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October 2, 2023

Administrator Michael S. Regan  
U.S. Environmental Protection Agency  
EPA Docket Center, Air and Radiation Docket  
Mail Code 28221T  
1200 Pennsylvania Avenue NW  
Washington, DC 20460

Re: Comments on EPA's Proposed Rule on the Greenhouse Gas Reporting Rule: Revisions and Confidentiality Determinations for Petroleum and Natural Gas Systems, 88 FR 50282, 40 CFR 98, EPA-HQ-OAR-2023-0234, RIN 2060-AV83

Dear Administrator Regan:

The Environmental Protection Agency's (EPA) proposed revisions to the Greenhouse Gas Reporting Rule (GHGRP) (proposed rule) is unwieldy, disincentivize the development and use of advanced technologies, and would result in inaccurate overestimations of industry's emissions. The proposed rule is overly broad, fails to take into account the specific and unique nature of the upstream sector, is not practicable or realistic, and penalizes companies for using the latest, most advanced technologies. If finalized, it would be in direct conflict with other rules in concurrent rulemakings at EPA and other federal agencies. The Alliance offers an assessment of the proposed revisions, followed by specific recommendations for how to correct them.

The Alliance is the leader and champion for independent oil and natural gas companies in the West. Working with a vibrant membership base for over 50 years, the Alliance stands as a credible leader, advocate, and champion of industry. Our expert staff, active committees, and committed board members form a collaborative and welcoming community of professionals dedicated to abundant, affordable energy and a high quality of life for all. Most independent producers are small businesses, with an average of fourteen employees.

The Alliance and its members have played an active role in providing data and tools to assist EPA in improving the GHGRP over the last several years, and is willing to provide additional clarity or information as required to avoid potential negative consequences that would arise from the finalization of this rule as currently proposed. Primarily, the comments in this letter reflect on the substantial burden placed on operators for them to be able to take advantage of more accurate emissions reporting methodologies and factors, and how that burden neither provides for a more accurate overall picture of emissions in the oil and natural gas sector, nor an incentive for operators to focus on emissions-reducing technologies. The Alliance strongly recommends that EPA amend its approach as requested in these comments to avoid misleading the public with respect to the industry's emissions.

## **I. General Comments**

The Alliance believes the Upstream & Production Segment of the oil and natural gas industry should not be treated like Midstream or Downstream. While part of the same value chain, production facilities are not manned 24 hours a day, are not typically outfitted with the same level of security and automation as a gas plant or refinery, and are far more prevalent in the field. Due to this, when considering the measurement and monitoring required for a single downstream facility in relation to the likely hundreds of production facilities which produce oil and natural gas that flow to a single midstream or downstream facility, there are vastly different technology implementation challenges and vastly different needs. Many of the options proposed for sources in the production sector by this rulemaking are impractical as well as costly. EPA hints at this in the preamble, “direct measurement is the most accurate method for determining...emissions, it may also be time consuming and costly.” Yet even this admission is understated and the full effects are not fully taken into consideration.

For widely dispersed production facilities, certain technologies are better suited to estimate emissions. These technologies use empirical data to allow for measurement-informed reporting. The best approach that the GHGRP can take would allow for significant flexibility in the technologies used to collect and report data, while simultaneously allowing for updated default emission factors for equipment to illuminate new information about typical sources in the production segment. Specifically, EPA and the GHGRP should design a program that incentivizes the use of aircraft, drones, satellites, and other full-field measurement technologies, as their success in both identifying leaks and confirming leak rates in the industry is well documented.

Instead, the current revisions to the rule disincentivize the use of advanced, field-level technologies and would force the use of direct measurement techniques that have not been proven to provide a more accurate picture of emissions for field-based inventories. As proposed, the rule would result in reported emissions, especially of methane, that are drastically higher than actual emission rates in the field. By placing a heavy burden on operators who wish to use direct data measurement that would confirm lower emissions, EPA is instead forcing the use of conservative factors that would result in over-reporting of emissions and mask the real progress industry is making in reducing emissions. Considering the amount of policy making that flows from data provided by the GHGRP, from local, state, and federal air quality regulations to funding and research to even international obligations, EPA should place paramount importance on accuracy of the overall data. Given that the GHGRP will be the primary assessment mechanism for the methane fee mandated by the Inflation Reduction Act (IRA), accuracy is even more vital. The Alliance believes the revisions, as proposed, miss the mark with respect to data accuracy, and provides ways to improve that accuracy below.

## **II. Harmonization of the Proposal with Other Rulemaking Efforts**

The Alliance urges EPA to carefully consider how this proposed rulemaking will interact negatively with other concurrent rulemakings at EPA and other federal agencies tasked with regulating emissions mitigation. For example, the Pipeline Hazardous Materials Safety Administration’s Leak Detection and Repair rule and BLM’s waste prevention rule also attempt to regulate methane emissions. As written, there would not only be several legal vulnerabilities, but also seemingly numerous conflicts in incentives and technologies to comply with the various sets of requirements. EPA should better coordinate with

rulemaking efforts within the agency and the broader federal government to ensure the rulemaking efforts work in harmony with each other, instead of reimagining proper methods of emissions estimation and mitigation in each proposal.

