National Pork Producers Council

The Global Voice for the U.S. Pork Industry

August 18, 2025

VIA EMAIL TRANSMISSION TO NAEMS@EPA.GOV

National Air Emissions Monitoring Study Group
Office of Air Quality Planning and Standards
United States Environmental Protection Agency
109 T.W. Alexander Drive
Research Triangle Park, NC 27709

Re: Comments to NAEMS Research Group on Draft Air Emissions Estimating Methodologies for Animal Feeding Operations

NAEMS Research Group,

The National Pork Producers Council ("NPPC") appreciates the opportunity to submit comments to the National Air Emissions Monitoring Study ("NAEMS") Research Group on behalf of the nation's 67,000 pig farmers generally and the 1,900 individual pork producer signatories to the Air Consent Agreements ("ACAs"). We are writing to provide comment on the draft AP-42, Chapter 9, Section 4 ("AP-42") and Air Emissions Estimating Methods for Animal Feed Operations ("EEMs"), which were released for public comment by the United States Environmental Protection Agency ("EPA" or "Agency") on November 14, 2024.

Unfortunately, it appears that nearly two decades after entering the ACA, and 15 years since researchers first shared their data with EPA, the Agency is still struggling to properly understand livestock production and model emissions on these farms. This is not surprising since farmers made clear to EPA officials at the start of this project that, unlike source categories in other industries, no two farms or farmers are the same.

As explained in more detail below, the current draft models simply are not reliable for predicting emissions. At this point, not only is the latest draft unreliable with broad uncertainties, but over the last 20 years the swine industry has changed significantly and modern farms, and feed and nutrition regimes, are dramatically different than what existed prior to 2007. If implemented now, in their current form, the draft models would impose significant costs. Overall, the current draft models are so technically flawed that their use by EPA would render any consequent regulatory decision or action legally fraught. The total impact of the AP-42, EEMs and the related webtool could potentially lead to billions of dollars of capital costs and significant annual costs to achieve the emission reductions they could potentially require for farmers across the country.

We strongly encourage EPA to reconsider the current models and the approach the agency has taken to developing them so far.

Introduction

In addition to the draft AP-42, the EEMs for swine[1] are specifically reported in *Development of Emissions Estimating Methodologies for Animal Feeding Operations Volume 2: Swine* and *Draft Volume 2 Swine Report Appendices A through G* documents. The EPA EEMs for swine are comprised of a series of facility and open-source manure storage models. The facility EEMs for swine include models that predict ammonia ("NH3"), hydrogen sulfide ("H2S"), total suspended particulate ("TSP"), particulate matter with a diameter of 10 micrometers or less ("PM10"), and particulate matter with a diameter of 2.5 micrometer or less ("PM2.5) emissions from different types of swine barns, and models that predict NH3 and H2S emissions from swine manure lagoons and storage basins.

Further, it is our understanding that EPA intends to also release a farmer-facing emissions estimating webtool that will rely on the EEMs for the information it generates. The webtool has not yet been finalized and published for use by the public.

Background

In the late 1990s, EPA went to the National Academy of Science ("NAS") for assistance in determining if emissions at farms triggered any federal clean air permitting or other reporting obligations by the farmers who operated the farms. In 2002, NAS reported back to EPA that no reliable modeling existed and called on EPA to attempt to develop scientifically credible EEMs that livestock farmers could utilize at the animal feeding operations ("AFOs") they managed. This resulted in the NAEMS study, which was designed by EPA, conducted by university researchers, paid for by livestock farmers, and monitored barns and lagoons in 10 states over two years to measure emissions and help develop EEMs, as recommended by the NAS. EPA stated that the goal of NAEMS was to reduce air pollution, monitor AFO emissions, promote a national consensus on EEMs, and ensure compliance with requirements of the Clean Air Act ("CAA") and notification provisions of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), and the Emergency Planning and Community Right-to-Know Act ("EPCRA").

The NAEMS study was funded by farmers as part of a 2005 voluntary ACA with EPA. Under the ACA, approximately 2,600 AFOs, representing 14,000 farms, received EPA approval to participate. Participating AFOs paid a civil penalty of between $200 and $100,000 based on the size and number of farms in their operation. They also contributed to a fund to cover the costs of the monitoring study, which was designed by EPA and conducted by university researchers. The types of AFOs monitored included those raising pigs, broiler chickens, egg-laying operations, and dairies. Participating AFOs made their operations available for monitoring for two years and worked closely with EPA, researchers, and industry experts during the study. In addition to monitoring key pollutants, university researchers gathered data on how animals were managed at the AFOs, including the numbers of animals, how they were housed, and how their manure was managed. They also gathered weather data.

[1] The models reference swine, however, throughout these comments the terms hog, pig, and swine are used interchangeably to refer to the animal *sus scrofa domesticus*, or the domesticated swine.

Under the ACAs, if EPA publishes final EEMs for an AFO animal sector, that AFO must apply the final EEMs to determine what actions, if any, it must take to comply with applicable CAA, CERCLA and EPCRA requirements. Due to legislative action and subsequent agency rulemakings and court decisions, reporting of air emissions from animal waste at farms is not currently required under either CERLCA or EPCRA, but additional discussion is included below about EPCRA specifically. University researchers conducted the monitoring under EPA oversight.

In 2012, EPA used the information gathered in the NAEMS study, as well as additional information from a 2011 Call for Information, to develop draft EEMs for some of the AFO sectors that were monitored. Due to a number of significant technical concerns raised with the first attempt by EPA to develop EEMs, the EPA Science Advisory Board ("SAB") conducted a peer review of the draft EEMs and made suggestions for improvements to the models. EPA then went back to work to refine the EEMs. Species by species, EPA continued to work on revised draft EEMs over the next several years. The agency most recently released the current draft AP-42 and models in November 2024, 12 years after the first draft EEMs and 20 years after the first ACAs were signed.

The following comments are supported by technical expert review of both the AP-42 document and the swine EEMs and are provided herein for your consideration.

Scientific Review

The draft EPA EEMs are composed of a set of models for hog farms and open-source manure storage structures. The EPA swine models were systematically evaluated and tested by a team of researchers with extensive experience in agricultural and environmental engineering and longstanding associations with four of the nation's leading land grant universities: Iowa State University, the University of Georgia, the University of Nebraska, and the University of Tennessee.

The results of their review were reported in a two-paper set of peer reviewed journal articles published in 2025 in the Journal of the American Society of Agricultural Engineering. The first paper (Part I) tested the EPA swine facility NH3, H2S, TSP, PM10 and PM2.5 models while the second paper (Part II) tested the EPA open source NH3 and H2S models. These assessments clearly indicated that neither the EPA swine farm models nor swine manure storage models can be relied on to provide reasonable estimates of emissions from swine housing or manure storage facilities. This is due to the serious inaccuracies and instabilities exhibited by the models.

