

EPA's Supplemental Proposal to Reduce Pollution from Oil and Natural Gas Operations to Fight the Climate Crisis and Protect Public Health:

Summary of Proposed Technical Requirements: Fact Sheet

Supplemental Proposal: Highlights

- November 11, 2022 - EPA is proposing to update, strengthen and expand its November 2021 proposal that would secure major climate and health benefits for all Americans by reducing emissions of methane and other harmful air pollution from both new and existing sources in the oil and natural gas industry. Oil and natural gas operations are the nation's largest industrial source of methane, a highly potent climate pollutant that is responsible for approximately one-third of current warming resulting from human activities. It is also a leading source of other harmful air pollutants, including smog-forming volatile organic compounds (VOC) and air toxics such as benzene.
- EPA's supplemental proposal would achieve more comprehensive emissions reductions from oil and natural gas facilities by improving standards in the 2021 proposal and adding proposed requirements for sources not previously covered by the rules. The supplemental proposal would reduce methane emissions from the sources it covers by 87 percent below 2005 levels, and would sharply reduce emissions of VOCs and hazardous air pollutants that can harm health and air quality in nearby communities.
- The supplemental proposal also provides greater clarity for states that must develop plans to reduce methane emissions from existing sources, and for Tribes that choose to develop plans for existing sources in Indian country. It would give stakeholders – especially communities – a stronger voice as states and Tribes develop plans to reduce methane from existing oil and natural gas sources. And it includes updated requirements to ensure that existing source plans provide more rigorous and consistent protection for public health and the environment.
- EPA's supplemental proposal promotes innovation, reflecting input and information the Agency received from a diverse range of perspectives during the public comment period on the November 2021 proposal. EPA received more than 470,000 written comments on the proposal, held government-to-government consultation with several tribal nations and held a three-day public hearing.
- The Clean Air Act standards in the supplemental proposal will work hand-in-hand with new resources and programs in the Inflation Reduction Act, which will incentivize early implementation of innovative methane reduction technologies and support methane mitigation and monitoring activities. These complementary efforts will allow the United States to achieve greater methane emissions reductions more quickly.
- EPA is seeking comments on all aspects of the supplemental proposal. After considering public feedback, the Agency intends to finalize requirements for new and existing oil and gas sources that:
 - Achieve the greatest possible reductions in emissions of methane and smog-forming volatile organic compounds (VOCs),

- Are cost-effective,
- Promote technological innovation, and
- Are anchored in science and the law.
- The Agency plans to issue a final rule in 2023.

Benefits of the Supplemental Proposal Are Much Larger than the Costs of Compliance

- In the supplemental proposal, EPA has updated the projected costs and benefits of all of its proposed standards for both new and existing sources (including those in the November proposal as well as in the supplemental proposal) to reflect improved estimates of the number of facilities covered by the rule and the amount of VOCs and methane they emit.
- The supplemental proposal would:
 - Avoid an estimated 36 million tons of methane emissions from 2023 to 2035, the equivalent of 810 million metric tons of carbon dioxide – nearly the same as all greenhouse gases emitted from coal-fired electricity generation in the U.S. in 2020.
 - In 2030 alone, the proposal would reduce methane emissions from covered sources by an estimated 87 percent compared to 2005.
 - Avoid smog-forming VOC emissions by 9.7 million tons from 2023 to 2035, along with 390,000 tons of toxic air pollutants like benzene and toluene, among others.
 - Yield \$3.1 to \$3.2 billion in climate benefits per year, with total net benefits valued at \$34 to \$36 billion from 2023 through 2035.
 - Increase recovery of natural gas -- valued at \$3.3 to \$4.6 billion from 2020 through 2035 – that otherwise would go to waste.
- These estimates may understate the benefits of the supplemental proposal because they do not include reductions identified through EPA’s proposed Super-Emitter Response Program. Super emitters may be responsible for a large portion of total emissions from the oil and natural gas sector.
- Because EPA has updated its modeling approach to reflect the newest information and improved analyses, the emissions reductions and costs and benefits estimates are not directly comparable to the numbers from the November proposal.
- EPA’s assessment of the benefits of the proposed rule also includes a supplementary analysis that incorporates the most recent scientific advances into updated estimates of the economic harm associated with each ton of greenhouse gas pollution. The Agency is making a technical report explaining the basis for these estimates available for public comment as part of the supplemental proposal. EPA also is seeking peer review of the technical report.