*The Proposed Rule Conflict with the Proposed OOOOb and OOOOc Standards*

First, the revised GHG Subpart W reporting rule would add significant requirements to flare monitoring standards over and above those that are proposed in the NSPS (OOOOb) and existing source Emission Guideline (OOOOc) standard revisions. Gas composition monitoring is included in the proposed revised Subpart W, but not in the NSPS or existing source standards in OOOOb/c. The revised Subpart W rule would also accelerate the schedule for all flare monitoring standards ahead of OOOOc, because the revised Subpart W is effective January 1, 2025, and the state-by-state implementation of OOOOc will not be effective for several years after that. Using the revised Subpart W reporting rule to incorporate flare monitoring standards from a NEHSAP standard (40 CFR 63 Subpart CC), for a different industry sector, petroleum refineries, as a requirement to claim a flare DRE of 98% at production facilities regulated under OOOOb/c NSPS/existing source standards is not appropriate.

This is further challenging because, as proposed, Subpart W would not incorporate 63.670 (r) Alternative means of emissions limitation, which would appear to prevent the ability for production operators to determine that they have flares with 98% or higher DRE, based on operational data. EPA should allow control devices to report a DRE of 95% or higher through state-approved performance testing. For example, Colorado's Reg. 7 now has DRE standards for enclosed combustion devices (ECDs) at upstream and midstream facilities. The rule requires initial and subsequent (every five years) performance testing to demonstrate ECDs are meeting a minimum 95% DRE. Flowrate monitoring of waste gas to the ECD is required prior to testing and during testing. Testing protocols must be submitted and approved by CDPHE prior to testing. ECDs that fail testing require prompt reporting to CDPHE, corrective maintenance, and subsequent testing. State programs such as these should be sufficient for operators to claim DREs of 95% or higher. Without being able to claim actual DRE of 98% or higher based on operational and testing data and given that flare monitoring equipment is prohibitively expensive, operators will be forced to use the lower DRE Tiers of 95% or 92%. The use of the much less accurate DRE factor will artificially cause emission reporting numbers to increase in the absence of evidence that those factors represent actual field conditions. Such overestimation runs counter to the intent of the GHGRP and IRA's requirements about the use of empirical data, and could potentially steer policy decisions in a misleading direction.

*The Proposed Rule Conflicts with IRA's Methane Fee Provision*

The proposed Subpart W revisions are not aligned with the clear language in IRA. Primarily, the IRA language requires EPA to revise Subpart W to ensure that reported emissions "are based on empirical data," "accurately reflect the total methane emissions and waste emissions," and allow the submission of "empirical emissions data" to support the calculation of emission charges.

First, the timing of requirements are contradictory. The methane fee applies in 2024 for Q1 2025 reporting, whereas these proposed Subpart W revisions will not apply until 2025 for Q1 2026 reporting.

By finalizing the proposal by August 2024, it meets the two-year deadline in IRA, but it will not be implemented for the first year of the methane fee.

Further, the new proposed definition of a “centralized oil production site,” to be reported under the gathering and boosting segment, is contrary to IRA language, which lists the gathering and boosting segment under Nonproduction for the purposes of the methane fee assessment. The language in IRA, under the section “Waste Emissions Threshold,” clearly includes Gathering and Boosting under “Nonproduction Petroleum and Natural Gas Systems” and *not* under “Petroleum and Natural Gas Production.” This definition of “centralized oil production site” as part of the gathering and boosting segment in the proposed Subpart W revision also does not align with the definition and regulation of a “centralized production facility” in the production segment in the proposed OOOOb/c.<sup>1</sup> EPA needs to realign the proposed rule with the segments specified in IRA.

IRA requires the use of empirical data and accurately reported emissions. In many cases, the use of new default factors will vastly increase emissions from activities and equipment for which empirical data is available from aircraft studies, the published literature, and even EPA’s own collected data within the methane rule information collection request. Even if emissions for a specific piece of equipment for which additional flare flow monitoring or gas composition requirements are implemented result in increased accuracy for that single equipment or activity, that does not necessarily provide additional accuracy to the overall inventory, especially if what must be used in lieu of that burdensome monitoring data is shown to be far too conservative to represent an accurate picture of emissions from that emissions category. Essentially, EPA is replacing more reasonable factors with far more conservative (overestimated) ones and allowing operators to essentially revert back to the more reasonable factors, but only if confirmed by expensive and time consuming measurement. Even with the option of developing a site-specific leak factor, this will be cost prohibitive for most operators and most facilities, causing the inventory for those facilities to revert to the overly conservative factors. So, while allowing for instrument-specific data that would be correct for a single piece of equipment, the impact of the rulemaking to the overall reporting program will be to make it less accurate. EPA should not claim that this rule as proposed increases the accuracy of the inventory based on purported accuracy improvements on single pieces of equipment.