The EPA swine farm emission model outputs exhibit erratic trends with changes in animal inventory that result in large and erroneous changes in predicted emissions. The EPA swine manure storage models typically predict greater emissions than presented in the current scientific literature and do not accurately characterize the wide range of swine open-source manure storage systems. The conclusion of these two peer-reviewed journal articles is that EPA swine emission models simply cannot be used in their current state to accurately characterize emissions from US swine farms.

Model Limitations

The EPA Swine air emissions models were developed through regression analysis of air emissions data. The emissions data used by EPA to develop the Swine EEMs is two decades old and is not representative of the current U.S. swine production industry. Over the past 20 years, significant advances have been made in swine genetics, feed composition, management methods, as well as management and physical control strategies that have reduced air emissions from U.S. swine farms. For example, Liu and Hauge report that swine manure volume and air emissions have decreased by 18% from 2010 to 2019 (Liu & Haque, 2020). The fact that the models provide no mechanism to reflect the progression of the U.S. swine production industry over the past 20 years greatly penalizes the industry, and specifically the swine farmers who were the early adopters of management strategies, feed changes, manure storage covers, or any number of other factors that reduce farm emission rates.

Technical Comments[2]

Pig Farm Models

i. EPA Gestation Farm Models

- The EPA Gestation model reports emissions from a barn type EPA calls “No-Pit.” The EPA “No-Pit” model generates NH3, H2S, TSP, PM10, and PM2.5 barn emission factors based on the NAEMS shallow-pit barn and deep-pit barn data averaged together. As such the EPA “no-pit” barn models are not representative of any actual physical swine barn system in use by the industry.

- The EPA Gestation facility models predict NH3 emission factors that when expressed on a per-animal unit (“AU”) basis, change with barn inventory. The NH3 emissions on an AU basis are 10 times greater if the barn inventory is increased from 1,200 to 2,400 sows, and the per sow emission factor increases 20 times if the barn inventory is increased from 1,200 sows to 4,800 sows (Ramirez et al., Part I, 2025). There is no physical or biological reason for an AU based NH3 emission factors to vary with barn inventory.

- The EPA Gestation facility models also predict H2S emission factors that, when expressed on a per AU basis, change with barn inventory. The H2S emissions on an AU basis are 10 times greater if the barn inventory increased from 1,200 to 2,400 sows, and the per sow emission factor increases 20 times if the barn inventory is increased from 1,200 sows to 4,800 sows (Ramirez et al., Part I, 2025). There is no physical or biological reason for an AU based H2S emission factors to vary with barn inventory.

- The EPA Gestation models predict that breeding and gestation facility NH3 emission factors have minimal or no response to ambient temperature at lower sow inventories, but show significant temperature response at higher sow inventories.

[2] Citations to the publications referenced in this section on technical comments can be found at the end of these comments.

Ramirez et al., Part I, 2025 notes "both NH_3 and H_2S emission factor estimates show minimal or no response to ambient temperature at 1,200 and 2,500 sow inventories; however, the draft models demonstrate substantial sensitivity to ambient temperature at the 4,800-sow inventory. The NH_3 and H_2S emission factors more than triple from 2,500 to 4,800 sow inventories. Since the draft model emission outputs were normalized per AU, the emission factor should not change as inventory increases. Ambient temperature should uniformly impact both NH_3 and H_2S emissions at all inventories. Only sensitivity to ambient temperature at the greatest inventory was observed, and increasingly so with increasing LAW, which indicates improper model behavior."

This erroneous model behavior (and the resulting erroneous emission factors) occurred over the range of tested inventories for all three breeding and gestation barn manure storage classifications included in the EPA models.

- The EPA Gestation models predict that breeding and gestation facility H_2S emission factors have minimal or no response to ambient temperature at lower sow inventories, but show significant temperature response at higher sow inventories, which are expressed as the Live Animal Weight ("LAW") variable in the EPA models.

Ramirez et al., Part I, 2025 notes "both NH_3 and H_2S emission factor estimates show minimal or no response to ambient temperature at 1,200 and 2,500 sow inventories; however, the draft models demonstrate substantial sensitivity to ambient temperature at the 4,800-sow inventory. The NH_3 and H_2S emission factors more than triple from 2,500 to 4,800 sow inventories. Since the draft model emission outputs were normalized per AU, the emission factor should not change as inventory increases. Ambient temperature should uniformly impact both NH_3 and H_2S emissions at all inventories. Only sensitivity to ambient temperature at the greatest inventory was observed, and increasingly so with increasing LAW, which indicates improper model behavior."

This erroneous model behavior (and the resulting erroneous emission factors) occurred over the range of tested inventories for all three breeding and gestation barn manure storage classifications included in the EPA models.

- The TSP model for gestation farms predicts enormously different per sow emission factors at different barn inventories, which are expressed as the LAW variable in the EPA models.

Ramirez et al., Part I, 2025 notes "There is clearly an incorrect interaction between temperature and animal inventory in the draft model. The TSP and PM10 draft model estimates (figs. 2d and 2e) also show increasing emission factors with increasing LAW for all three manure storage classifications."

- The PM10 model for gestation farms predicts enormously different per-sow emission factors at different barn inventories, which are expressed as the LAW variable in the EPA models.

Ramirez et al., Part I, 2025 notes "There is clearly an incorrect interaction between temperature and animal inventory in the draft model. The TSP and PM10 draft model estimates (figs. 2d and 2e) also show increasing emission factors with increasing LAW for all three manure storage classifications."

- The Gestation PM2.5 model estimates a decreasing emission factor as inventory (expressed as the LAW variable in the EPA models) increases. Since these emissions estimates are normalized on an AU basis, the draft model should not show sensitivity to LAW.

  Ramirez et al., Part I, 2025 notes "The decreasing emission factor with increasing LAW estimated by the PM2.5 draft model is equally erroneous (fig. 2c). The PM10 and TSP draft models show an extreme increase in emission factors with increasing inventory, which are expressed as LAW variable in the EPA models. A similar sensitivity is also predicted by the PM2.5 draft model, but in this case, the emission factor increases as LAW decreases. Such widely varying emission factors as sow inventory and average sow body weight (i.e., LAW) increase are unreasonable and indicate the draft models for PM are not functioning correctly. The near 50-fold reduction in PM2.5 emission factor relative to the contribution over this range of sow weight and inventory is unrealistic."

- The EPA Gestation models overestimate annual NH3 emissions when compared to the published peer reviewed data.