Summary of proposed requirements

- This fact sheet summarizes many of the requirements included in the supplemental proposal. The following links will take you to specific sections of the fact sheet.

Dates the Rules Would Apply	Alternative Technology Approval	Liquids Unloading
Well Site and Compressor Station Monitoring Requirements	Super Emitter Response Program	Flares and Combustion Control Devices
Well Closure Requirements	Pneumatic Pumps	Centrifugal Compressors
Innovative Methane Detection technologies	Pneumatic Controllers	Reciprocating Compressors
Continuous Methane Detection Technologies	Associated Gas	Storage Tanks

- [Please refer to the text of the supplemental proposal to read all of the proposed requirements.](#)

Dates the rules would apply

- EPA is proposing to strengthen Clean Air Act requirements from its November 2021 proposal, including:
 - New Source Performance Standards (NSPS) under section 111(b) of the law to reduce emissions of methane and smog-forming volatile organic compounds (VOCs) from new, modified and reconstructed sources; and
 - The first nationwide Emissions Guidelines under section 111(d) for states that would be required to develop plans to limit methane emissions from existing sources.
- Some oil and natural gas sources that were subject to previous NSPS would become subject to existing source standards under state plans. The table below shows which rule applies based on a source’s construction date:

When it was built (or reconstructed/modified)	Which rule applies
After August 23, 2011, <i>and</i> on or before September 18, 2015	NSPS issued in 2012 (also referred to as OOOO) *Note: Existing sources built on or before November 15, 2021,* will become subject to state plans under the Emissions Guidelines once those take effect
After September 18, 2015, and on or before November 15, 2021	NSPS issued in 2016 (also referred to as OOOOa) *Note: Existing sources built on or before November 15, 2021,* will become subject to state plans under the Emissions Guidelines once those take effect.
After November 15, 2021	NSPS that will be finalized in 2023 (also referred to as OOOOb)

**For existing dry seal compressors, this date would be on or before the date that the supplemental proposal is published in the Federal Register*

Key requirements in the supplemental proposal:

- Under section 111(b) of the Clean Air Act, EPA must set NSPS and Emission Guidelines for each type of regulated source by applying the “best system of emission reduction,” or “BSER,” that the Administrator determines has been adequately determined.
- In developing the supplemental proposal, EPA evaluated new data made available to the Agency, along with information and public comment received on the November 2021 proposal. EPA used the data and information to conduct new analyses to determine an updated BSER for several of the sources covered by the rule. A summary of the proposed standards is below:

Requiring Routine Monitoring for Leaks at Every Well Site, Until Wells Are Properly Closed, and at Compressor Stations

- After considering information and comments received from the public, EPA is revising its November 2021 proposal to find and fix leaks (fugitive emissions) at new and existing well sites. The Agency’s new approach would ensure that every well site, regardless of size, is regularly inspected for leaks.
- The revised program would tie monitoring requirements to the types and amount of equipment at a site rather than to estimated emissions. This approach removes exemptions from routine monitoring for well sites with lower emissions, including well-head only well sites, which EPA had proposed in 2021. The supplemental proposal creates a cost-effective approach to ensure that all well sites are regularly checked for leaks.
- EPA is proposing monitoring and repair programs for four categories of well sites:
 - Single wellhead-only well sites;
 - Well head only well sites with two or more wellheads;
 - Well sites and centralized production facilities with major production and processing equipment; and
 - Small well sites. (Small well sites are single wellhead well sites that have no controlled storage vessels, control devices, pneumatic controller affected facilities or pneumatic pump affected facilities, and include only one other piece of major production and processing equipment.)

Well Closure Requirements

- EPA’s November 2021 proposal noted that abandoned and unplugged wells can be a significant source of methane and other air pollutants. To ensure that well sites are not left unplugged and potentially leaking, EPA is now proposing that monitoring must continue at these sites until all wells have been plugged, equipment has been removed, and no fugitive emissions are present.
 - Owners would have to submit a well closure plan that includes the necessary steps to close the wells, including plugging all wells, documentation of financial assurance to complete the well closure and a schedule for completing closure activities.