In addition, various points in the rule require overly conservative assumptions on duration for open thief hatches, malfunctioning dump valves, and unlit flares that will likely result in overreporting emissions. Like the increasing leak emissions factors, this is contrary to the intent of IRA to make reporting more accurate and to assess an equitable methane fee. EPA should allow for more reasonable assumptions for

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<sup>1</sup> In addition, the Pipeline and Hazardous Materials Safety Administration (PHMSA), including in its proposed Gas Pipeline Leak Detection and Repair (LDAR) rule, does not define or regulate *any* production facilities as gathering. Specifically, as defined in American Petroleum Institute’s (API) Recommended Practice (RP)80 and incorporated in 49 CFR 192: “The production function, in most cases, extends well downstream of the wellhead and may include several processes required to prepare the gas for transportation. ‘Production Operation’ means piping and equipment used for production and preparation for transportation or delivery of hydrocarbon gas and/or liquids and includes the following processes: (a) extraction and recovery, lifting, stabilization, treatment’ separation, production processing, storage, and measurement of hydrocarbon gas and/or liquids; and (b) associated production compression, gas lift, gas injection, or fuel gas supply.”

source duration, especially for equipment that is visited and worked on with a much greater than annual frequency.

EPA instead seems to be forcing operators to make a false choice between installing overly burdensome, unnecessary, and expensive equipment that requires much more frequent monitoring and overreporting emissions using inaccurate default emissions factors, resulting in an artificially inflated methane fee. EPA would be in violation of IRA by imposing a methane fee on operators based on data EPA knows to be inaccurate and overestimated based on the available science. This is further exacerbated by the fact that there is a third option that EPA is not considering and that is the flexibility to employ the same type of advanced methane detection that EPA claims to be trying to incentivize within the OOOOb/c rulemaking proposals—namely, field-scale aircraft, drone, satellite, and fixed equipment monitoring. Such technologies have a better ability to identify unknown emissions sources or leaks. By allowing operators to use data from such surveys and monitors to better align their methane fee with their actual emissions in the field, EPA would encourage more frequent use of advanced technologies and field-wide surveys, consequently reducing emissions in the industry segment, which should be a goal that EPA and industry can align on.

### III. Overestimation of Emissions

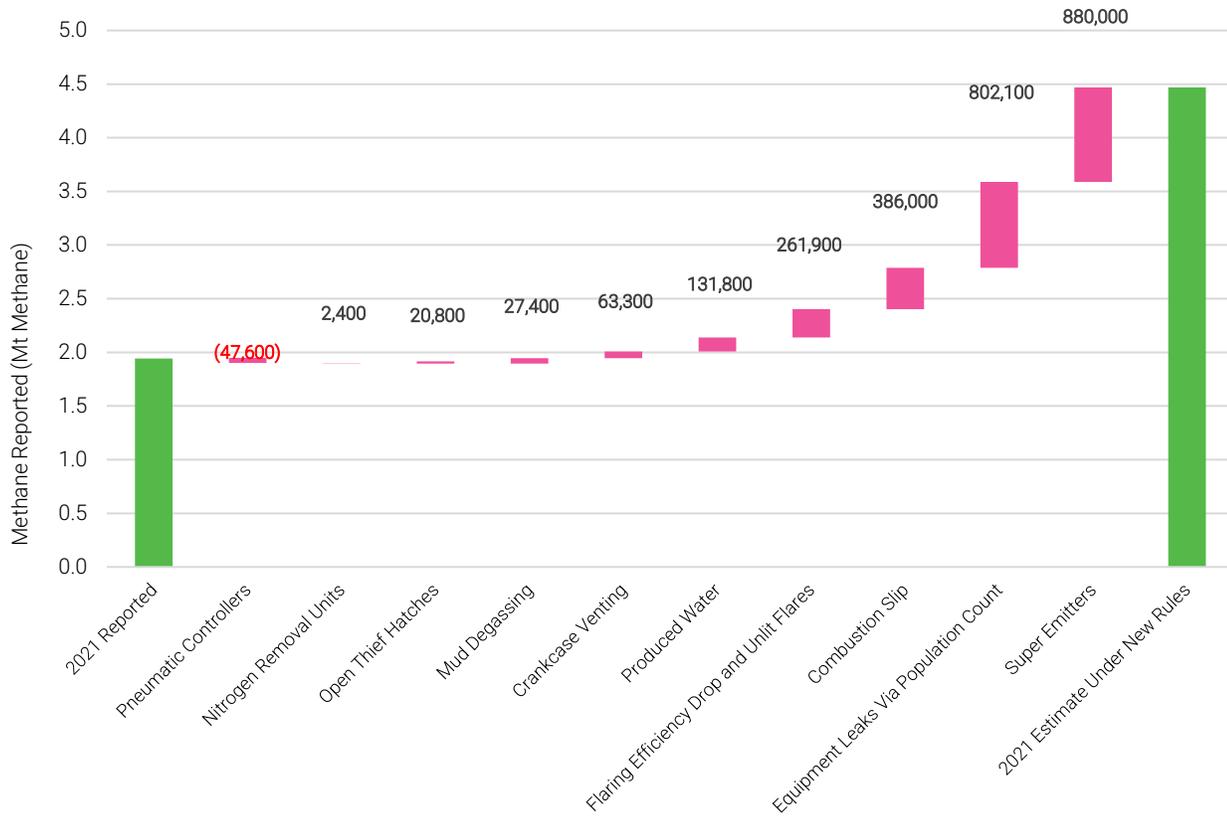
The proposed rule would result in inaccurate and overestimated emissions from the upstream sector. Enverus Intelligence Research conducted an analysis of the relative impact of EPA's Subpart W proposed rule changes by recalculating upstream and gathering emissions for 2021 using the proposed emissions factor updates and other provisions. Enverus estimates that, all things else being equal, 2021 methane emissions would have been 130% higher and CO<sub>2</sub>e emissions would have been 41% higher (an increase of 73 MMt), as shown in Figures 2 and 3 from the Enverus report below.<sup>2</sup> While these percentage increases cannot be directly extrapolated to what will be reported for 2025 under the new Subpart W rule, as other EPA regulations such as NSPS OOOOb will go into effect, their estimates are a good indication of the impact of the proposed rule.