  Ramirez et al., Part I, 2025 made comparisons of annual NH3 emissions from the three EPA Gestation facility models (within the pig inventory ranges of the data used to develop the models) to annual emissions from swine breeding/gestation farms in the peer reviewed published literature, and concluded that the EPA models overestimated the annual NH3 emissions when compared to the published peer reviewed data.

- The EPA Gestation models overestimate annual H2S emissions when compared to the published peer reviewed data.

  Ramirez et al., Part I, 2025 made comparisons of annual H2S emissions from the three EPA Breeding/Gestation facility models (within the pig inventory ranges of the data used to develop the models) to annual emissions from swine breeding/gestation farms in the peer-reviewed, published literature and concluded the EPA models overestimated the annual H2S emissions when compared to the published peer reviewed data.

ii. EPA Farrowing Facility Models

- The farrowing facility NH3 models are erroneously sensitive to inventory, which are expressed as the LAW variable in the EPA models. The NH3 farrowing facility model predicts decreasing per animal unit emission factors with increasing barn inventory. There is no physical or biological reason for an AU based emission factor to vary with barn inventory.

- Compared to the published literature, the EPA farrowing facility models overestimate NH3 emission factors from farrowing farms.

  Ramirez et al., Part I, 2025 states "The EPA models tended to overestimate NH3 emissions and modestly capture the increasing trend in NH3 emissions as Cycle Day and LAW increase."

- The farrowing facility H2S models are erroneously sensitive to animal inventory. The H2S farrowing facility model predicts decreasing per animal unit emission factors with increasing barn inventory. There is no physical or biological reason for an AU based emission factor to vary with barn inventory.

- The farrowing facility PM2.5 model is erroneously sensitive to inventory, which is expressed as the LAW variable in the EPA models. Evaluation by Ramirez et al., Part I, 2025 demonstrated that the EPA model predicted negative PM2.5 emissions on a per animal unit basis at low inventories and showed up to a seven-fold increase in the per-animal unit emission factor due only to increasing barn inventory.

  As noted by Ramirez et al., Part I, 2025 "Draft model PM2.5 emission factors (fig. 3c) increased as LAW increased, with greater sensitivity to LAW observed as Cycle Day increased. Lower levels of LAW resulted in negative PM2.5 emission factors."

- The EPA Farrowing facility PM10 model predicts higher per animal emission factors at both lower and higher barn inventories, which are expressed as the LAW variable in the EPA models. This is erroneous, as barn inventory should not impact the per animal emissions factor.

  Ramirez et al., Part I, 2025 notes "For each Cycle Day assessed, as LAW increased, PM10 and TSP emission factors (figs. 3d and 3e) initially decreased, but then increased with greater sensitivity to LAW observed as Cycle Day increased. This parabolic trend of PM10 and TSP emission factors is unreasonable and not supported by literature."

- The farrowing facility TSP model predicts higher per animal emission factors at both lower and higher barn inventories, which are expressed as the LAW variable in the EPA models. This is erroneous, as barn inventory should not impact the per animal emissions factor.

  Ramirez et al., Part I, 2025 notes "For each Cycle Day assessed, as LAW increased, PM10 and TSP emission factors (figs. 3d and 3e) initially decreased but then increased with greater sensitivity to LAW observed as Cycle Day increased. This parabolic trend of PM10 and TSP emission factors is unreasonable and not supported by literature."

- Ramirez et al., Part I, 2025 made comparisons of annual NH3 emissions from the three EPA farrowing facility models in the inventory ranges the models were developed with to annual NH3 emissions from swine farrowing farms in the peer-reviewed, published literature and concluded the EPA models overestimated the annual NH_3 emissions when compared to the published, peer-reviewed data.

iii. EPA Finishing Models

- The per-animal unit emission NH_3 factors predicted by the EPA Finishing models are erroneously impacted by inventory. The EPA models predict significantly different per-pig emission factors for the same pig depending on the barn inventory. To put this in practical terms, the EPA grow-finish models predict approximately twice as much NH_3 would be emitted by 2,400 grow-finish pigs if housed in one double-wide barn than they would if the identical pigs were housed in two single-wide 1,200-head barns. This is clearly preposterous and demonstrates that these models should not be used to estimate emissions.

  Ramirez et al., Part I, 2025 notes "NH_3 emission factors were impacted by inventory. For example, at one day on feed and 20 C ambient temperature, the NH_3 emission factor per AU for the 800-head inventory was double that of the NH_3 emission factor per AU of the 2,400-head inventory. Conversely, at 133 days on feed and 20°C ambient temperature, the NH_3 emission factor per AU for the 800-head inventory was approximately 2.5 times less than the NH_3 emission factor per AU for the 2,400-head inventory. In these scenarios, the average pig body weight in the facility is the same, and draft model instability is attributed to inventory (i.e., LAW), which is not corroborated in literature. When normalized to AU, the number of pigs, that is, size of the farm should not have an impact on emission factor."

- The H_2S emission factors predicted by the EPA Finishing models do not increase with temperature as they would in a real system. Both NH_3 and H_2S emissions should increase with increasing temperature. The NH_3 emissions predicted by the EPA Finishing model were sensitive to temperature and showed a 100% increase between the coldest and warmest conditions tested by Ramirez et al., Part I, 2025. The per-pig H_2S emissions predicted by the EPA model did not increase with temperature but rather decreased at cold temperatures at higher-pig inventories, which is expressed as the Live Animal Weight (LAW) variable in the EPA models. This behavior by the model is contradictory to the way a real system would behave and again, points out that the EPA models do not reflect reality.

  Ramirez et al., Part I, 2025 notes "Draft model H_2S emission factors were unaffected by ambient temperature except at greater values of LAW (i.e., greater inventories) where the colder temperatures resulted in slightly greater estimated emission factors (fig. 4b). This behavior contradicts the underlying chemical mechanisms, which would suggest a first-order rate reaction that is temperature dependent. As can be seen in figure 4b, H_2S emission factors are estimated to remain constant throughout the production cycle at lower inventories and to increase exponentially during the production cycle at higher inventories. This behavior indicates that the H_2S draft model predictions are also unstable."

- The EPA Finishing TSP models are erroneously sensitive to pig inventory and predict increasing per-pig TSP emission factors with increasing barn inventory. Ramirez et al., Part I, 2025 reported that per-animal unit TSP emission factors "unrealistically increased with higher inventory numbers" and that "This indicates that the models are not stable at animal inventories outside of those used to develop the models."

- The EPA Finishing PM10 models are erroneously sensitive to pig inventory and predict increasing per-pig PM10 emission factors with increasing barn inventory. Ramirez et al., Part I, 2025 reported that per-animal unit PM10 emission factors "unrealistically increased with higher inventory numbers" and that "This indicates that the models are not stable at animal inventories outside of those used to develop the models."

