairs (OMB and OIRA). This proposal underwent an expedited review at OMB, passing through the system in less than 60 days. Although OMB is charged with completing reviews in 90 days, it is far more typical to see proposals take upwards of 120 days to clear OMB. For such a massive regulatory package, the complexity of adding this language could have been a factor.
- **Signal Openness to Key Constituencies**: By not proposing regulatory language and seeking comment on the scope of its ultimate proposal, EPA signals potentially to others that there may be additional opportunities to

push the proposal further.

EPA invites public input about the proposed modified standards and about additional sources that may further reduce methane and VOC emissions from the oil and natural gas sector. See [here](#) for a table that EPA issued listing the sources covered under the current and proposed standards.

2. **Regulating Existing Oil and Gas Sources Currently Covered by State Rules or Addressed by Industry Best Practices But Not Previously Regulated by EPA**: Section 111, which authorizes NSPS—the *new* source performance standards, under subsection (b)—can also lead to and may require regulation of *existing* sources, which would occur pursuant to subsection (d) of Section 111. States have been regulating existing oil and gas sources extensively for many years, but the federal government has not yet taken action on them, with some stakeholders viewing federal regulation as duplicative of and potentially conflicting with already sound state programs and other stakeholders seeking uniformity and a federal right to bring citizen enforcement of standards, which does not generally exist under state regulations.

EPA now proposes Emissions Guidelines (EGs) for *existing* sources in the Crude Oil and Natural Gas source category for states to follow in developing, submitting, and implementing state plans to establish existing source performance standards to limit GHGs. The proposed EGs would reside in a new section of the federal regulations, 40 C.F.R. Part 60, Subpart OOOOc (“Quad Oc”). The proposed EGs include “presumptive standards” for the same types of facilities that are covered by the NSPS, with the exception of well completions and liquids unloading. According to the proposal, the presumptive standards are intended to provide states with a starting point in their plans, which EPA believes “reflect the emission reductions achievable by applying the Best System of Emission Reduction (BSER) that the EPA Administrator determines has been adequately demonstrated.” At the end of this post are EPA’s Tables 3, 20, and 21 from the proposal summarizing the proposed technology determinations and presumptive standards for GHGs from existing facilities in Quad Oc.

On the whole, the ***proposed presumptive existing source standards generally mirror the new source standards*** EPA is proposing for new, modified and reconstructed sources. And as noted above, those new source standards ratchet up the stringency of what is already in place for the sector.

To be sure, many companies are already implementing the types of programs that would be called for by these regulations, either voluntarily or under state and local regulations. But even where companies are already implementing in practice the core elements of a proposed regulation, such as leak detection and repair, the transformation of such elements into enforceable obligations subject to compliance certifications “ups the compliance risk ante”—companies need to review the proposal carefully to ensure that when it comes to complying with the detailed requirements, they understand what will be required and what they must certify to the government they have done (and report deviations) on an annual basis. This task is somewhat complicated by the fact that regulatory language is not available at this time, which is a critical aspect of analyzing the impacts of a rule. At the same time, regulated entities can treat this as an *opportunity* for to provide input on key aspects

of how EPA should craft the regulatory language for the existing sources to take into account practical compliance concerns from the outset. And when the proposed regulation text is made available in early 2022, careful examination and comment will be in order and a key to success in complying with whatever regulations are issued. Finally, though state plans may differ from the federal existing source emissions guidelines, in practice, we see states largely adopt the federal language, which sets a stringency floor for state plans.

3. **Amendments to the 2020 Technical Rule**: Another important aspect of the proposal is that it would revise Quad Oa to (1) rescind the revisions to the VOC fugitive emissions monitoring frequencies at well sites and gathering and boosting compressor stations in the Technical Rule as EPA believes “those revisions were not [well] supported” and (2) adjust other modifications made in the Technical Rule to address implementation issues that result from the CRA disapproval of the Policy Rule. These changes are important and may have more practical implications worth addressing in comments than the switch regarding regulation of methane from the sector, as many companies have publicly stated that they favor methane regulation and are already subject to extensive regulation at the state level.
4. **Implementing the Congressional Review Act Resolution That Repealed the Trump Administration’s 2020 Policy Rule**: In September 2020, EPA issued a regulation that rescinded the Obama Administration’s determinations regarding the appropriateness of regulating the Transportation and Storage segment of the oil and gas sector, while supporting the propriety of regulating the Processing and Production segment for VOCs, but not for GHGs (again due largely to statutory process concerns). The crux of that action was a determination that the proper procedure had not been followed under Section 111 to regulate Transportation and Storage activities at all and to regulate methane from the Production and Processing segment, though such a procedure could be followed in the future and if it were, such regulations could be issued. This action was commonly referred to as the “2020 Policy Rule,” in part because it was issued in tandem with a “2020 Technical Rule” that made several changes to the Quad O and Quad Oa regulations related to implementation of the requirements that had been issued previously.