Enverus finds that 92% of the methane increase (2.3 million metric tons of the total 2.5MMt increase from the rule) is due to the super-emitter event category, higher emission factors for equipment leaks, updates to combustion slip from engines, and lowered flaring efficiencies. Other new or modified emission source categories account for less than about .2 MMt.

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<sup>2</sup> *EPA's Emissions Revisions: More Rules, Double the Methane, Triple the Tax*, Enverus Intelligence Research, September 7, 2023.

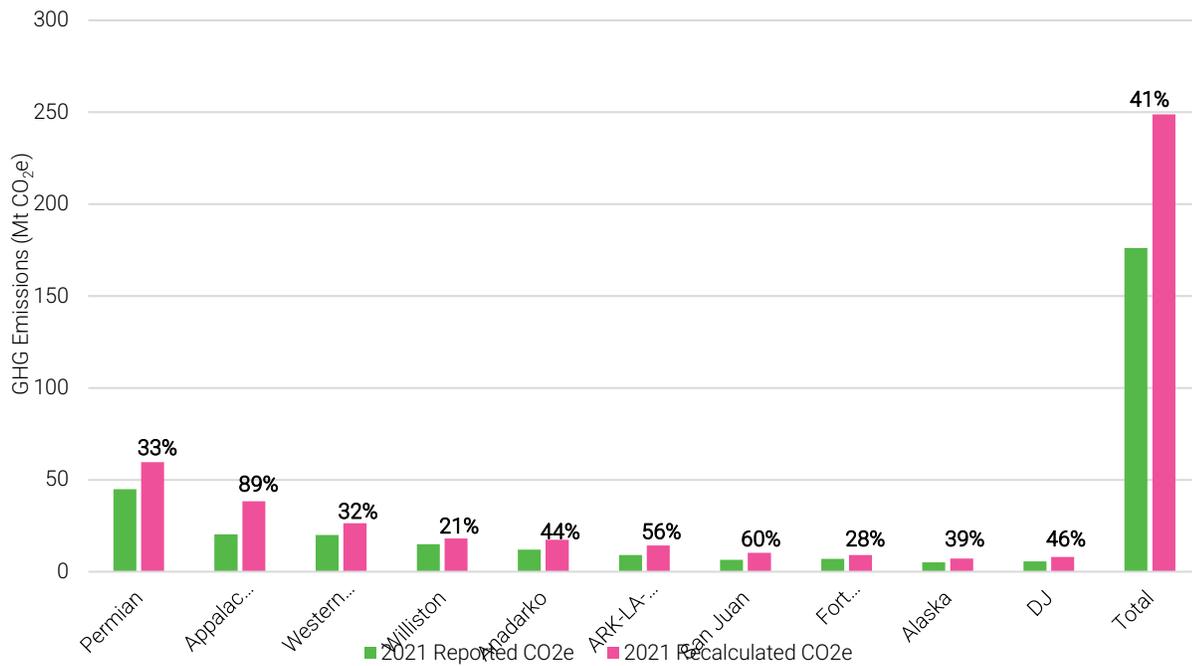
**FIGURE 2 | 2021 Estimated Increase in Methane by Source Under Proposed Rules**



