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February 15, 2024

U.S. Environmental Protection Agency  
EPA Docket Center  
Docket, Mail Code 28221T  
1200 Pennsylvania Avenue NW  
Washington, DC 20460

*Disclaimer: The opinions expressed herein are our own and do not necessarily reflect the views of the Johns Hopkins University.*

RE: Docket ID No. EPA–HQ– OLEM–2023–0142

Dear William Nogel and EPA Administrators,

Thank you for opportunity to comment on the “Potential Future Regulation for Emergency Release Notification Requirements for Animal Waste Air Emissions Under the Emergency Planning and Community Right-to Know Act (EPCRA).” The Johns Hopkins Center for a Livable Future (CLF) is an interdisciplinary academic center based in the Bloomberg School of Public Health’s Department of Environmental Health and Engineering and focused on food systems and public health. CLF has actively researched the public health implications of industrial food animal production since our founding in 1996.

We recognize the many considerations that go into rulemaking related to air pollution from animal production and the management of animal waste and the challenges inherent to creating an infrastructure to gather meaningful information for communities and for reporting requirements under EPCRA. Our comments pertain to the following sections outlined in the ANPRM: #1- Health Impacts, #2- Emissions Estimating Methodologies, #36- Benefits- Environmental Justice, #37- Indirect Benefits, #44- RQ Adjustment-General, and #46- National Report based on USDA or State Data.

### **#1-Health Impacts**

Air pollutants are an important public health risk and the magnitude of air pollutants contributed by animal agriculture remains in question given the “lack of adequate, accurate and scientifically credible data” (Copeland, 2014). Emissions from food animal production (FAP) facilities have largely been exempted from emissions reporting requirements and regulations (Burns 2023). Air emissions and exposures from FAP include particulate matter, endotoxins, volatile organic compounds, and gases such as nitrous oxide, hydrogen sulfide, ammonia (Soukup 2001, Schinasi 2011, Hribar 2010, Williams 2011, Wyer 2022), and bioaerosols (Casey 2013, Jahne 2015, de Rooji 2019, de Matos Nascimento, 2020). Fine particulate matter, ammonia, nitrogen oxides and methane are important contributors to compromised air quality on a local, regional and global scale (Copeland, 2014)

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While gaps exist in our understanding of the contributions of animal agriculture to regional pollutant concentrations due to the absence of EPA air monitoring sites in rural areas, it is clear that community members living near FAP operations face increased exposure to air pollution and health risks (Lewis, 2023). Several studies have conducted direct measurements of animal agriculture-related pollutants within rural communities. Using different methods, the following studies found significant differences in pollutant concentrations based on proximity to FAP. Schinasi et al. found significantly elevated hydrogen sulfide concentrations in communities within 1.2 miles from FAP compared to communities not impacted by FAP (Schinasi, 2011). Using passive samplers, Wilson and Serre collected weekly ammonia measurements in community sites and found an increasing concentration gradient based on proximity to FAP facility (Wilson, 2007). Another study near dairy facilities found significantly increased concentrations of ammonia, endotoxin and cow allergen in homes up to three miles from the nearest FAP facility as compared to those further away (Williams, 2011). These studies demonstrate the far reaching spatial extent of pollutants from FAP facilities.

Odors associated with air emissions have been shown to interfere with daily activities, quality of life, social gatherings, property values, and community cohesion (Heederik 2007, Donham 2007, Wing 2000, Horton 2009, Van Kersen 2020). Research also suggests that these odors can contribute to stress and elevated systolic blood pressure (Horton 2009, Wing 2013). Additionally, in some regions, FAP operations are disproportionately sited in under-resourced and systematically marginalized communities, creating environmental justice concerns (Lenhardt 2013, Son 2021, Lewis, 2023).

Given the current policies that exempt many FAP operations from emissions reporting and other regulations (Smith 2013), adjacent communities currently do not have access to information on FAP related pollutants that are relevant to their health.

## **#2-Emissions Estimating Methodologies**

We encourage the EPA to seek public input on its latest effort to establish emissions estimating methodologies (EEMs). The earlier attempt at development of EEMs was criticized by EPA's Science Advisory Board (US EPA SAB 2017), which deemed the NAEMS-based approaches problematic. The EPA NAEMS website indicates that new efforts are underway to develop selected EEMs; we encourage the EPA to seek SAB review to assess whether these revised approaches are adequately rigorous and useful in developing confident estimates of emissions from animal agriculture. We recognize, however, that such an evaluation process will take time, and encourage the EPA to make the best possible use of existing methodologies to initiate development of estimates while refinements are made to estimation approaches.