- The EPA Finishing PM2.5 models are erroneously sensitive to pig inventory and predict increasing per-pig PM2.5 emission factors with increasing barn inventory.

  Ramirez et al., Part I, 2025 reported that per-animal unit PM2.5 emission factors "unrealistically increased with higher inventory numbers" and that "This indicates that the models are not stable at animal inventories outside of those used to develop the models."

- The EPA shallow-pit Finishing model overestimated the annual NH3 emissions when compared to the published peer reviewed data.

  Ramirez et al., Part I, 2025 made comparisons of annual NH3 emissions from the shallow-pit EPA Grow-finish model in the inventory ranges the models were developed with to annual NH3 emissions from shallow-pit swine grow-finish farms in the peer-reviewed, published literature and concluded that the EPA shallow-pit Grow-finish model overestimated the annual NH3 emissions when compared to the published, peer-reviewed data.

- The EPA shallow-pit Finishing model overestimated the annual H2S emissions when compared to the published, peer-reviewed data.

  Ramirez et al., Part I, 2025 made comparisons of annual H2S emissions from the shallow-pit EPA Finishing model in the inventory ranges the models were developed with to annual H2S emissions from shallow-pit swine grow-finish farms in the peer-reviewed, published literature and concluded that the EPA shallow-pit Finishing model overestimated the annual H2S emissions when compared to the published, peer-reviewed data.

Open-Source Models

i. EPA Gestation Lagoon Models

- The EPA Gestation Lagoon NH3 model predicts negative NH3 emissions when the ambient temperature is freezing (0°C) or below. As ambient temperature decreases below freezing the EPA model predicts increasing removal of NH3 by the lagoon. This result is in error and does not represent reality. Full details of the model's erroneous behavior are documented in Ramirez et al., Part II, 2025.

- For ambient temperatures above freezing, the EPA Gestation Lagoon NH3 model typically overpredicts swine lagoon NH3 emission factors compared to the published literature.

  Specifically, Ramirez et al., Part II, 2025 reports that "model estimates are reasonable for only a few temperature and wind speed combinations compared to Grant et al. (2016)" and "model outputs predicted NH3 emissions from lagoons to be greater than values reported in the current literature, depending on ambient temperature and magnitude of wind speed."

- The EPA Gestation Lagoon H2S model predicted emission factors are not impacted by ambient temperature. This does not represent reality, as the production of H2S under anaerobic conditions is a first-order rate reaction and is well known to be impacted by temperature.

ii. EPA Finishing Lagoon Model

- The EPA Finishing Lagoon H2S model predicted emission factors are not impacted by ambient temperature. This does not represent reality, as the production of H2S under anaerobic conditions is a first-order rate reaction and is well known to be impacted by temperature.

iii. EPA Basin Model

- The EPA Basin NH3 model predicts higher emission factors for swine basins than those found in the published literature. Specifically, Ramirez et al., Part II, 2025 reported "The review by Kupper et al. (2020) reported baseline NH3 emissions from 0.24 g h-1 m-2 (5.8 g d-1 m-2) for swine slurry tanks. The baseline 0.24 g h-1 m-2 is significantly lower than the NH3 emissions predicted by the EPA model across all temperatures and wind speeds."

- The EPA Basin H2S model predicts higher emission factors for swine basins than those found in the published literature.

  Specifically, Ramirez et al., Part II, 2025 reported "A meta-analysis of 14 studies of H2S emissions from swine manure storage lagoons, basins, and tanks of varying duration and period of measurement report that H_2S emissions from slurry tanks average 1.0 ± 0.38 g d-1 m-2 (Liu et al., 2014). As shown in figure 3, at an ambient temperature of 20°C, the EPA model predicts over 2 g d-1 m-2, which is twice the value reported by Liu et al. (2014).

- The EPA Open Source (lagoon and basin) EEMs use only ambient temperature and wind speed as model inputs. This oversimplification of input factors by EPA has resulted in models that are not capable to represent the physical and management differences implemented on swine manure storage systems across the United States.

There Are Significant Concerns with the Models' Representativeness of Current U.S. Swine Industry

- Data set used by EPA to develop the Swine EEMs is outdated. The emissions data the EPA Swine EEM's are based on is nearly two decades old. The datasets for the draft model development were generated between 2005 and 2007 (EPA, 2021). Over the past 20 years significant advances have been made in swine genetics, feed composition, management methods, and emissions control strategies that have reduced air emissions from U.S. swine farms.

  For example, Liu and Hauge report that swine manure volume and air emissions have decreased by 18% from 2010 to 2019 (Liu & Haque. 2020). The adoption of Swine EEMs that are based on emissions data that does not represent the current U.S. swine industry. The adoption of these models by EPA would result in outdated and erroneously large emissions estimates applied to US swine farms.

- No EPA Swine EEMs developed for nearly half (42%) of the U.S. swine grow-finish pig inventory. The NAEMS data set used to create the EPA Swine EMMs did not include any boar farms, gilt development units, nurseries, or any wean-finish farms, and EPA did not develop emissions models for these swine farm types.

  Ramirez et al., Part I, 2025 notes that "the draft models are inapplicable to nurseries and wean-finish farms, which is approximately 42% of the U.S. finishing inventory. These models, if adopted as presented, will have direct and sizable implications for applications of federal and state emission monitoring programs to the U.S. swine industry, and their lack of applicability to the current production systems is of concern."

- EPA EEMs do not allow for control strategies. The U.S. swine industry is continually evolving to improve environmental management. The EPA EEMs do not allow any method to consider the impact of management strategies, lagoon covers, feed changes, or any number of other factors that reduce facility emission rates. The oversimplification of model input factors by EPA renders the swine EMMs unable to represent the large number of management practices and other methods that producers implement that result in decreased air emissions.

If Finalized, the Economic Impact on Family Farmers Would Be Catastrophic

EPA's draft AP-42 and EEMs, if and when finalized, are intended to provide standardized tools, particularly in combination with a not-yet-finalized webtool mentioned above, so livestock farmers, especially smaller family farmers, across all species can determine if their emissions exceed regulatory thresholds that would require CAA permits or other reporting.

For livestock farmers, these draft models will have significant economic and logistical implications. Even determining whether a CAA permit is needed can be burdensome – especially for family farms without full time environmental compliance staff. For those farmers who signed the ACA, they will be obligated to use the methodologies to calculate their farms estimated emissions and then report them to EPA. While farms not subject to the ACA will not have the same immediate obligation, it is almost certain that within a few years as state implementation plans are updated and revised they will also be required to undertake the same calculations[3].