Source | Enverus Intelligence® Research, Enverus ESG Analytics, EPA

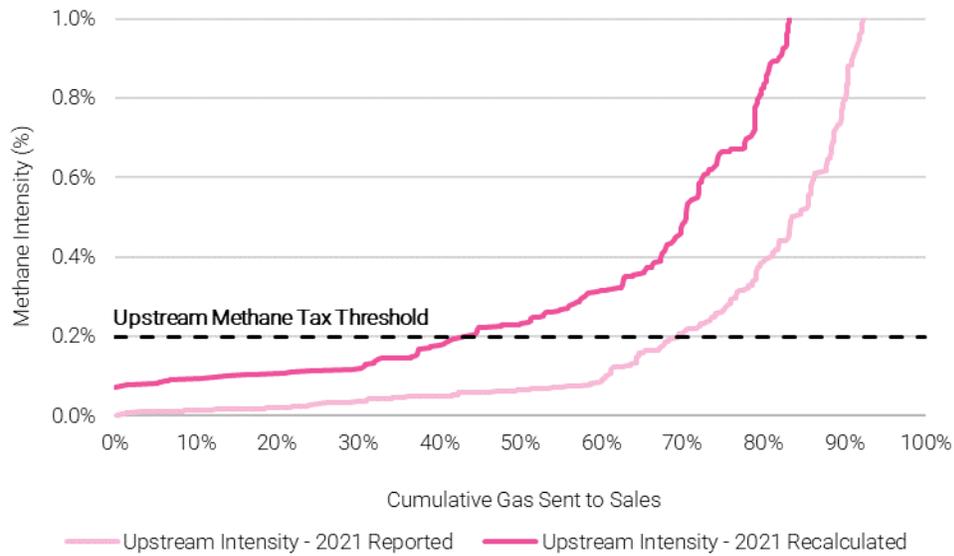
Enverus estimates that the proposed rule would push more facilities above the 25,000 tons of CO<sub>2</sub>e threshold for Subpart W reporting and increase liability for the methane tax, with well over half of upstream assets and all gathering assets now exposed, versus an estimated 30% and 34% respectively without the proposed rule changes. See Figures 4 and 5 below from the Enverus report. Enverus also finds that the proposed rule would triple the methane tax from \$1.1 billion to \$2.9 billion based on a hypothetical application of the tax to 2021 emissions reported under the previous versus the proposed rule. Overall the tax would equate to about \$.18 per barrel of oil equivalent (boe) and \$.12 per boe for the upstream and gathering sectors, respectively. Lower-producing assets would bear a disproportionate share of the tax.

**FIGURE 3 |** Estimated Change in Overall Reported CO<sub>2</sub>e Emissions by Basin

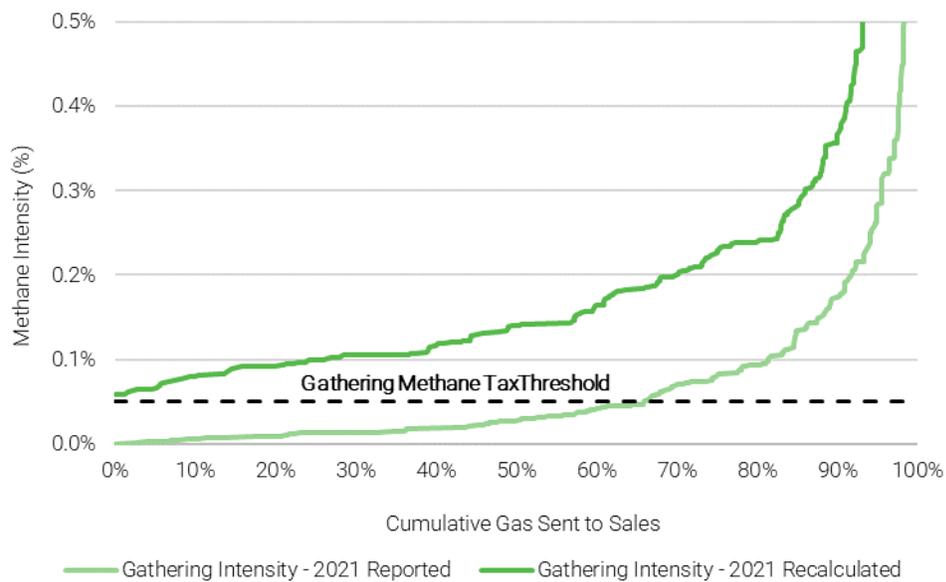


Source | Enverus Intelligence® Research, Enverus ESG Analytics, EPA

**FIGURE 4 | Upstream Methane Intensity vs. Cumulative Gas**



**FIGURE 5 | Gathering Methane Intensity vs. Cumulative Gas**



Source | Enverus Intelligence® Research, Enverus ESG Analytics, EPA

The Alliance hopes EPA finds these data from Enverus, a neutral energy analytics firm, to be useful. However, we believe even Enverus' high percentage increase is too conservative. One of our member companies ran estimates for 2022 reporting using this rule and finds it would have increased reported methane emissions by about 3.5 times and total CO<sub>2</sub>e emissions by about 40%, despite the fact that there were no physical changes in the field that would cause emissions to increase.