- Once a well site is closed, owners/operators would have to conduct a final survey using OGI to ensure no emissions are found. If emissions are detected, the owners/operators would have to make repairs according to the schedule for leaks found with OGI and resurvey the site.
- The table below summarizes the proposed requirements for well sites, showing both the proposed Best System of Emission Reduction (BSER) and the proposed standards.

Summary of Proposed Leaks Monitoring Requirements for New and Modified Well Sites *
(Proposed Presumptive Methane Standards for the Emissions Guidelines are the Same)

(table continues on next page)

Type of site	Proposed BSER	Proposed monitoring and repair requirements
Single wellhead-only sites	<ul style="list-style-type: none"> ● Quarterly AVO (audio, visual, olfactory) inspections 	<ul style="list-style-type: none"> ● Quarterly AVO inspections, repair identified leaks within 15 days. ● Monitoring must continue until the well site has been closed including plugging the wells at the site and submitting a well closure report
Wellhead-only sites with two or more wellheads	<ul style="list-style-type: none"> ● Quarterly AVO inspections <i>and</i> monitoring and repair based on semiannual monitoring using OGI 	<ul style="list-style-type: none"> ● Quarterly AVO inspections, repair identified leaks within 15 days. ● Semiannual OGI monitoring (or optional semiannual monitoring using EPA method 21 with 500 ppm defined as a leak) ● First attempt at repair within 30 days of finding a leak using OGI; final repair within 30 days of the first attempt. ● Monitoring must continue until the well site has been closed including plugging the wells at the site and submitting a well closure report

Type of site	Proposed BSER	Proposed monitoring and repair requirements
Sites with major production and processing equipment and centralized production facilities	<ul style="list-style-type: none"> • AVO monitoring every other month <i>and</i> • Monitoring and repair based on quarterly monitoring using OGI (for well sites with specified major production and processing equipment) 	<ul style="list-style-type: none"> • AVO monitoring every other month; repair for indications of potential leaks within 15 days of inspection <i>AND</i> • For well sites with specified production and processing equipment: Quarterly OGI monitoring (optional quarterly EPA Method 21 monitoring with 500 ppm define as a leak) • First attempt at repair within 30 days of finding a leak; final repair within 30 days of the first attempt. • Monitoring must continue until the well site has been closed including plugging the wells at the site and submitting a well closure report
Small well sites (These are single wellhead well sites with no controlled storage tanks, control devices, pneumatic controller affected facilities or pneumatic pump affected facilities) and only one other piece of major production and processing equipment.)	<ul style="list-style-type: none"> • Quarterly AVO (audio, visual olfactory) inspections 	<ul style="list-style-type: none"> • Quarterly AVO inspections, repair identified leaks within 15 days. • Monitoring must continue until the well site has been closed including plugging the wells at the site and submitting a well closure report
Compressor stations	<ul style="list-style-type: none"> • Monthly AVO monitoring <i>AND</i> monitoring and repair base on quarterly monitoring using OGI 	<ul style="list-style-type: none"> • Monthly AVO monitoring <i>AND</i> • Quarterly OGI monitoring (option to use quarterly EPA Method 21 monitoring with 500 ppm defined as a leak) • First attempt at repair within 30 days of finding a leak; final repair within 30 days of the first attempt.
* <i>Well sites and compressor stations on the Alaska North Slope would be subject to annual monitoring using OGI.</i>		

EPA is proposing that owners and operators monitoring for leaks at well sites follow OGI procedures outlined in the proposed NSPS regulatory text instead of the proposed Appendix K. [Read a fact sheet on the proposed update to Appendix K.](#)

Innovative Technologies

- EPA received overwhelming support for allowing owners and operators the flexibility to use advanced methane detection technologies to monitor for leaks (or “fugitive emissions”).

- In the supplemental proposal, the Agency would provide a pathway for the use of a broader range of advanced technologies in lieu of optical gas imaging (OGI) or EPA Method 21. This pathway is a technology-neutral approach that ties the frequency of required monitoring surveys to the detection ability of the technology used, while keeping the same deadlines for repairs as OGI.
- This “matrix approach” would provide multiple options for conducting methane screening surveys while providing incentives for continued advancement of methane detection technology. EPA is also proposing a streamlined process to approve these screening technologies, with clearly defined requirements for those seeking EPA approval to use these alternative test methods.
- The table below shows the proposed survey matrix for well sites with major production and processing equipment, controlled storage vessels, natural gas-driven pneumatic controllers, associated covers and closed vent systems, and control devices, centralized production facilities, and compressor stations.