In June 2021, pursuant to a Congressional Review Act (CRA) resolution, the 2020 Policy Rule was rescinded. The 2021 CRA resolution nullified the 2020 Policy Rule and thereby reinstated regulation of VOC and methane emissions for the Transportation and Storage segment and for methane emissions for the Production and Processing segments. The 2020 Technical Rule was not a part of the CRA resolution. The proposal on November 2 states that it aims to implement in regulatory language the effect of the CRA Resolution rescinding the 2020 Policy Rule, which largely involves adding the word “GHGs” as well as deleting Transportation and Storage segment definitions and applicability provisions back into the rule. While seemingly straightforward, the impacts of what appear to be simple changes are more complex than first meets the eye, as reflected in an EPA Q&A document issued earlier this summer.

## **Other Notable Aspects of the Proposal for Consideration**

- *Provision for empowering local / citizen inspectors.* EPA is requesting comments on approaches to provide substantial new abilities for local communities to engage in compliance matters for oil and gas sources. The proposal references a Methane Detection Technology Workshop where state and local governments, industry, researchers, and NGOs identified advanced technologies to better understand the detection of, source of, and factors that lead to large emission events. EPA is seeking comment on how to increasingly use these technologies to help identify and remediate large emission events. Specifically, EPA seeks comments on how to evaluate, design, and implement a program whereby communities and others could identify large emission events and provide that information to owners and operators for subsequent investigation and remediation of the event. EPA envisions “a program for finding large emission events” that would require emissions above a “defined threshold by a community, a Federal or State agency, or any other third party, [where] the owner or operator would be required to investigate the event, do a root cause analysis, and take appropriate action to mitigate the emissions, and maintain records and report on such events.” Proposal at 248-249 (pre-publication).
- *Environmental Justice Considerations.* One of the hallmarks of the administration has been its stated commitment to environmental justice (EJ), which is defined as “fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations, and policies.” Fair treatment means, “no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations or policies.” Meaningful involvement means that people have an opportunity to participate in decisions about activities that may affect their environment and/or health, such contribution can influence the regulatory agency’s decision, community concerns will be considered in the decision-making process, and decision-makers will seek out and facilitate the involvement of those potentially affected.

With respect to specific EJ benefits of the proposal, EPA provides an [EJ Fact Sheet](#) which indicates that if finalized, EPA is “confident that” it “would improve public health protection in communities living near oil and gas facilities, including communities with [EJ] concerns.” The EJ Fact Sheet also cites reductions in “VOCs, which contribute to harmful smog and fine particle pollution” and “air toxics” benefits. Although a detailed assessment of community-level benefits is not included, EPA states that it conducted a “baseline” analysis to determine if certain EJ concerns existed, which indicated that Hispanic populations, Native Americans, and children 17 and younger may experience disproportional exposures to ozone pollution from VOC emissions from the oil and natural gas industry. EPA affirmatively seeks comment on “key assumptions used in the [EJ] analysis” and new information to conduct a more detailed “analysis of risk in the future.”

To meet the meaningful participation aspect of the EJ definition, on November 16-17, EPA is conducting training that will include details of the oil and gas production process, an overview of the proposed rule, panel discussions with EJ communities and tribes, and explanations of how to engage effectively in the regulatory process.

And, when state plans are eventually adopted, the regulations would require states to hold at least one public hearing on the plan before submitting to EPA for approval. The proposal also would require states to undertake meaningful outreach and engagement with overburdened and underserved communities during plan development.