EPA should consider how the Colorado Department of Public Health & Environment (CDPHE) has improved accuracy. The CDPHE Air Pollution Control Division, in its 2022 Production (Upstream) Emissions Inventory Instructions for Regulation No. 7, allows the use of site-specific emission factors that are included in the source permit. If the site-specific emission factor has not been incorporated into a permit it can be used in the emission inventory by providing the base sampling data and supporting emission factor development. This has resulted in a much more reliable and accurate emissions inventory for Colorado than currently exists in the GHGRP or if finalized as proposed.

#### **IV. Source-Specific Comments:**

The Alliance provides specific opportunities to improve accuracy for specific emissions sources below:

##### *Compressors*

Within the current proposal, EPA is greatly increasing the default emission factor for compressor venting, which will at least in the short-term result in over-reporting emissions until annual leak testing/rod packing replacement or routing the emissions to the process are implemented for OOOO facilities. These default emission factors are not supported by published studies or EPA's own reported measured data within the GHGRP. By precluding operators from using an accurate factor or allowing measurement in the "as found" mode, EPA will be violating the intent of the IRA and the purpose of the GHG by artificially increasing reported emissions as compared to actual emissions in the field.

For combustion emissions from compressors within Subpart C, EPA provides three options for capturing methane slip for engines: 1) using direct engine testing, 2) OEM data; 3) default combustion efficiency factors. However, for reporting under subpart W, only the third option is available. Even under subpart C which has more options, those options are only available for equipment at a facility with a natural gas stream of 85% or higher of methane. There is also no justification for a distinction between subpart C and subpart W, as direct engine testing and OEM data should be just as appropriate for gas streams at lower methane concentrations, and for non-subpart C facilities. The simplest way to accomplish this would be for EPA to move all combustion calculations into Subpart C to both simplify reporting and remove arbitrary distinctions that split oil and gas combustion emissions across multiple subparts. If EPA does not allow for this change, given the default values are much higher than data from OEM and direct engine testing, reporting will once again artificially increase, contrary to the IRA's accuracy directive for the methane fee assessment.

**Recommendation:** EPA should allow greater flexibility for venting emission calculations, allowing them to measure the equipment as it sits in the field.

Additionally, EPA should combine combustion emissions into Subpart C to make combustion emission reporting consistent.

#### *Other Large Releases*

Under the proposed rule, EPA aims to categorize a reporting scheme for “Other Large Release Events,” using a defined threshold as either 100 kg/hour or 250 metric tons CO<sub>2</sub>e. The Alliance believes that this unintentionally would include a much larger subset of emissions than EPA intends and would also potentially lead to a large amount of double reporting. While an “Other Large Release Events” threshold could be set at a total mass, such as 250 MT CO<sub>2</sub>e, and that event could be further constrained by having a minimum mass flow rate threshold as well, to include the flow rate threshold essentially renders the total mass threshold meaningless. Very short duration events can at times have very high mass flow rates, but overall very low total mass. For example, a 100 kg/hr flow from a pipeline leak or other piece of equipment that lasts only 3 minutes would result in a total emission event of 5 kg. Surely EPA does not intend to define 5 kg releases as large events that trigger “Other Large Release Event” reporting and notification. Not only does such an event not fit the plain language meaning of a large release event, but reporting of such low emissions events would be severely misleading to the public consuming the reported information, who could misinterpret a fairly small event of short duration as releasing a much larger amount of emissions than actually released. For this reason, EPA should amend the definition to either clarify that both criteria must be met or remove the mass flow rate threshold of 100 kg/hr.

**Recommendation:** EPA should remove the mass flow rate threshold or at least require that the large release event meet both criteria, not either.

#### *Blowdowns*

EPA is proposing to require site-level details regarding blowdown events. While this source is already applied to gathering and boosting, within that segment it includes a 50 cubic foot equipment volume de minimis exemption, but there is no mention of applying the exemption to the Production Segment. EPA should apply the same 50 cubic foot de minimis threshold for equipment blowdowns to the Upstream & Production Oil and Gas reporting segment to minimize unnecessary reporting burden for small emission events. Blowdowns from equipment smaller than 50 cubic feet are burdensome to record keep and will make up an insignificant amount of upstream operator’s emissions.

Further, within the proposed rule, EPA is not allowing blowdown events to be aggregated by facility, instead opting for line-by-line event reporting. This requirement does not increase the accuracy of the reporting program, and instead places a recordkeeping burden with no potential benefit.