Proposed Survey Matrix for Alternative Periodic Screening Approach for Affected Facilities Subject To Quarterly OGI Monitoring for Methane

(proposed requirements for the NSPS and the Emissions Guidelines are the same)

Minimum Screening Frequency	Minimum Detection Threshold of Screening Technology
Quarterly + Annual OGI	≤1 kilograms per hour (kg/hr)
Bimonthly	≤2 kg/hr
Monthly	≤4 kg/hr
Bimonthly + Annual OGI	≤10 kg/hr
Monthly + Annual OGI	≤30 kg/hr

- The next table shows the proposed survey matrix for single and multi- wellhead-only sites and small well sites. The minimum detection threshold is based on a 90 percent probably of detection:

Proposed Survey Matrix for Alternative Periodic Screening Approach for Single and Multi-Wellhead-Only Sites And Small Well Sites

(proposed requirements for the NSPS and the Emissions Guidelines are the same)

Minimum Screening Frequency	Minimum Detection Threshold of Screening Technology
Semiannual	≤1 kilograms per hour (kg/hr)
Triannual	≤2 kg/hr
Triannual + Annual OGI	≤5 kg/hr
Quarterly + Annual OGI	≤15 kg/hr
Monthly + Annual OGI	≤30 kg/hr

- To reflect changes to the proposed alternative periodic screening approach, EPA is proposing to allow owners and operators to use any applicable approved alternative screening approach as long as they develop a site-specific monitoring plan that details the use of the alternative screening approach, and notify the Administrator that they are using it.

- The supplemental proposal would require owners and operators to conduct an initial periodic monitoring survey within:
 - 90 days of the startup of production for each “fugitive emissions component affected facility” and/or storage vessel affected facility that is located at a new, modified, or reconstructed well site or centralized production facility and that has not begun any fugitive monitoring;
 - 90 days of startup for each fugitive emissions components affected facility and storage vessel affected facility located at a new compressor station; and
 - 90 days of modification for each fugitive emissions components affected facility and storage vessel affected facility located at a modified compressor station.
- When a periodic survey identified emissions, owners/operators would be required to conduct a ground-based survey using OGI to identify the source of the emissions and any other leaks present. Repairs would be required within 30 days of the screening survey.
 - In addition, if the ground-based survey confirms that leaks were caused by a control device failure, owners and operators would have to begin a root cause analysis and determine appropriate corrective action within 24 hours for fugitive emissions components, and take the corrective action as soon as possible.
 - For covers and controlled vent systems, if a leak or defect is identified, owners and operators would have to conduct a root cause analysis to determine the cause of the leak within five days of complaint the ground-based survey and take actions to resolve the emissions and ensure there are no detectable emissions, which is the standard for covers and controlled vent systems. EPA is seeking comment on an appropriate deadline for completing all corrective actions.

Continuous Technologies

- The supplemental proposal would also give owners and operators the option to use continuous monitoring technologies that operate around the clock to check for methane leaks and that can determine site-level emissions at least once every 12 hours.
- Owners or operators using continuous technologies would be required to determine the cause of a leak and take corrective action whenever emissions exceed an action level at the boundary of a regulated facility. This approach is similar to the approach used in the fence-line monitoring requirements in EPA’s air toxics rules for petroleum refineries.
- EPA is proposing two action levels for continuous monitoring, which are designed to address both smaller leaks that persist over time as well as large leaks or malfunctions.