- *Proposed BSER and Proposed Standards of Performance for GHGs and VOCs.* The proposal details a Best System of Emission Reductions (BSER) determination and related standards of performance for new, modified, and reconstructed sources under the new provisions at Quad Ob and Quad Oc. These include notable changes from the current standards, including a “co-proposal” to allow well sites with total site-level baseline methane emissions of 3 tpy or greater and less than 8 tpy to conduct semiannual, rather than quarterly, monitoring.
- *Analysis of Costs and benefits.* EPA projects emissions reductions, costs, and benefits that may result from the proposal in its [Regulatory Impact Analysis](#) (RIA), which covers the period from 2023 to 2035. There are a number of issues ripe for comment in the RIA, including EPA’s reliance on the Technical Support Document for the Social Cost of Carbon developed earlier this year to estimate global social benefits of methane emission reductions expected from the proposed rule. In addition, we note that the estimated costs associated with the proposal exceed the estimated costs of the Clean Power Plan finalized during the Obama Administration. As mentioned above, EPA’s RIA estimates compliance costs of **\$12 billion** (present value) for existing sources under the proposed Quad Oc (3% discount rate) and that these compliance costs would be offset by product recovered worth an estimated **\$4.7 billion** (present value) through the capture of natural gas in compliance with the fugitive emission requirements in the proposal. While the gross numbers are of interest, perhaps greater insight can be obtained by reviewing EPA’s numerous standard-specific cost estimates (e.g., dollars per ton of methane reduced). Companies should review these values to assess whether their cost experience is likely to match up with EPA’s estimates as it is these values that serve as the building blocks for the costs. Similarly, they rely on estimated reductions that would be credited to this regulatory action. Thus, if companies have information on current and projected emissions effects, those would be appropriate subjects for comment on the proposal.
- *What to Expect on Timing and Scope.* In any ambitious rulemaking such as this one, a key consideration for the sponsoring administration is how many of its regulatory objectives may be accomplished within the timeframe available. EPA has moved quickly on this proposal by issuing it within a mere nine months of President Biden’s inauguration. Nonetheless, much more work remains to be done to establish a final rule by the year-end 2022 goal. Due to the complexity and breadth of the proposal, requests for extensions of the comment period can be expected, and with most such proposals, at least some extensions are typically granted (e.g., 30 or 60 days). The administration will need to prioritize not only among rulemakings (i.e., other regulatory topics on its agenda), but also within each rulemaking, and of course, needs to consider whether it can also move a final rule through litigation, to avoid the current reconsideration, rule re-issuance, and litigation vicious cycle that inevitably occurs. At least



some delay could occur since EPA has not proposed regulatory language for either Quad Ob or Quad Oc. Those actions will require a supplemental proposed rule, with the attendant requirements for OMB review and public comment, including potentially public outreach to tribal and EJ communities. EPA also states that it anticipates including in this supplemental proposal new regulations that would cover additional sources in the source category (e.g., abandoned wells, pipeline pigging operations and other pipeline blowdowns, tank truck loading operations, etc.), based upon information and comment collected in response to the notice on November 3, the final actions for the sector may be staged, with some aspects being finalized, while others are undergoing the required rulemaking process to become regulatory requirements.

**Deadlines and Comments:** Comments on the proposal are due within 60 days of *Federal Register* publication. A 2 to 3 day virtual public hearing is scheduled for 15 days after publication, and the deadline to register to speak is 9 days after publication.

## Specific Comment Requests

Although EPA seeks public comment on all aspects of the proposal to enable the Agency to develop a final rule that, consistent with the Agency's responsibilities under CAA Section 111, "achieves the greatest possible reductions in methane and VOC emissions while remaining achievable, cost-effective, and conducive to technological innovation." EPA also specifically requests public comment on certain "[key areas](#)" of the proposal, including the following:

- ◦ *Finding and repairing leaks (fugitive emissions).* EPA seeks input on a number of issues related to the comprehensive monitoring program included in the proposal, including information on available advanced monitoring technologies, ways to ensure fugitive emissions surveys identify malfunctions and large emissions sources that must be repaired, and whether to adjust repair requirements based on the severity of emissions, among other things.
- *Transition to Zero-Emitting Pneumatic Controllers.* EPA seeks input on potential control options that could demonstrate compliance with a standard of zero-emitting pneumatic controllers, and information on specific functional needs that would require a low-bleed or intermittent controller.
- *Eliminating Venting of Associated Gas from Oil Wells.* EPA seeks input on various aspects of its proposal to eliminate venting of associated gas from oil wells and to require this gas to be routed to a sales line where available or, where a sales line is not available, to use the gas for onsite power or another useful purpose, or to route it to a flare or control device that reduces methane and VOCs by 95 percent.
- *Strengthening Requirements for Storage Tanks.* EPA seeks input on a number of issues related to its proposal to add tank batteries to the definition of facilities that must reduce VOC and methane emissions.