**Recommendation:** EPA should confirm the 50 cubic foot exemption will apply to the production segment, and should allow aggregation of emissions by facility.

#### *Crankcase Venting*

As proposed, engine size does not appear to be considered in calculating emissions or developing the emission factor. The factor developed for crankcase venting used input data in the Technical Support Document that corresponded to natural gas storage and compressor stations, not upstream production,

resulting in a significant overestimation of emissions. Gas storage compressors and compressor station engines are of a much larger scale than production facility engines and are therefore expected to have a much higher vent rate. Like blowdowns, there should be a de-minimis exemption for very small engines, or EPA should allow for the direct measurement of small volumes. While the direct measurement and test data should be allowed, EPA should still reconsider the emission factor as developed.

**Recommendation:** EPA should recalculate the factor using measured crank case emissions from the upstream segment, allow for measured and test emissions to be used, and provide a de-minimis exemption for small engines.

### *Equipment Leaks*

The Alliance supports the revision of emission factors for equipment leaks and the data sources referenced within the proposal. However, the final emission factor numbers that EPA derived from that source are puzzling and do not align with the published literature. Revised component emission factors both for surveyed leaks and by population count are increasing several times on average to be much higher than published values and more importantly, for Optical Gas Imaging (OGI) surveys, the leaker factors are much higher than for Method 21 surveys. This conflicts with the goals of both EPA's OOOOb/c rules and various state emissions rulemakings, which continue to emphasize the importance and efficacy of OGI and alternative technologies. Instead, Subpart W appears to be incentivizing using Method 21 in lieu of more modern, advanced measures. Not only would this shift operators towards using methodology that takes more time and effort, thus reducing the availability of staff to do more frequent, yet still very effective OGI and other surveys, it also would inaccurately shift emissions data to somehow show that operators using Method 21 somehow had fewer emissions, which is not demonstrated in the data.

Additionally, EPA proposes the use of individualized "enhancement factors" on top of all the other conservative assumptions within the proposed rule. The Alliance does not support the use of an enhancement factor generally, as it assigns emissions that are neither calculated, measured, or observed to operators who will then be subject to a methane fee for those emissions that EPA cannot substantiate. On top of this, the justification and calculations for the "k" factor have not been revealed through the rulemaking process, providing the public with no opportunity to provide comment on the actual value of the factor, regardless of its appropriateness as a reporting mechanism.

**Recommendation:** EPA should adopt the emission factors as proposed for the use of Method 21 regardless of survey methodology used. EPA should also eliminate the proposed use of an enhancement factor.

### *Produced Water Tanks*

EPA proposes to apply tank emissions calculation methodologies for oil storage tanks to produced water tanks, ignoring that methane emissions from produced water tanks are a very small percentage of emissions from oil storage tanks. Estimation of produced water tank emissions using modeling software, while possibly accurate, is a much higher burden than is necessary for estimating such a small emission number. Instead, EPA should allow the use of the factor from the *2021 API Compendium* of 0.0536 tons

CH<sub>4</sub>/1,000 bbl.<sup>3</sup> Given how little methane is even present in produced water, even if emissions from a tank were to increase by several standard deviations, the calculation methodology as proposed would change a miniscule amount, making the additional regulatory burden unjustifiable.

**Recommendation:** EPA should not require reporting for produced water tanks, or at the very least allow for a small emission factor to be used in lieu of individual tank calculations.

#### *Pneumatic Devices*

EPA's proposal to require the direct measurement of intermittent bleed controllers appears to be needlessly punitive. Knowing that this equipment will be phased out upon implementation of OOOOc, the measurement requirement as proposed becomes obviated, aside from the enhanced burden it places on operators that have intermittent bleed controllers in place. When EPA considers that most installations that chose intermittent bleed controllers did so to reduce emissions as compared to continuous bleed controllers, that punitive nature of the requirement is also aimed at operators who were attempting to do the right thing by reducing emissions. Rather than spending resources to install flow meters, or measure emissions, or monitor for proper function per Subpart W, operators would prefer to allocate those resources to removing or retrofitting these devices to eliminate these emissions per OOOOb/c. The GHGRP program should focus its more burdensome requirements on emissions measurement and detection that will not be phased out by a new rulemaking. Regarding the proposed factors, the Alliance agrees that a default population count factor for intermittent devices should be allowed, in addition to the factors for properly operating or malfunctioning intermittent devices that are monitored. A default population count factor is allowed for low bleeds, and so should as such should also be allowed for intermittent devices.

**Recommendation:** EPA should remove the direct measurement requirement for intermittent devices and allow for emission factors for properly operating and malfunctioning controllers as in the current rule.