Proposed Alternative Continuous Monitoring Approach for New and Modified Well Sites
 (Presumptive Methane Standards for the Emissions Guidelines are the Same)

Type of site	Type of Action Level	Proposed monitoring and repair requirements
Wellhead-only sites	Long-term	1.2 kilograms per hour (kg/hr), rolling 90-day average calculated each day

Type of site	Type of Action Level	Proposed monitoring and repair requirements
Wellhead-only sites	Short-term	15 kg/hr, rolling seven-day average calculated each day
Other well sites and compressor stations	Long-term	1.6 kg/hr, rolling 90-day average calculated each day
Other well sites and compressor stations	Short-term	21 kg/hr rolling seven-day average calculated each day

Alternative Technology Approval

- EPA is also encouraging the continued development of innovative technologies by proposing a clear and streamlined pathway for technology developers and others to seek approval for using advanced technologies to monitor for methane. Once the Agency approves a technology and technique, owners and operators would be able to use it widely without the need for additional approval.
- EPA is proposing to require owners and operators who want to use an alternative technology that has not yet been approved to seek approval under the Agency’s alternative test method provisions, rather than through site-specific monitoring plans.
- If the alternative method has been approved and is broadly applicable, EPA will post it to the Agency’s Emission Measurement Center website. Owners and operators would identify the approved method they intend to use in their leak monitoring plans.
- EPA is proposing clear requirements to streamline these approvals, including basic eligibility criteria to apply for approval and necessary information about the screening technology and its capabilities. EPA is proposing to approve or disapprove an alternative technology application, in writing, within 270 days.
- The Agency also is proposing to allow conditional approval if it has not made a determination by that deadline. EPA would make the approvals and supporting information available to the public on an EPA-supported website.

Super Emitter Response Program

- Studies show that emissions from a small number of sources are responsible for as much as half of the methane emissions from oil and natural gas operations, along with significant amounts of smog-forming VOCs and air toxics that are of concern in many communities. These large emissions events, known as “super emitters,” often are caused by malfunctions or abnormal operating conditions, including unlit flares and open thief hatches on storage tanks.
- While many of EPA’s proposed requirements would reduce the number of super emitters, EPA also is proposing a Super-Emitter Response Program to quickly identify these events for prompt mitigation. EPA is proposing to define a super-emitting event as emissions of 100 kilograms (220.5 pounds) of methane per hour or larger, with a focus on super emitters at an individual well site, centralized production facility, compressor station, or natural gas processing plant.
- The Super-Emitter Response Program would leverage expertise and data from regulatory agencies or EPA-approved qualified third parties with access to EPA-approved remote methane detection technology.

- Under the proposed program, regulatory authorities or qualified third parties that have been approved by EPA could notify owners and operators of regulated facilities when a super emitter is detected.
 - Notifiers could be any technology vendors, industry, researchers, non-profit organizations, or other parties demonstrating technical expertise in the use of the detection technology and the interpretation or analysis of the data the technology collects.
 - The notifiers would have to provide credible, well-documented identification of the event, using one of several allowed remote-sensing technologies and approaches. Each notification must contain specific information to help owners and operators verify that the emissions are correctly linked to their site, and to help them swiftly identify the source of the super emitter.
 - EPA would maintain a public list of approved qualified third-party notifiers, so owners and operators can verify approval before being required to act on a notification.
- Once they are notified, owners and operators would be required to conduct a root cause analysis and, where appropriate, take corrective actions to address the source of emissions.
 - If the owner or operator confirms the existence of a super-emitter emissions event that requires mitigation, it must take prompt steps to eliminate the super-emitter emissions event and report both its root-cause analysis and corrective actions to the EPA and the appropriate state or tribal authority.
- EPA also is proposing a mechanism for owners and operators to seek a revocation of a notifier’s EPA certification if they establish that more than one notification contained demonstrable errors.
- To ensure this program operates in a transparent manner, the EPA will make available in a document repository the notices to operators that the EPA receives, as well as the reports sent to the EPA by owners and operators in response, so that notifiers, communities, and owners and operators have quick access to the information submitted to the EPA under the super-emitter provisions.
- The table below summarizes the proposed requirements for super emitters, showing both the proposed Best System of Emission Reduction (BSER) and the proposed standards.

Summary of Proposed Requirements for Super Emitters (Presumptive Methane Standards for the Emissions Guidelines are the Same)		
Type of site	Proposed BSER	Proposed requirements
Super-emitter sites	Root cause analysis and corrective action following notification of super-emitter emissions event.	<ul style="list-style-type: none"> • Root cause analysis within five days of receiving a notification of a super-emitter event <i>AND</i> • Corrective action, if needed, following notification of super-emitter emissions event.