- *Broadening Types of Regulated Pneumatic Pumps.* Related to its proposal to expand current requirements for new pneumatic pumps to include all natural gas-driven diaphragm and piston pumps in the production segment of the industry, and diaphragm pumps in the transmission and storage segment, EPA seeks input on the extent to which these pumps are used in the natural gas transmission and storage segments and whether it is technically feasible to require the use of zero-emitting pneumatic pumps at new and existing facilities with access to electric power or solar power.
- *Evaluating Additional Sources of Pollution.* EPA seeks input relevant to its evaluation of whether to include a number of additional sources within the scope of NSPS regulation, including abandoned and unplugged wells, pipeline pigging operations, and tank truck loading operations. EPA also seeks comment on opportunities that may exist to improve performance and minimize malfunctions at flares.
- *Establishing Existing Source Standards in State Plans.* EPA seeks input on various aspects of the proposal related to state plans under the proposed EGs, including ways that existing state programs can be adopted into state plans under the EGs and how state plans that regulate both sources covered by the proposed EGs and sources *not* covered by the proposed EGs could be tailored to meet the requirements of the proposal.

After Federal Register publication, the docket will be available and the proposal states that there will be a memorandum with additional specific comment requests by section and topic.

\* \* \*

EPA's November 2<sup>nd</sup> action represents the latest chapter in a multi-decadal effort to define the oil and natural gas source category regulated under the NSPS and to set appropriate standards for this category. The current effort is the most ambitious to date, and, despite EPA's optimistic projection of having a final rule in place by the end of 2022, the realities of the rulemaking process and what is notably absent from this proposal indicate that there may be phases of rulemaking. Even though many companies and trade associations have supported and continue to support methane regulation, the details of the regulatory provisions matter. It is important that they actually implement the stated objectives, that companies can understand them and achieve compliance with them, and that the costs are appropriately reflected and the benefits accurately characterized. The legal issues raised under the Clean Air Act are also important because even where the policy result generates consensus, it is important that legal principles upon which those policy results are based are sound, as each regulatory action can be cited as precedent on legal issues for future actions, on which such consensus may not exist.

Thus, with the proposal's scope and the significant issues it presents for the regulated community—including cost-effectiveness, technical feasibility, and implementation burden—it will be particularly important for industry to offer technical expertise and practical input during the rulemaking process to guide final rule development and to ensure the development of a robust administrative record on the key issues.



**TABLE 2 FROM EPA METHANE PROPOSAL: SUMMARY OF PROPOSED BSER AND PROPOSED STANDARDS OF PERFORMANCE FOR GHGS AND VOC (NSPS 0000b)**

| Affected Source  | Proposed BSER  | Proposed Standards of Performance for GHGs and VOCs   |
|--|--|---|
| Fugitive Emissions: Well Sites with Baseline Emissions >0 to <3 tpy <sup>1</sup> Methane.  | Demonstrate actual site emissions are reflected in calculation.              | Perform survey to verify that actual site emissions are reflected in calculation.   |
| Fugitive Emissions: Well Sites ≥3 tpy Methane.   | Monitoring and repair based on quarterly monitoring using OGI.               | Quarterly OGI monitoring following Appendix K. (Optional quarterly EPA Method 21 monitoring with 500 ppm defined as a leak).<br><br>First attempt at repair within 30 days of finding fugitive emissions. Final repair within 30 days of first attempt.   |
| (Co-proposal) Fugitive Emissions: Well Sites with Baseline Emissions ≥3 to <8 tpy Methane. | Monitoring and repair based on semiannual monitoring using OGI.              | Semiannual OGI monitoring following Appendix K. (Optional semiannual EPA Method 21 monitoring with 500 ppm defined as a leak).<br><br>First attempt at repair within 30 days of finding fugitive emissions. Final repair within 30 days of first attempt. |
| (Co-proposal) Fugitive Emissions: Well Sites with Baseline Emissions ≥8 tpy Methane.       | Monitoring and repair based on quarterly monitoring using OGI <sup>2</sup> . | Quarterly OGI monitoring following Appendix K. (Optional quarterly EPA Method 21 monitoring with 500 ppm <sup>3</sup> defined as a leak).<br><br>First attempt at repair within 30  |