#### *Drilling Mud Degassing*

The proposed language allows for two calculation methodologies depending on the availability of mudlogging data. For both, the emissions calculation is intended to capture the estimation for the amount of formation gas that is brought to the surface entrained within the drilling mud. However EPA seems to apply the methodologies to times in the drilling process when this is not possible. For example, for each calculation, the Calculation Method 1 requests emitters to use total mud circulating time (Tr) in equation W-41 and W-42 and T<sub>p</sub> in W-43; these factors for time should be changed to total mud circulating time below shallowest known hydrocarbon as prior to drilling through hydrocarbon bearing formations, emissions would not be present. Calculation Methodology 1 should remove circulating

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<sup>3</sup> [Compendium of Greenhouse Gas Emissions Methodologies for the Natural Gas and Oil Industry](#), American Petroleum Institute (API), November 2021.

hours in non-hydrocarbon bearing intervals, relevant to modern horizontal well construction. For example, surface holes are drilled by a spudder rig when no hydrocarbons are present and should be excluded.

Calculation Method 2 relies on two emissions factors which are based on a 1977 EPA reference and a 2014 ERG reference. This methodology includes a fixed rate of penetration that should be removed. Furthermore, Calculation Method 2 relies on total drilling days for the well ( $DD_p$  in W-44). As pointed out in Calculation Method 1, time variables should be based on the time in hours when mud is circulated deeper than the shallowest hydrocarbon bearing zones. Instead of these factors, EPA should adopt the factors developed in the *2021 API Compendium*.<sup>4</sup> Not only do those factors represent a more contemporary understanding of emissions from drilling mud degassing, but they are also based on variables that affect the emission rate in actual conditions, namely circulation time in hydrocarbon bearing zones.

**Recommendation:** EPA should constrain the time portions of the calculation methodologies to ensure that only the time when mud is circulated in potential hydrocarbon bearing zones is considered.

#### *Liquids Unloading*

The proposal includes three options for calculating emissions from liquids unloading, one for using flow meters (Method 1) and one for engineering estimates (Methods 2 and 3), however, Methods 2 and 3 require the use of a flow meter as in Method 1 every three years to validate the emission factor used. This requirement would be needlessly burdensome and provide no additional accuracy over other, less burdensome options. Additionally, well unloading events are not always predictable and scheduled, so direct measurement may not always be available. Further, EPA should clarify that emission reporting for liquids unloading should be done on a well-by-well basis, not an hourly estimation. Liquids unloading events are rarely, if ever, uniform across an hourly time horizon, and tend to fluctuate significantly in rate. Instead, the emissions factors applied, and the requisite reporting, should be made based on each unloading event.

**Recommendation:** EPA should remove the requirement that Method 2 and 3 calculations should be validated by direct measurement every three years, and instead allow for engineering calculations and operational data supported duration estimates.

#### *Storage Tanks*

First, as proposed, the rule requires a drop in efficiency of Vapor Recovery Units (VRUs) and destruction efficiency of flares to zero for storage tanks in the absence of evidence that the resulting efficiency would be that low. Tank emissions monitoring systems (TEMS) or other parametric monitoring should be allowed in addition to thief hatch sensors. The destruction efficiency of flares and capture efficiency of VRUs is variable, even in situations where a thief hatch has been left open, or when a thief hatch seal

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<sup>4</sup> *Id.*

has been compromised. EPA should allow for the use of engineering estimates and monitoring technologies to determine the actual capture efficiency of the equipment in place should there be an unintended event or malfunction within the thief hatch system.

Further, EPA's proposal that a thief hatch should be assumed open since the last annual thief hatch inspection without a thief hatch sensor, is without merit. Thief hatches may be opened for a variety of activities and maintenance at the facility, and a thief hatch inspection is hardly the only activity that would identify that one was open unintentionally. Instead, operators should be permitted to provide data to identify the last routine inspection of the facility or tank battery in lieu of the date of the last thief hatch inspection to identify an assumed timeline for the hatch having been left open.

**Recommendation:** EPA should allow for the use of engineering estimates and monitoring technologies to determine actual capture and destruction efficiencies for flares and VRUs where thief hatches are open and allow for a more reasonable determination of leak duration based on site visits.

*Condensate*

The proposal requires companies to separate condensate from oil production reporting. Not only would this be inconsistent from field to field and operator to operator, but is also not feasible for most upstream facilities as the two are typically sold as one volume. The requirement to separate condensate from oil reporting should be removed.

The proposed rule represents a far more exhaustive overhaul of emissions calculation and factors than previous years' changes. The Alliance believes the scope of the changes as well as the huge increase in reported emissions are strong indicators that EPA has overstepped with this rule. EPA should consider how implementing such an overreaching rule that contrasts with other ongoing rulemakings will lead to confusion, impracticalities, and legal vulnerabilities. Should EPA nevertheless persist, the Alliance recommends that EPA provide a draft template for review well in advance of reporting to ensure there are not delays with reporting.

Sincerely,



Kathleen M. Sgamma  
President