Pneumatic Pumps

- The supplemental proposal would update the definition of “affected facility” for pneumatic pumps to be the collection of all natural gas-driven diaphragm and piston pumps a well site, centralized production facility, onshore natural processing plant, or compressor station.
- EPA is proposing to require pneumatic pumps to have zero methane and VOC emissions. This means pumps used at an affected facility should not be driven by natural gas.
- At sites that do not have access to electricity, owners/operators would be allowed to use natural gas-driven pneumatic pumps if they demonstrate that it is not technically feasible to use pneumatic pumps that are not driven by natural gas. In these cases, owners/operators would have to use the emissions from the gas-driven pumps by routing them to a process on site. If routing emissions to a process is not feasible, owner/operators would have to control emissions, with the requirement depending on the number of pumps on site.
- The table below summarizes the proposed requirements for pneumatic pumps, showing both the proposed Best System of Emission Reduction (BSER) and the proposed standards.

Summary of Proposed Requirements for Pneumatic Pumps		
Type of source	Proposed BSER	Proposed requirements
Pneumatic pumps	Use of zero-emissions pumps that are not powered by natural gas	<ul style="list-style-type: none"> • <i>Proposed NSPS</i>: Methane and VOC emission rate = zero • <i>Proposed presumptive methane standards under the Emissions Guidelines</i>: methane emission rate = zero

Pneumatic Controllers

- EPA is proposing to update the definition of “affected facility” for pneumatic controllers, based on comments the Agency received on the November proposal.
- Under the supplemental proposal, a pneumatic controller affected facility would be the collection of continuous bleed and intermittent vent natural gas-driven controllers at a well site, centralized production facility, onshore natural processing plant or compressor station. This would include two types of natural gas-driven controllers that previously were excluded from coverage: controllers where emissions are routed to a sales line or used for onsite fuel or another useful purpose, and self-contained natural gas pneumatic controllers. The supplemental proposal clarifies that these controllers, which should not emit methane and VOCs if they are properly maintained, can be used to meet a zero-emissions standard.
- Like the November proposal, the supplemental proposal would require pneumatic controller affected facilities to have zero methane and VOC emissions, with the exception of natural gas-driven pneumatic controllers that function as emergency shutdown devices, pneumatic controllers that are not driven by natural gas, and pneumatic controllers at sites in Alaska that do not have power.

- The table below summarizes the proposed requirements for pneumatic controllers, showing both the proposed Best System of Emission Reduction (BSER) and the proposed standards.

Summary of Proposed Requirements for Pneumatic Controllers		
Type of source	Proposed BSER	Proposed requirements
Natural gas-driven pneumatic controllers that vent to the atmosphere	Use of zero-emissions controllers	<ul style="list-style-type: none"> • <i>Proposed NSPS</i>: VOC and methane emission rate = zero • <i>Proposed presumptive methane standards under the Emissions Guidelines</i>: methane emission rate = zero
*Pneumatic controllers at sites in Alaska where onsite power is not available would have different requirements.		

Additional Requirements for Wells

- EPA is proposing to update the definition of affected facility for wells to be a single well. The Agency is updating proposed requirements for associated gas from oil wells and for well liquids unloading.

Associated Gas from Oil Wells

- EPA is proposing to limit the use of flares for eliminating venting of associated gas from oil wells.
- The supplemental proposal allows owners and operators four compliance options to reduce or eliminate emissions of methane and VOC from associated gas from oil wells. They are:
 - Route the gas to a sales line;
 - Recover the associated gas from the separator and use the recovered gas as an onsite fuel source;
 - Recover the associated gas from the separator and use the recovered gas for another useful purpose that a purchased fuel or raw material would serve; or
 - Recover the associated gas from the separator and reinject the recovered gas into the well or inject the recovered gas into another well for enhanced oil recovery.
- The supplemental proposal would allow flaring of the gas only if the owner or operator demonstrates that all four compliance options are infeasible due to technical or safety reasons, and that demonstration is approved by a certified professional engineer. In these situations, owners and operators would have to use a flare or other control device that reduces methane and VOC emissions by 95 percent.