| Affected Source   | Proposed BSER   | Proposed Standards of Performance for GHGs and VOCs   |
|---|---|---|
| Fugitive Emissions: Compressor Stations.  | Monitoring and repair based on quarterly monitoring using OGI.  | <p>Quarterly OGI monitoring following Appendix K. (Optional quarterly EPA Method 21 monitoring with 500 ppm defined as a leak).</p> <p>First attempt at repair within 30 days of finding fugitive emissions.</p> <p>Final repair within 30 days of first attempt.</p> |
| Fugitive Emissions: Well Sites and Compressor Stations on Alaska North Slope.                           | Monitoring and repair based on annual monitoring using OGI.   | <p>Annual OGI monitoring following Appendix K. (Optional annual EPA Method 21 monitoring with 500 ppm defined as a leak).</p> <p>First attempt at repair within 30 days of finding fugitive emissions.</p> <p>Final repair within 30 days of first attempt.</p>       |
| Fugitive Emissions: Well Sites and Compressor Stations.   | (Optional) Screening, monitoring, and repair based on bimonthly screening using an advanced measurement technology and annual monitoring using OGI. | (Optional) Alternative bimonthly screening with advanced measurement technology with annual OGI monitoring following Appendix K.  |
| Storage Vessels: A Single Storage Vessel or Tank Battery with PTE <sup>4</sup> of 6 tpy or More of VOC. | Capture and route to a control device.  | 95 percent reduction of VOC and methane.  |
| Pneumatic Controllers: Natural Gas Driven that Vent to the Atmosphere.                                  | Use of zero-emissions controllers.  | VOC and methane emission rate of zero.  |

| <b>Affected Source</b>   | <b>Proposed BSER</b>   | <b>Proposed Standards of Performance for GHGs and VOCs</b>  |
|--|--|---|
| Pneumatic Controllers: Alaska (at sites where onsite power is not available - continuous bleed natural gas driven).  | Installation of low-bleed pneumatic controllers.   | Natural gas bleed rate no greater than 6 scfh <sup>5</sup> .  |
| Pneumatic Controllers: Alaska (at sites where onsite power is not available - intermittent natural gas driven).  | Monitor and repair through fugitive emissions program.   | OGI monitoring and repair of emissions from controller malfunctions.  |
| Well Liquids Unloading.  | Perform liquids unloading with zero methane or VOC emissions. If this is not feasible for safety or technical reasons, employ best management practices to minimize venting. | Each affected well that unloads liquids employ techniques or technology(ies) that eliminate or minimize venting of emissions during liquids unloading events to the maximum extent. |
| <b>Co Proposal Options:</b>  |  |   |
| <i>Option One</i> - Affected facility would be defined as every well that undergoes liquids unloading.   |  |   |
| -If the method is one that does not result in any venting to the atmosphere, maintain records specifying the technology or technique and record instances where an unloading event results in emissions. |  |   |
| -For unloading technologies or techniques that result in venting to the atmosphere, implement BMPs <sup>6</sup> to ensure that venting is minimized.   |  |   |

**Affected Source Proposed BSER**

**Proposed Standards of Performance for GHGs and VOCs**

*Option Two* - Affected facility would be defined as every well that undergoes liquids unloading using a method that is not designed to eliminate venting.

-Wells that utilize non-venting methods would not be affected facilities that are subject to the NSPS 0000b. Therefore, they would not have requirements other than to maintain records to document that they used non-venting liquids unloading methods.

-The requirements for wells that use methods that vent would be the same as described above under Option 1.

Wet Seal Centrifugal Compressors (except for those located at single well sites).

Capture and route emissions from the wet seal fluid degassing system to a control device or to a process.

Reduce emissions by 95 percent.

Reciprocating Compressors (except for those located at single well sites).

Replace the reciprocating compressor rod packing based on annual monitoring (when measured leak rate exceeds 2 scfm<sup>7</sup>) or route emissions to a process.

Replace the reciprocating compressor rod packing when measured leak rate exceeds 2 scfm based on the results of annual monitoring or collect and route emissions from the rod packing to a process through a closed vent system under negative pressure.

Pneumatic Pumps: Natural Gas Processing Plants.

A natural gas emission rate of zero.

A natural gas emission rate of zero from diaphragm and piston pneumatic pumps.

|   |  |  |
|---|--|--|
| <p>Pneumatic Pumps: <b>Affected Source Segment.</b></p>                         | <p>Route diaphragm and piston pumps to an existing control device or process.</p>    | <p><b>Proposed Standards of Performance for GHGs and VOCs</b></p> <p>95 percent control of diaphragm pumps if there is an existing control or process on site. 95 percent control not required if (1) routed to an existing control that achieves less than 95 percent or (2) it is technically infeasible to route to the existing control device or process.</p>   |
| <p>Pneumatic Pumps: Transmission and Storage Segment.</p>                       | <p>Route diaphragm pneumatic pumps to an existing control device or process.</p>     | <p>95 percent control of diaphragm pneumatic pumps if there is an existing control or process on site. 95 percent control not required if</p> <p>(1) routed to an existing control that achieves less than 95 percent or (2) it is technically infeasible to route to the existing control device or process.</p>  |
| <p>Well Completions: Subcategory 1 (non-wildcat and non-delineation wells).</p> | <p>Combination of REC<sup>8</sup> and the use of a completion combustion device.</p> | <p>Applies to each well completion operation with hydraulic fracturing.</p> <p>REC in combination with a completion combustion device; venting in lieu of combustion where combustion would present safety hazards.</p> <p>Initial flowback stage: Route to a storage vessel or completion vessel (frac tank, lined pit, or other vessel) and separator.</p> <p>Separation flowback stage: Route all salable gas from the separator to a flow line or collection system, re-inject the gas into the well or another well, use the gas as an onsite fuel source or use for another useful purpose that a purchased fuel or raw material would serve. If technically infeasible to route recovered gas as specified above, recovered gas</p> |