Costs of Determining Permit Need under the New EEMs

i. Internal Labor and Opportunity Cost

Livestock farmers will likely need to spend hours of staff time (or personal time) to collect records, learn the webtool, and input data to calculate their emissions. For a mid-size operation, it is reasonable to estimate several days of work in total, especially if iterations are needed. For instance, producers might run the webtool for different scenarios or double-check uncertain inputs, effectively doing multiple runs. The opportunity cost of this labor – time not spent on farm operations – can be substantial, especially during busy seasons. Conservatively estimating even 16 hours of labor (two full workdays) at a fully burdened labor rate of $25/ hour, that is approximately $400 in labor cost per farm. For larger or more complex farms, it could easily double if data collection requires coordination among multiple managers (feed, manure, animal records). Small and family-run farms may not have dedicated staff at all, meaning the owner/operator must take on this task personally.

ii. Consultant or Legal Fees

Because the calculations tie directly into regulatory compliance, many livestock farmers will feel compelled to hire environmental consultants or attorneys to assist. A professional consultant will likely be engaged to run the webtool and interpret the results, ensuring nothing is overlooked. Consultant fees for environmental compliance work commonly range from $100 to $200 per hour, and preparing a complete emissions assessment could take anywhere from a few hours to several days. Even a simple consultation (say 8-16 hours) could cost on the order of $1,000-$3,000. For farms near the thresholds, some may also seek legal advice on permitting implications – incurring additional costs – to understand, for example, whether they must apply

[3] As discussed in more length later in these comments, EPA's 2018 decision to exempt livestock farms from mandatory reporting under EPCRA is currently in litigation. If that exemption were to be overturned, every pig farmer would be required to utilize these EEMs to calculate their farm's emissions and determine whether a reporting obligation exists.

for a CAA Title V permit or if there are state-specific requirements. These costs add up quickly, particularly for family-run farms operating on thin profit margins.

iii. Navigating the Complexity

In practice, not all farms keep records in the format the EPA webtool will expect. As an example, a farm might record annual manure production in tons but the webtool might ask for lagoon surface area or animal feeding rates. These nuances require translation of farm records into webtool inputs – a task requiring some technical acumen.

iv. Total Part 1 Costs

In summary, Part 1 costs (just to determine if a permit is needed) include: staff/owner time (often hundreds of dollars' worth), consultant fees (potentially a few thousand dollars), and possibly software or monitoring equipment if farmers choose to verify emissions independently (e.g., some may purchase hand-held ammonia detectors as a check, at additional cost). These up-front expenditures come before any mitigation or permit application even occurs. They represent a new financial burden directly attributable to the EPA's AP-42, EEM, and webtool if/when all are finalized. The financial burden would directly impact tens of thousands of farms – including all species – nationwide. If even a moderate cost (estimating $3,000 on average) is incurred by 20,000 farms, that would be a $60 million nationwide compliance cost just for analysis.

v. Permit Application Costs

If a farm does find that it exceeds the CAA thresholds, then additional costs would impact the livestock farmer. The farmer would need to prepare a permit application or other paperwork for air permit authorities. Title V CAA permit applications are notoriously complex, often running tens of thousands of dollars in consultant and legal fees for industrial sources. While states might streamline permits for livestock farms, it is not unreasonable to anticipate at least $5,000-$10,000 in expenses per farm for preparing permit documentation (including application fees, consultant time, public notice fees, etc.). Smaller farms may feel this cost most acutely, as it can represent a large fraction of their annual income.

Costs of Emissions Mitigation and Compliance Changes

If a livestock farmer's emissions are above regulatory thresholds, they essentially have two choices: reduce emissions or potentially face operational limits/shutdown (since running without required permits could invite enforcement). Practically, farmers will need to implement mitigation measures to lower emissions enough to comply[4]. The EPA's draft AP-42 or EEMs do not directly evaluate mitigation options, but the expectation is that farmers will be pressured to

[4] A major concern with these draft EEMs is that, due to how out of date the data is and how inaccurate and unreliable their calculations are, the number of significant production changes and developments that amount to significant mitigation efforts already adopted the last 20 years will not be factored into regulatory decisions around emissions, further unfairly burdening and penalizing those farmers who have already sought to improve their operational efficiency and reduce their environmental footprint.

adopt certain control technologies or best management practices to reduce pollution including but not limited to the following options across all livestock species:

- Manure storage covers (including impermeable covers on lagoons or tanks)
- Anaerobic digesters (which capture and destroy methane and can reduce other gases)
- Electrostatic precipitation systems (to reduce particulate matter and odor emissions from barns)
- Diet manipulation, such as feed additives to cut enteric methane emissions from ruminants
- Wet scrubbing systems for barn exhaust (to chemically or biologically scrub ammonia, odors, and PM); and/or
- Improved land application of manure (biosolids), such as manure injection or rapid incorporation to reduce ammonia volatilization

Each of these measures comes with a substantial price tag. Below, we describe and validate cost estimates for each method, using current data from academic, industry, or government sources.

i. Manure Storage Covers

Covering manure storage (like anaerobic lagoons or slurry pits) can significantly reduce emissions of NH3, H2S, odors, and methane by creating a physical barrier. There are many cover types – from straw floating covers to heavy-duty synthetic covers with gas collection – and costs vary accordingly. Impermeable synthetic covers (e.g., plastic or rubber membranes) are the most effective but also most expensive. Recent field data indicate the cost for a large lagoon cover is on the order of hundreds of thousands of dollars.

An average lagoon for a 1,000 A.U. hog farm is approximately 2-3 acres. Costs generally range from $4-5 per square foot for the cover alone. For example, for a 2-acre lagoon (87,120 sq feet) cover, the cost is $392,040, assuming the midpoint of $4.50 a square foot. For a 3-acre lagoon (130,680 sq feet) cover, the cost is $588,060. For example, in just one state, North Carolina, considering the average size of farms, this likely would cost family pig farmers nearly $1.5 billion just for the cover materials alone, not including the labor or other costs associated with installation such as piping and gas collection systems, flares, and construction of digesters.

When scaled nationally, especially if also factoring in the impact on other species such as dairy or cattle, the financial burden would be overwhelming and exceeding many billions of dollars.

Covers also have maintenance costs: They must be periodically cleaned or adjusted, and gas collection systems (if used) need maintenance. Despite potential benefits, the upfront cost of manure storage covers is often prohibitive without subsidies. Most farmers simply cannot afford an investment of $500,000 that does not increase their production or revenue.

ii. Anaerobic Digesters

Anaerobic digesters are essentially large, sealed tanks or covered lagoons that decompose manure in the absence of oxygen to produce biogas (methane), which can be captured and combusted to reduce greenhouse gas emissions. With certain designs, digesters may also reduce odor and volatile solids (thus somewhat reducing ammonia indirectly). However, digesters are among the most capital-intensive options in manure management.