Summary of Proposed Requirements for Oil Wells with Associated Gas (Presumptive Methane Standards for the Emissions Guidelines are the Same)		
Type of source	Proposed BSER	Proposed requirements

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.	Proposed NSPS and presumptive standards under the Emissions Guidelines: 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 or used for another useful purpose that a purchased fuel or raw material would serve. If demonstrated that a sales line and beneficial uses are not technically feasible, the gas can be routed to a flare or other control device that achieves at least 95 percent reduction in methane and VOC emissions.
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Liquids Unloading

- The supplemental proposal no longer considers all liquids unloading at existing wells to be a modification.
- EPA is proposing a presumptive standard of zero methane emissions for liquids unloading events at existing wells, which aligns with the standard for liquids unloading at new and modified wells. That standard would require liquids unloading to be conducted with zero methane and VOC emissions.
- Where it is technically infeasible or not safe to meet the zero emissions standard, the Agency is proposing to require that owners and operators employ best management practices to minimize venting of emissions to the maximum extent possible.
- In addition, the Agency is proposing reporting requirements for well liquids unloading operations. Owners and operators who use methods that vent to the atmosphere would have to document why it is not feasible to use a non-venting method for technical, safety or economic reasons, along with the best management practices used to minimize emissions during each liquids unloading operation.

Summary of Proposed Requirements for Well Liquids Unloading (Presumptive Methane Standards for the Emissions Guidelines)		
Type of source	Proposed BSER	Proposed requirements
Well Liquids Unloading	Employ techniques or technologies that eliminate methane and VOC emissions. If this is not feasible for safety or technical reasons, employ best management practices to minimize venting of emissions to the maximum extent possible.	<i>Proposed presumptive standards under the Emissions Guidelines: 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 of emissions to the maximum extent possible. The proposed presumptive standards are the same as those proposed for the NSPS in November 2021.</i>

Flare and Combustion Control Devices

- EPA is proposing that control devices used for any affected facility must demonstrate that they meet a 95 percent VOC and methane emission reduction requirement through a performance test or manufacturer's performance test. For condensers and carbon adsorbers this can be done through a design evaluation.
- The Agency also is proposing several requirements to ensure that all flares and enclosed combustion devices operate properly. Those include requirements that flares and enclosed combustors:
 - Have a continuous pilot flame and install a continuous parameter monitoring system capable of monitoring for the presence of a pilot or combustion flame at least once every 5 minutes;
 - Are inspected monthly (or at other times as requested by the EPA Administrator) for visible emissions using section 11 of EPA Method 22, with an observation period of 15 minutes to determine whether the flare is exceeding the visible emissions limit;
 - Are monitored for the net heating value of the vent gas sent to the flare or combustor. Owners and operators would install a continuous parameter monitoring system, such as a calorimeter, to continuously determine the net heating value of the gas sent to the flare or combustor; and
 - Have a continuous parameter monitoring system to determine the flow of gas sent to the flare or combustor, except as noted below for pressure-assisted devices.
- The supplemental proposal includes alternative compliance options for some of these requirements.

Centrifugal Compressors

Wet seal centrifugal compressors

- EPA is proposing to require that emissions from new, modified and reconstructed wet seal centrifugal compressors reduce methane and VOC emission by 95 percent. This can be achieved by capturing and routing emissions from the wet seal degassing system to a combustion device. As a compliance alternative, EPA is proposing to allow owners and operators to meet the 95 percent reduction requirement by routing the emissions to a process.
- For existing wet seal compressors, EPA is proposing a presumptive standard of a volumetric flow rate of 3 standard cubic feet per minute (scfm) to prevent emissions. As a compliance alternative, EPA is proposing to allow owners and operators to reduce methane emissions by 95 percent or greater by routing emissions to a control device or to a process.
- Self-contained wet seal centrifugal compressors would have to comply with the standard for dry seal compressors.

Dry seal centrifugal compressors

- In the November 2021 proposal, EPA sought comment on whether the Agency should consider developing standards for dry seal compressors. Based on information the Agency received, EPA is

proposing standards for new and existing dry seal compressors, which previously have not been regulated.

- Owners or operators of dry seal compressors would be required to maintain the volumetric flow rate at or below 3 scfm to prevent emissions.