**Affected Source Proposed BSER**

Well Completions: Subcategory 2 (exploratory and delineation wells and low-pressure wells). Use of a completion combustion device.

Equipment Leaks at Natural Gas Processing Plants. LDAR with bimonthly OGI.

must be combusted. All liquids from a well completion vessel must be captured in a separator, a flare, a combustion system, or be re-injected into the well or another well.

The operator is required to have (and use) a separator onsite during the entire flowback period.

Applies to each well completion operation with hydraulic fracturing.

The operator is not required to have a separator onsite. Either: (1) Route all flowback to a completion combustion device with a continuous pilot flame; or

(2) Route all flowback into one or more well completion vessels and commence operation of a separator unless it is technically infeasible for a separator to function. Any gas present in the flowback before the separator can function is not subject to control under this section. Capture and direct recovered gas to a completion combustion device with a continuous pilot flame.

For both options (1) and (2), combustion is not required in conditions that may result in a fire hazard or explosion, or where high heat emissions from a completion combustion device may negatively impact tundra, permafrost, or waterways.

LDAR with OGI following procedures in Appendix K.

|                                |  |  |
|--------------------------------|--|--|
| Oil Wells with Affected Source | Route associated gas to a sales line is not available, the gas can be used as an onsite fuel source, used for another useful purpose that a purchased fuel or raw material would serve, or routed to a flare or other control device that achieves at least 95 percent reduction in methane and VOC emissions. | Route associated gas to a sales line is not available, the gas can be used as an onsite fuel source, used for another useful purpose that a purchased fuel or raw material would serve, or routed to a flare or other control device that achieves at least 95 percent reduction in methane and VOC emissions. |
| Sweetening Units.              | Achieve SO2 emission reduction efficiency.   | Achieve required minimum SO2 emission reduction efficiency.  |

**TABLE 3 FROM EPA METHANE PROPOSAL: SUMMARY OF PROPOSED BSER AND PROPOSED PRESUMPTIVE STANDARDS FOR GHGS FROM DESIGNATED FACILITIES (EG 0000c)**

| <b>Designated Facility</b>                           | <b>Proposed BSER</b>  | <b>Proposed Presumptive Standards for GHGs</b>  |
|--|---|---|
| Fugitive Emissions: Well Sites >0 to <3 tpy Methane. | Demonstrate actual site emissions are reflected in calculation. | Perform survey to verify that actual site emissions are reflected in calculation.   |
| Fugitive Emissions: Well Sites ≥3 tpy Methane.       | Monitoring and repair based on quarterly monitoring using OGI.  | Quarterly OGI monitoring following Appendix K. (Optional quarterly EPA Method 21 monitoring with 500 ppm defined as a leak).<br><br>First attempt at repair within 30 days of finding fugitive emissions. Final repair within 30 days of first attempt. |
| (Co-proposal) Fugitive Emissions:                    | Monitoring and repair based on semiannual monitoring using OGI. | Semiannual OGI monitoring following Appendix K. (Optional semiannual EPA Method 21  |