According to the EPA's AgSTAR program, typical on-farm digester installation costs range from $400,000 to $5 million, depending on the size and technology used. EPA reports a "typical" installation cost of about $1.2 million and notes that digesters are generally only viable for operations with 500+ head of cattle or 2,000–5,000 hogs, depending on manure collection methods.

Recent case studies confirm these estimates. In California, 19 recently built dairy digesters (producing renewable natural gas) averaged $947 per cow in total project cost – roughly $4.38 million for a 7,500-cow dairy. Smaller plug-flow digesters for ~1,600-cow dairies have been reported at $1.1–$1.5 million (about $900–$1,100 per cow). An industry report noted a <5,000-cow digester in 2022 cost $4.7 million, while a 14,000-cow digester reached $9.7 million.

Applying EPA's $1.2 million "typical" estimate to operations large enough to potentially install digesters reveals substantial aggregate costs. For hog farms, as of 2022, there were 47,542 hog operations with 500+ animals. Assuming just one-quarter (11,885) of those might consider digesters, if required to rely on the faulty and uncertain numbers returned by EPA's draft emission models, the total cost could exceed $14.2 billion.

Beyond capital investment, digesters come with significant operation and maintenance expenses – including pump and engine upkeep, flare management, and handling of digested effluent. Annual operating costs can range widely and profitability often hinges on complex revenue streams such as electricity sales, Renewable Fuel Standard credits for biomethane, carbon credits, or tipping fees for co-digested waste.

Without those revenues or substantial grants, a digester deployed solely for emissions mitigation required under EPA's faulty draft EEMs would be financially destructive for most farms. For this reason, many small and midsize farms find that the diseconomies of scale make digesters largely infeasible. In summary, while digesters may reduce emissions, they come with an extremely high price tag – both upfront and ongoing. Mandating or incentivizing their use without parallel investment support would impose billions in cumulative costs across US livestock farmers.

iii. Electrostatic Precipitation Systems

Electrostatic precipitators ("ESPs") and related electrostatic particle ionization systems are technologies used to remove dust and particulate matter from barn exhaust air by electrically charging the particles and collecting them on oppositely charged plates or surfaces. According to the EPA, ESPs can be more than 99% effective at removing particulates from gas streams, with collected material either dry-removed or washed away. By reducing dust, ESPs also reduce odors and ammonia carried on dust particles.

These systems have shown some success with documented PM reductions of 50% or more. Designs vary widely—from basic ionization wires suspended in barns to more industrial-scale filtration systems at exhaust vents.

For example, Iowa State University evaluated a swine-specific ESP setup at a cost of $16 per pig space. Assuming an average hog finishing farm with a 2,400-head barn, that equates to approximately $38,400 in installation costs, plus additional electricity and maintenance expenses per barn, also a significant costs for a family farmers to incur.

In summary, while not as costly as anaerobic digesters, electrostatic precipitation systems still represent a significant investment, particularly for family-owned farms. A small, independent pig farm could easily face $50,000 to $150,000 in capital costs. High-end systems can run well over $400,000, and like digesters, ESPs do not generate revenue, making their adoption difficult to justify or afford.

iv. Wet Scrubbers for Barn Exhaust

Wet scrubbers are air pollution control devices commonly used in industrial settings. They use liquids (typically water or acidified water) to wash out NH3, odors, and PM from exhaust air. According to EPA, scrubbing works by transferring airborne particles from a gas stream into liquid. In the context of livestock farms, wet scrubbers have been used in Europe to help swine and poultry barns meet strict air quality standards, especially for NH3.

Scrubbers can be very effective. Acid-based systems can remove over 90% of ammonia from ventilation air and reduce odors and PM significantly. However, they are incredibly complex and costly in a farm setting. Iowa State University Extension reports that outfitting a barn with a scrubber designed for 35 cubic feet per minute (cfm) of exhaust per pig — a typical ventilation rate — costs $45 to $70 per pig in upfront investment, with an additional annual operating cost of $15 to $20 per pig space for acid, electricity, water, and maintenance.

For a farm selling the average 8,721 hogs per year (USDA, 2015), the initial capital cost would range from approximately $348,840 to $610,470, with ongoing annual costs between $130,815 and $174,420, depending on the system. These are substantial figures for the average family farm operation and the costs scale linearly with herd size.

At a national level, the potential burden is even more striking. There were 47,542 hog operations with over 500 head in 2022. Applying the low end of the cost range:

- $45 × 500 head × 47,542 operations = $1.07 billion in national installation costs.
- Using the high end ($70/head), the figure rises to $1.66 billion.

Larger operations with multiple barns could easily face several hundred thousand dollars in capital expenses. For example, a site finishing 4,000 pigs might spend $180,000 to $280,000 upfront, with $60,000 to $80,000 per year to operate the system. Equipment includes fans, chemical storage (typically sulfuric acid), pumps, and media-filled towers or chambers, and produces concentrated ammonium sulfate waste requiring careful handling and land application.

Some less expensive designs, such as simple spray chambers in ventilation stacks, exist but offer much lower effectiveness—perhaps 20–50% ammonia removal. The 70–90% efficiency range is only achievable through multi-stage, acid-based systems—the most costly and labor-intensive to operate.

In summary, while wet scrubbers can be effective, their costs are prohibitive, on the order of $150 per pig space over 10 years when combining installation and operations, and completely infeasible. For most farmers, this would represent a significant and unaffordable increase in production costs—comparable to adding a factory-grade pollution control system to a farm. Without financial assistance or compliance flexibility, widespread adoption would be economically unfeasible for nearly any US livestock farmer.

Summary of Mitigation Costs

The capital investments range from tens of thousands to millions, and even operational tweaks carry ongoing costs per animal. A few key takeaways: Manure covers and digesters are major investments unlikely to be affordable without subsidies; scrubbers and ESPs, while somewhat less capital-intensive, still impose substantial new costs for retrofitting barns; and feed additives, though easier to implement, create a continual cost drain. Even manure application improvements, which might appear minor, can cost farms tens of thousands annually in fuel and labor.

In total national terms, the impact of the AP-42, EEMs and the related webtool could potentially lead to farmers being required to invest billions of dollars of capital costs and significant annual costs due to the EEMs unreliable and inconsistent emission calculation. Even if only a subset of farms implement each type of mitigation, the aggregate burden is enormous.