Summary of Proposed Requirements for Centrifugal Compressors		
Type of source	Proposed BSER	Proposed requirements
Wet seal centrifugal compressors (except those located at well sites)	<p><i>NSPS:</i> capture and route emissions from the wet seal fluid degassing system to a control device</p> <p><i>Emissions Guidelines:</i> Conduct preventative maintenance and repair to maintain flow rate at or below 3 scfm</p>	<p><i>NSPS:</i> 95 percent reduction of methane and VOC emissions</p> <p><i>Presumptive methane standards for the Emissions Guidelines:</i> Volumetric flow rate of 3 scfm.</p>
Dry seal centrifugal compressors (except those located at well sites)	<p><i>NSPS and Emissions Guidelines:</i> Conduct preventative maintenance and repair to maintain flow rate at or below 3 standard cubic feet per minute (scfm)</p>	<p><i>NSPS and presumptive methane standards for the Emissions Guidelines:</i> Volumetric flow rate of 3 scfm</p>

Reciprocating Compressors

- EPA is proposing several changes to the standard the Agency proposed in November for reciprocating compressors:
 - *Changes to the format of the standard* – EPA is proposing a numerical emission limit. Owners and operators would be required to keep emissions below a flow rate of 2 scfm.
 - As a compliance alternative, owners and operator would be allowed to route emissions to a process via a closed vent system, but this would not have to occur under negative pressure.
 - *Repair or replacement* – Owners would be allowed to replace rod packing and/or conduct other necessary repairs and maintenance to keep emissions below this rate.
 - *Periodic flow rate monitoring* – EPA is proposing to allow for periodic flow rate monitoring based on 8,760 hours of operation instead of requiring monitoring on a calendar year basis.

**Summary of Proposed Requirements for Reciprocating Compressors
(Presumptive Methane Standards for the Emissions Guidelines are the Same)**

Type of source	Proposed BSER	Proposed requirements
Reciprocating compressors (except those located at well sites)	Repair or replace the reciprocating compressor rod packing in order to maintain a flow rate at or below 2 scfm.	Volumetric flow rate of 2 scfm.

Storage tanks

- The supplemental proposal would update the definition of tank battery. EPA is proposing to define a tank battery as a group of storage tanks that are manifolded together for transferring liquids. A tank battery also could include a single tank, if only one is present at the site, or if the tanks at the site are not manifolded together for transferring liquids.
- EPA also is proposing to update the applicability requirements for new, modified and reconstructed tank batteries. In the November proposal, tank batteries would be subject to requirements to reduce methane and VOC emissions by 95 percent if their potential VOC emissions were 6 tons per year or higher. The supplemental proposal would add potential methane emissions to that threshold, meaning tank batteries would be required to reduce methane and VOC emissions by 95 percent emissions if their potential VOC emissions are 6 tons per year or higher or their potential methane emissions are 20 tons per year or higher.
- In addition, the Agency is proposing that a “generally accepted model or calculation methodology” used to determine VOC and methane emissions must account for flashing, working and breathing losses. The supplemental proposal includes regulatory text that instructs the owner or operator on how to determine the potential for VOC or methane emissions as the cumulative emissions from all storage vessels within the tank battery, according to certain timelines.

Summary of Proposed Requirements for Storage Vessels

Type of source	Proposed BSER	Proposed requirements
NSPS: A single storage vessel or tank battery with potential to emit (PTE) 6 tpy or more of VOC and PTE of 20 tpy or more of methane	Capture and route to a control device.	<i>NSPS:</i> 95 percent reduction of VOC and methane (same as in November proposal)
Emissions Guidelines: Tank battery with PTE of 20 tpy or more of methane (same as in November proposal).	Capture and route to a control device.	<i>Emissions Guidelines:</i> 95 percent reduction of methane (same as in November proposal)

Other Proposed Updates

- EPA also is proposing updates to requirements for:
 - Covers and closed vent systems;
 - Equipment leaks at natural gas processing plants; and
 - Sweetening units.
- In addition, the Agency is proposing updates to recordkeeping and reporting requirements.

Content of the Proposed Rules (Regulatory Text)

- EPA is providing the content (regulatory text) reflecting the proposed NSPS (referred to as OOOOb) and the proposed Emissions Guidelines (referred to as OOOOc). The proposed regulatory text is available in the docket for the supplemental proposal and [on EPA's website](#).

Proposed Requirements for State Plans

- The supplemental proposal also includes a number of updates to requirements for state plans limiting methane emissions from existing sources under the proposed Emissions Guidelines. [Read a fact sheet about proposed requirements for states](#).