|   |  |   |
|---|--|---|
| <p>Well Sites<br/> <b>Designated Facility</b><br/> <math>\geq 8</math> tpy Methane.</p>   | <p><b>Proposed BSER</b></p>  | <p>monitoring with 500 ppm defined as <b>Proposed Presumptive Standards for GHGs</b><br/> First attempt at repair within 30 days of finding fugitive emissions.<br/> Final repair within 30 days of first attempt.</p>  |
| <p>(Co-proposal) Fugitive Emissions: Well Sites<br/> <math>\geq 8</math> tpy Methane.</p> | <p>Monitoring and repair based on quarterly monitoring using OGI.</p>  | <p>Quarterly OGI monitoring following Appendix K. (Optional quarterly EPA Method 21 monitoring with 500 ppm defined as a leak).<br/> <br/> First attempt at repair within 30 days of finding fugitive emissions.<br/> Final repair within 30 days of first attempt.</p> |
| <p>Fugitive Emissions: Compressor Stations.</p>   | <p>Monitoring and repair based on quarterly monitoring using OGI.</p>  | <p>Quarterly OGI monitoring following Appendix K. (Optional quarterly EPA Method 21 monitoring with 500 ppm defined as a leak).<br/> <br/> First attempt at repair within 30 days of finding fugitive emissions.<br/> Final repair within 30 days of first attempt.</p> |
| <p>Fugitive Emissions: Well Sites and Compressor Stations on Alaska North Slope.</p>      | <p>Monitoring and repair based on annual monitoring using OGI.</p>   | <p>Annual OGI monitoring following Appendix K. (Optional annual EPA Method 21 monitoring with 500 ppm defined as a leak).<br/> <br/> First attempt at repair within 30 days of finding fugitive emissions.<br/> Final repair within 30 days of first attempt.</p>       |
| <p>Fugitive Emissions: Well Sites and Compressor Stations.</p>                            | <p>(Optional) Screening, monitoring, and repair based on bimonthly screening using an advanced measurement technology and annual monitoring using OGI.</p> | <p>(Optional) Alternative bimonthly screening with advanced measurement technology with annual OGI monitoring following Appendix K.</p>   |
| <p>Storage</p>  | <p>Capture and route to a control</p>  | <p>95 percent reduction of methane.</p>   |

Vessels: Tank device.

**Designated Proposed BSER**

**Facility** 20 tpy  
or More of  
Methane.

**Proposed Presumptive  
Standards for GHGs**

Pneumatic  
Controllers:  
Natural Gas  
Driven that  
Vent to the  
Atmosphere.

Use of zero-emissions  
controllers.

VOC and methane emission rate of  
zero.

Pneumatic  
Controllers:  
Alaska (at  
sites where  
onsite power  
is not  
available -  
continuous  
bleed natural  
gas driven).

Installation of low- bleed  
pneumatic controllers.

Natural gas bleed rate no greater  
than 6 scfh.

Pneumatic  
Controllers:  
Alaska (at  
sites where  
onsite power  
is not  
available -  
intermittent  
natural gas  
driven).

Monitor and repair through  
fugitive emissions program.

OGI monitoring and repair of  
emissions from controller  
malfunctions.

Wet Seal  
Centrifugal  
Compressors  
(except for  
those located  
at single well  
sites).

Capture and route emissions  
from the wet seal fluid degassing  
system to a control device or to a  
process.

Reduce emissions by 95 percent.

Reciprocating  
Compressors  
(except for  
annual monitoring (when

Replace the reciprocating  
compressor rod packing based on  
annual monitoring (when

Replace the reciprocating  
compressor rod packing when  
measured leak rate exceeds 2 scfm

|  |   |   |
|--|---|---|
| those located at Designated Facility                                 | measured leak rate exceeds 2 percent or annual emissions to a process.  | based on the results of annual testing, route associated gas to a closed vent system under negative pressure.   |
| Pneumatic Pumps:   | A natural gas emission rate of zero.  | Zero natural gas emissions from diaphragm and piston pneumatic pumps.   |
| Natural Gas Processing Plants.                                       |   |   |
| Pneumatic Pumps: Locations Other Than Natural Gas Processing Plants. | Route diaphragm pumps to an existing control device or process.   | 95 percent control of diaphragm pneumatic pumps if there is an existing control or process on site. 95 percent control not required if (1) routed to an existing control that achieves less than 95 percent or (2) it is technically infeasible to route to the existing control device or process.                                       |
| Equipment Leaks at Natural Gas Processing Plants.                    | LDAR with bimonthly OGI.  | LDAR with OGI following procedures in Appendix K.   |
| Oil Wells with Associated Gas.                                       | Route associated gas to a sales line. If access to a sales line is not available, the gas can be used as an onsite fuel source, used for another useful purpose that a purchased fuel or raw material would serve, or routed to a flare or other control device that achieves at least 95 percent reduction in methane and VOC emissions. | Route associated gas to a sales line. If access to a sales line is not available, the gas can be used as an onsite fuel source, used for another useful purpose that a purchased fuel or raw material would serve, or routed to a flare or other control device that achieves at least 95 percent reduction in methane and VOC emissions. |