EPA Cannot Rely on Scientifically Flawed and Unsupported Models to Inform Regulatory Decision-Making

As detailed above, EPA's draft EEMs are so technically flawed that their use by EPA would render any consequent regulatory decision or action legally fraught. While courts are generally at their most deferential when it comes to an agency's scientific determinations in its area of special expertise, the agency's modeling and methodologies must still be reasonably supported and explained. *See Chem. Mfrs. Ass'n v. EPA*, 28 F.3d 1259, 1265-66 (D.C. Cir. 1994) (noting that "judicial deference to the agency's modeling cannot be utterly boundless" and holding EPA's reliance on a model to designate a chemical as high risk was arbitrary and capricious). "An agency's use of a model is arbitrary if that model 'bears no rational relationship to the reality it purports to represent.'" *Texas v. United States EPA*, 137 F.4th 353, 373 (5th Cir. 2025) (citing *Columbia Falls Aluminum Co. v. EPA*, 139 F.3d 914, 923 (D.C. Cir. 1998) (quoting *American Iron & Steel Inst. v. EPA*, 115 F.3d 979, 1005 (D.C. Cir. 1997)).

This is precisely the case here, where the EEMs do not accurately model real-world emissions data. As this comment, and the two recent, peer-reviewed journal articles referenced explain, the swine EEMs are not reflective of reality in numerous ways and run contrary to published, peer-reviewed data. Factors such as animal inventory, varying geographical and seasonal climatic conditions, and differing facility types and operational profiles all complicate emissions estimations and make a one-size-fits all approach indefensible. Inconsistent application and results are hallmarks of arbitrary and capricious technical modeling. *See Wildearth Guardians v. Bernhardt*, 502 F.Supp.3d 237, 254 (D.D.C. 2020) ("The Court does not mandate that [the agency] use one particular method over another, but the agency must be consistent.").

It bears emphasis that EPA cannot rely on models without addressing the significant deficiencies raised by NPPC and other interested parties. *See Appalachian Power Co. v. EPA*, 249 F.3d 1032, 1052-54 (D.C. Cir. 2001). Indeed, EPA "must explain the assumptions and methodology used in preparing the model and provide a complete analytic defense should the model[s] be challenged," as NPPC has done here. *Texas v. EPA*, 137 F.4th at 369 (internal quotations omitted). Tellingly, as far back as 2009, stakeholders and regulators alike have agreed that methods for estimating emissions from livestock manure management operations are unreliable, highly farm-specific, and return widely varying results.

EPA's own SAB previously determined that while emissions data could be studied for individual farms assessed, under the approach EPA took at the time, the data could not be reliably extrapolated into a nationwide-applicable emissions standard.[5] Yet here we are again: EPA's swine EEMs showcase a troubling foundation that appears to render them both inconsistent and utterly unreliable.

It is patently arbitrary and capricious for EPA to rely on EEMs for regulatory decision-making given the various inconsistencies in the resulting estimates and the instability of the models. In *Texas v. EPA*, the Fifth Circuit Court of Appeals rejected EPA's air quality modeling where it could not explain differences in conflicting results for sulfur dioxide concentrations in the same area. 137 F.4th at 369. The Court found that EPA's failure to investigate the reasons for disparities between the model's predictions and the results of on-the-ground monitoring. *Id.* Ultimately, courts "cannot excuse the EPA's reliance upon a methodology that generates apparently arbitrary results." *Id.* (internal quotations omitted). Like the model in *Texas v. EPA*, EPA's proposed EEMs are rife with unexplained variability and therefore cannot pass scientific muster. *See also N.M. Farm & Livestock Bur. v. United States DOI*, 952 F.3d 1216 (10th Cir. 2020) (agency technical determinations arbitrary and capricious where "purely speculative").

Unrealistic Overestimates of Air Emissions from Animal Waste Are of No Use to State and Local Emergency Response Authorities and Could Leave Swine Producers Exposed to Baseless Lawsuits.

In 2009, when EPA's requirement for large animal farms to report air emissions from animal waste initially went into effect, farmers attempted to comply in good faith but were met with bewildered responses from emergency officials. For example, numerous farmers in Wisconsin detailed their attempts to report emissions estimates to state and local emergency response

[5] Letter from Dr. David T. Allen, Chair, Science Advisory Board, to Hon. Bob Perciasepe, Acting Administrator, U.S. EPA, April 19, 2013, *available a* https://yosemite.epa.gov/sab/SABPRODUCT.NSF/81e39f4c09954fcb85256ead006be86e/08A7FD5F8BD5D2FE85257B52004234FE/$File/EPA-SAB-13-003-unsigned+.pdf (last visited July 21, 2017).

authorities, which responded with confusion as to the purpose of the information.[6] NPPC staff further explained how state and local emergency response coordinators were so overwhelmed by the volume of reports that they "rejected the hundreds of reports that followed" after fax machines ran out of paper, took "phone[s] off the hook," and began telling pork producers "that there was no reporting requirement and that the rule was simply internet hoax."[7] EPA Region 4 even reportedly informed state officials that "they did not need to accept the reports and instead to direct any farmers to [contact] EPA's Office of Water.[8]

This confusion was not limited to swine producers; U.S. Poultry and Egg Association staff recounted, as follows:

> On January 20, 2009, the day that the EPCRA reporting requirement went into effect, I received a call from the office of Maryland State Emergency Planning Commission asking me what the reports were and what were they supposed to do with them. I informed the caller the reports were being submitted in response to EPA's rule and in accordance [with] the EPCRA reporting requirement. The individual I spoke with was puzzled as to why the reports were being submitted and acknowledged it was wasting their time. To my knowledge, neither the multiple reports filed on January 20, 2009, nor any of the EPCRA reports filed later resulted in an emergency response. The situation was identical when poultry farmers notified Local Emergency Planning Committees (LEPCs), which are typically members of the local fire departments—often volunteer fire departments. In an attempt to understand how the LEPCs viewed receiving EPCRA reports, USPOULTRY reached out to the president of the National Association of SARA Title III Program Officials (NASTTPO), Tim Gablehouse. Mr. Gablehouse informed USPOULTRY that while their organization is very interested in understanding the hazards their members may face when responding to an emergency on a farm, EPCRA reports that merely notify of releases of non-life-threatening, low concentrations of ammonia, do not provide meaningful information that enhances their ability to plan for emergency responses.[9]

In a letter to the EPA Administrator, NASTTPO has plainly stated that the EPCRA emergency release reports and CERCLA continuous release reports from farms primarily regarding ammonia from animal manure management are of "no particular value" to Local Emergency Planning Committees and first responders and "are generally ignored because they do not relate

[6] *See* National Pork Producers Council's and U.S. Poultry and Egg Association's Brief in Support of EPA's Motion to Stay Issuance of Mandate, Ex. 1 at 10-13; Ex. 2 at ¶ 10-13; Ex. 7 at ¶ 7, *Waterkeeper Alliance, et al., v. U.S. EPA*, Nos. 09-1017 & 09-1104 (D.C. Cir. Jul. 27, 2027) (Doc. #1686173).