Also, emissions from animal agricultural waste management activities (such as land application of solid waste, spraying of liquid waste on agricultural fields, and manure transportation) are important contributors to airborne emissions and are not included in current estimation methodologies or reporting requirements. There are also other spatial-temporal, and facility process variables that can affect emissions and their fate and transport leading to potential exposures. These factors make it important to get better

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estimates of the spatial and temporal extent of the emissions associated with the entire FAP system. Exclusion of these processes will lead to underestimates of animal agriculture's contributions to rural pollution.

It is critical to recognize that reporting at the facility level, rather than consideration of emissions over space and across facilities, will not capture the cumulative burden faced by communities as a result of the spatial clustering of these farms. While a single farm may estimate air pollutant releases at levels lower than reporting thresholds or in quantities less than levels of concern, it is possible that numerous farms in close proximity may collectively compromise air quality and create exposure and health risks for surrounding communities.

### **#36- Benefits- Environmental Justice**

There are substantial environmental justice concerns for communities in close proximity to FAP, though existing environmental justice tools at EPA do not include information relevant to these exposures. For example, EPA EJSCREEN does not include FAP contributions in their environmental health and justice indices. In 2008, the Government Accountability Office (GAO) recommended that the EPA complete an inventory of permitted CAFOs (GAO 2008). Currently, there is still no national database of these types of farms, or the potential exposures and risks.

To adequately understand the true exposure at the community level and enhance community right-to-know, fence-line emissions studies are needed.

### **#37-Indirect Benefits**

A future rule bolstering EPCRA reporting by animal production sites would benefit communities by creating access to health-relevant exposure information and initiating greater involvement in local pollution management and FAP waste management practices. Such a rule could also empower injusticed communities to spur action using evidence about their environmental exposures and community stressors..

### **#44-RQ Adjustment- General**

Considering only estimated individual facility inputs using animal number emission factors of these continuously produced HAP sources does not capture the variability and more magnified (cumulative) effects of the numerous pollutants associated with FAP. Thus, adjusting RQs to reduce the reporting burden on small farms may prevent adequate protection to local communities based on the clustering and concentration of these facilities in geographic areas. This local concentration is common resulting in increased local and regional emissions also increasing risks to communities in areas with multiple facilities. Limiting reporting to individual FAP facilities dilutes and may miss risks to community from multiple facilities and density of operations.

Additionally, RQs are based on intrinsic properties of the substance and airshed burden, not on estimated human exposures or health risks (US EPA 1985), which limits the efficacy of

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EPCRA for informing exposed communities about hazardous releases. However, in some cases EPCRA may be the only health-related protection communities have related to FAP exposures.

#### **#46-National Report based on USDA or State Data**

It is encouraging that there will be a NAEMS-based emissions calculation portal coming online in the near future, however it is widely understood that the NAEMS emissions data is of limited rigor and reliability. (Copeland 2014, USEPA 2017) The NAEMS data are based on a limited number of facilities and were collected nearly two decades ago— which may not be relevant to FAP processes today. While using the NAEMS data are an acceptable start, the EPA should establish a system for estimating emissions using independently determined emissions factors, manure management, land application, sprayfield and wider FAP systemwide parameters. We agree with GAO’s 2008 and EPA Science Advisory Board recommendations that EPA should develop a more sophisticated process-based model that takes into account implications of all emission sources at an animal feeding operation (GAO 2008, USEPA SAB 2013). More data are needed to rigorously characterize emissions and exposures. Further, emissions data and pertinent spatial/temporal information should also be publicly available.

#### **Conclusion**

We encourage you to proceed with a rulemaking that would 1) improve public access to data about the emissions of airborne hazards from animal production sites and 2) require timely reporting to communities on air emissions and animal waste management from animal production sites.

We believe it is important for EPA to consider the comments we provided above, but the inability to address all such concerns should not prevent the development and adoption of emissions rules that the EPA considers feasible now.

We look forward to reviewing and commenting on any upcoming EPA proposed rule. Thank you for considering our comments.

Sincerely,

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