**TABLE 20 FROM EPA METHANE PROPOSAL: SUMMARY OF PROPOSED EG SUBPART OOOOc PRESUMPTIVE NUMERICAL STANDARDS**

**Designated Facility****Proposed Presumptive Mass-Based Standards in the Draft Emissions Guidelines for GHGs**

|  |   |
|--|---|
| Storage Vessels: Tank Battery with PTE of 20 tpy or More of Methane    | 95 percent control  |
| Pneumatic Controllers: Natural Gas Driven that Vent to the Atmosphere. | VOC and methane emission rate of zero.  |
| Wet Seal Centrifugal Compressors                                       | 95 percent control  |
| Pneumatic Pumps: Natural Gas Processing Plants                         | Zero natural gas emissions from diaphragm and piston pneumatic pumps.   |
| Pneumatic Pumps: Locations Other Than Natural Gas Processing Plants    | 95 percent control of diaphragm pneumatic pumps if there is an existing control or process on site. 95 percent control not required if<br><br>(1) routed to an existing control that achieves less than 95 percent or (2) it is technically infeasible to route to the existing control device or process                 |
| Associated Gas from Oil Wells  | Route associated gas to a sales line. In the event that access to a sales line is not available, the gas can be used as an onsite fuel source, used for another useful purpose that a purchased fuel or raw material would serve, or routed to a flare or other control device that achieves at least 95 percent control. |

**TABLE 21 FROM EPA METHANE PROPOSAL: SUMMARY OF PROPOSED EG SUBPART OOOOc PRESUMPTIVE NON-NUMERICAL STANDARDS**

|                            |  |
|----------------------------|--|
| <b>Designated Facility</b> | <b>Proposed Presumptive Non-Numerical Standards in the Draft Emissions Guidelines for GHGs</b> |
|----------------------------|--|

|  |  |
|--|--|
| <p>Fugitive Emissions: Well Sites</p> <p>&gt;0 to &lt;3 tpy methane</p>            | <p>Perform fugitive emissions survey and repair to demonstrate <del>Proposed Presumptive Non-Numerical Standards in the Draft Emissions Guidelines for GHGs</del></p>  |
| <p>Fugitive Emissions: Well Sites</p> <p>≥3 tpy methane</p>                        | <p>Quarterly OGI monitoring following Appendix K. (Optional quarterly EPA Method 21 monitoring with 500 ppm defined as a leak).</p> <p>First attempt at repair within 30 days of finding fugitive emissions. Final repair within 30 days of first attempt.</p>   |
| <p>(Co-proposal) Fugitive Emissions: Well Sites</p> <p>≥3 to &lt;8 tpy methane</p> | <p>Semiannual OGI monitoring following Appendix K. (Optional semiannual EPA Method 21 monitoring with 500 ppm defined as a leak).</p> <p>First attempt at repair within 30 days of finding fugitive emissions. Final repair within 30 days of first attempt.</p> |
| <p>(Co-proposal) Fugitive Emissions: Well Sites</p> <p>≥8 tpy methane</p>          | <p>Quarterly OGI monitoring following Appendix K. (Optional quarterly EPA Method 21 monitoring with 500 ppm defined as a leak).</p> <p>First attempt at repair within 30 days of finding fugitive emissions. Final repair within 30 days of first attempt.</p>   |
| <p>Fugitive Emissions: Compressor Stations</p>                                     | <p>Quarterly OGI monitoring following Appendix K. (Optional quarterly EPA Method 21 monitoring with 500 ppm defined as a leak).</p> <p>First attempt at repair within 30 days of finding fugitive emissions. Final repair within 30 days of first attempt.</p>   |
| <p>Fugitive Emissions: Well Sites and Compressor Stations on Alaska North</p>      | <p>Annual OGI monitoring following Appendix K. (Optional annual EPA Method 21 monitoring with 500 ppm defined as a leak).</p> <p>First attempt at repair within 30 days of finding fugitive emissions. Final repair within 30 days of first attempt.</p>         |

Slope.

**Designated Facility**      **Proposed Presumptive Non-Numerical Standards in the Draft Emissions Guidelines for GHGs**

Fugitive Emissions: Well Sites and Compressor Stations.      (Optional) Alternative bimonthly screening with advanced measurement technology and annual OGI monitoring following Appendix K.

Compressor Stations.

Pneumatic Controllers: Alaska (at sites where onsite power is not available-continuous bleed natural gas driven)      Natural gas bleed rate no greater than 6 scfh.

Pneumatic Controllers: Alaska (at sites where onsite power is not available - intermittent natural gas driven)      Monitor and repair through fugitives program.

Reciprocating Compressors      Replace the reciprocating compressor rod packing based on annual monitoring (when measured leak rate exceeds 2 scfm) or route emissions to a process.

Equipment Leaks at Gas Plants      Bimonthly OGI LDAR program (NSPS VVa as optional alternative).

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