[7] *Id.* at Ex. 9 ¶¶ 7-9.

[8] *Id.* at ¶ 9.

[9] *Id.* at Ex. 4 ¶ 15.

to any event."[10] If local emergency response coordinators find the reports they have received so far to be useless, there is no reason to report such emissions under EPCRA Section 304, which is entitled "*Emergency* notification," 42 U.S.C. § 11004. Stating the obvious, such releases are not emergencies and will not result in any emergency response. Equally problematic, inaccurate reporting based on technically flawed models misinforms the public and leave swine producers vulnerable to baseless litigation. While these scenarios are unlikely given the well-reasoned and defensible 2019 EPCRA exemption, should a reviewing court invalidate that exemption, swine producers would once again face considerable uncertainty as to whether and how to report and whether they are vulnerable to citizen suits alleging inaccurate reporting or failure to report.

Compliance and Permitting Questions Remain

Finally, in addition to our significant concerns regarding the technical, economic and legal issues associated with the draft AP-42 and EEMs, we are disappointed in the failure of the EPA's Office of Enforcement and Compliance Assurance ("OECA") to adequately respond to the multiple concerns we have raised regarding the legal obligations livestock farmers will face once the EEMs are finalized. In light of the significant, nearly 20-year passage of time since those agreements were signed, fundamental notions of due process demand that the process not be completed until there is a clear understanding of the obligations farmers will face.

On April 8, 2024, representatives of the ACA signatories met with EPA staff, including a staff member from OECA. At that meeting, the parties discussed the numerous questions that livestock farmers have raised regarding EPA's plans to finalize and implement the EEMs, as well as how EPA intends to provide notice to the farmers and other parties who will face rapid deadlines for action under the nearly 20-year-old ACAs. Now, over 16 months later, answers are still not available.

EPCRA

For decades, EPA has wrestled with the proper role of EPCRA reporting of animal waste air emissions at farms, including the fact that it added a reference in the ACA to potential EPCRA reporting requirements depending on the outcome of the final EEMs.

Most recently, in the winter of 2024, EPA published an Advance Notice of Proposed Rulemaking ("ANPRM") on reinstating the EPCRA reporting requirement of animal waste air emissions at farms (Docket ID No. EPA-HQ-OLEM-2023-0142). At that time, and consistently through the past couple decades of dialogue on this issue, livestock farmers have held there is absolutely no legitimate reason for requiring them to report to state and local emergency response authorities estimates of the amount of air emissions from their animals' manure. It is exceedingly rare for a local emergency response authority or fire department not to know of the existence of livestock farms within their jurisdiction, and it is common for a livestock farm to have an active information-sharing program with the local authority.

[10] 73 Fed. Reg. 76,948-54 (Dec. 18, 2008).

Congress recognized the need to exempt farms of all sizes from having to report air emissions from animal waste and thus, it enacted the Fair Agricultural Reporting Method Act ("FARM Act") as Title XI of the Consolidated Appropriations Act of 2018. Pub. L. No. 115-141, §§ 1101-1103, 132 Stat. 348, 1147-48 (2018) (codified at 42 U.S.C. § 9603(e)(1)(B)). Based on EPA's longstanding interpretation of the interplay between CERCLA and EPCRA reporting, EPA revised its EPCRA reporting regulations to likewise exempt farms from having to report such emissions under EPCRA. *See* 84 Fed. Reg. 27,533 (June 13, 2019). Nevertheless, activist groups have maintained that reporting is required under EPCRA and are seeking a court order vacating EPA's 2019 EPCRA exemption[11]. Should those activist groups eventually succeed, EPA does not need predictive modeling to forecast the chaos that will ensue, as history will repeat itself.

Beyond the fact that the existence and location of livestock farms is public knowledge in the communities where they are located, the recipients of these proposed EPCRA reports have stated numerous times that they don't need the reports and don't want to receive the reports.

It is also quite common in rural communities for the owners or staff of a hog farm to be active members of their local fire department or emergency response systems (they commonly serve as local fire chiefs, volunteer fire fighters or EMS technicians, serve on their oversight boards, or contribute substantial funds above and beyond any public levies to support their operations). While there may be de minimis and continuous releases of air emissions from animal manure, this fact is widely known to occur at every livestock farm. As such, there is absolutely no need to report this to a state or local emergency response authority for the surrounding community to know this is happening.

Indeed, the National Association of SARA Title III Program Officials ("NASTTPO") is on record stating that state and local emergency response agencies do not need or want EPCRA Section 304 notifications for air emissions from animal manure at farms. Specifically, a June 1, 2017 letter to then EPA Administrator Pruitt from Timothy Gablehouse, then-President of NASTTPO, stated:

> We have had experience with EPCRA emergency release reports as well as CERCLA continuous release reports from farms primarily regarding ammonia from animal manure management. These reports are of no particular value to LEPCs and first responders and they are generally ignored because they do not relate to any particular event." NASTTPO adds that "the most important thing to LEPCs and first responders are not detailed regulatory requirements for a facility's relationship to these groups, but rather the simple act of open dialog and coordination… . NASTTPO believes that open dialog and coordination can be more effective than release reporting for farms that do not handle

[11] On August 7, 2025 the US District Court for the District of Columbia upheld EPA's exemption for livestock reporting under EPCRA. Rural Empowerment Association For Community Help et al v U.S. EPA, 2025 WL 2255085, (DDC 2025). We assume plaintiffs will appeal this decision.

> quantities of EPCRA EHS chemicals but are nevertheless expected to report regarding animal manure management.

Farmers are already on the receiving end of threatening and harassing calls from activist groups seeking to put them out of business. A likely consequence of adding an EPCRA reporting requirement for air emissions from animal manure would be increased harassment of farmers, all due to inaccurate and unreliable estimates.

CONCLUSION

Due to the overwhelming technical concerns regarding both the AP-42 and EEMs for the swine industry, as well as the significant economic and logistical impacts on pig farmers, NPPC strongly encourage EPA to reconsider the current models and the approach the agency has taken to developing them so far.

The adoption of the EEMs that are based on farms that do not represent the current U.S. swine industry and predict outdated and erroneously large emissions estimates are arbitrary and capricious on their face and would place an unwarranted regulatory and economic burden on U.S. swine producers. If adopted, these models would have direct and significant negative regulatory and economic implications at both the state and federal level on the U.S. swine industry.

The U.S. pork industry would welcome the opportunity to sit down with EPA and further explore how we can help the agency and state and local regulators to understand the environmental performance of US hog farms.

If you have any questions, please do not hesitate to contact me.

Sincerely,

Michael C. Formica
National Pork Producers Council
formicam@nppc.org
202-347-3600

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