CENTER for BIOLOGICAL DIVERSITY Because life is good.

June 28, 2024

Via certified mail and e-mail
Michael Regan, Administrator
U.S. Environmental Protection Agency
Office of the Administrator, Mail Code 1101A
1200 Pennsylvania Avenue NW
Washington, DC 20460
regan.michael@epa.gov

RE: Notice of Intent to Sue for Unreasonable Delay in Performing Nondiscretionary Duties to Establish Emission Factors for Animal Feeding Operations under Section 130 of the Clean Air Act

Dear Administrator Regan:

The Center for Biological Diversity, Animal Legal Defense Fund, Center for Food Safety, Environmental Integrity Project, Food & Water Watch, and Iowa Citizens for Community Improvement (collectively "Conservation Groups") hereby provide notice of our intent to commence a civil action against the U.S. Environmental Protection Agency ("EPA" or "Agency") for failure to perform the nondiscretionary duties of Section 130 of the Clean Air Act, 42 U.S.C. § 7430, which requires EPA to establish methods—emission factors—for estimating the quantity of emissions of volatile organic compounds ("VOCs") and oxides of nitrogen ("NOx") from animal feeding operations ("AFOs").

EPA has had more than 30 years since the passage of the 1990 Clean Air Act Amendments, when Congress enacted Section 130, to prepare methods to estimate VOC and NOx emissions from AFOs but has failed to do so. VOC and NOx pollution from AFOs are significant threats to public health and the environment, and the timely generation of VOC and NOx emissions factors is crucial to EPA's ability to implement the law in a manner that is protective of public health and the environment. Indeed, livestock manure is estimated to emit over 215,000 tons of VOCs per year, as well as approximately 5 percent of U.S. emissions of nitrous oxide, an oxide of nitrogen with hundreds of times more warming potential than carbon dioxide. Failing to address these emissions undermines the Clean Air Act's purpose of "protect[ing] and enhanc[ing] the quality of the Nation's air resources so as to promote the public health and welfare." 42 U.S.C. § 7401(b)(1). As reflected through EPA's non-discretionary Section 130 obligations, failure to establish these emissions estimates has deprived the public of the protections provided through this fundamental Clean Air Act pollution control tool.

This letter serves as notice of Conservation Groups' intent to file suit against EPA under the Clean Air Act for unreasonable delay in performing these nondiscretionary duties and seeks to compel EPA to prepare these emission factors for AFOs. Conservation Groups intend to

commence suit in federal district court any time after 180 days from the postmarked date of this notice unless this legal violation is resolved prior to the end of the noticing period. *Id.* §§ 7604(a), (b)(1)(A); 40 C.F.R. § 54.2(d).

I. AFOs are Sources of Volatile Organic Compounds and Oxides of Nitrogen Subject to Section 130 of the Clean Air Act

The Clean Air Act requires that:

> Within 6 months after November 15, 1990, and at least every 3 years thereafter, the Administrator shall review and, if necessary, revise, the methods ("emission factors") used for purposes of this chapter to estimate the quantity of emissions of . . . volatile organic compounds[] and oxides of nitrogen *from sources of such air pollutants (including area sources and mobile sources)*. In addition, the Administrator shall establish emission factors for sources for which no such methods have previously been established by the Administrator.

42 U.S.C. § 7430 (emphasis added).

Air pollutants—including VOCs and NOx —are generally emitted from three major systems on an AFO[1]: (1) the animal confinement facility, (2) the manure collection and storage system, and (3) the land application system for animal wastes. [2] Within these systems, emissions are controlled by and released from various technologies, many of which function as sources themselves.[3]

AFOs are significant sources of VOCs. EPA defines VOCs as "any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates and ammonium carbonate, which participates in atmospheric photochemical reactions," except those designated by EPA as having "negligible photochemical reactivity." 50 C.F.R. § 51.100(s). AFOs contain numerous significant VOC sources, including "animal eructation and exhalation, animal waste in animal pens, flushing lanes, lagoons, silage storage piles and silos, and feed mixtures in feed lanes and bunks."[4] The 2020 National Emissions Inventory estimates that over

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[1] For Clean Water Act purposes, EPA defines an AFO as "a lot or facility (other than an aquatic animal production facility)" where (i) "[a]nimals (other than aquatic animals) have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period," and (ii) "[c]rops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility." 40 C.F.R. § 122.23(b)(1). "Two or more AFOs under common ownership are considered to be a single AFO for the purposes of determining the number of animals at an operation, if they adjoin each other or if they use a common area or system for the disposal of wastes." *Id.* § 122.23(b)(2).

[2] EPA, Emissions from Animal Feeding Operations (Draft) 2-1–2 (Aug. 15, 2001), https://www3.epa.gov/ttnchie1/ap42/ch09/draft/draftanimalfeed.pdf.

[3] *See id.* at 9-3–7.

[4] EPA, Development of VOC Emissions Estimating Methodologies for Animal Feeding Operations (Draft) 1 (Nov. 2022), https://www.epa.gov/system/files/documents/2022-11/DRAFT_%20VOC_Report_2022.11.pdf; Bin Yuan et al., *Emissions of volatile organic compounds (VOCs) from concentrated animal feeding operations (CAFOs): chemical compositions and separation of sources*, 17 ATMOS. CHEM. PHYS. 4,946, 4,946–47 (Apr. 18, 2017).

215,000 tons of VOCs are emitted per year from livestock manure alone.[5] While this is a diverse class of chemicals, exposure to VOCs is known to cause irritation to the eyes, nose, and throat; difficulty breathing; nausea; damage to the central nervous system and other organs; and cancer.[6] In the atmosphere, VOCs also react with other chemicals to produce health-harmful criteria pollutants like ground-level ozone and fine particulate matter.[7]

AFOs are also significant sources of several nitrogen oxides. Oxides of nitrogen are any of seven binary combinations of oxygen and nitrogen: nitric oxide (NO), nitrogen dioxide (NO_2), nitrous oxide (N_2O), dinitrogen dioxide (N_2O_2), dinitrogen trioxide (N_2O_3), dinitrogen tetroxide (N_2O_4), and dinitrogen pentoxide (N_2O_5).[8] AFOs emit oxides of nitrogen, including NO and N_2O, via the microbial nitrification and denitrification of manure.[9] AFOs also cause nitrogen dioxide pollution because NO and NO_2 "are rapidly interconverted in the atmosphere."[10] The National Academy of Sciences evaluated these compounds as AFO emissions of potentially significant global, national, and regional concern in 2003.[11] N_2O is a potent greenhouse gas with over 300 times the warming potential of carbon dioxide,[12] and estimates suggest that manure management accounts for approximately 5 percent of U.S. N_2O emissions.[13] These AFO emissions "add significantly to the global burden of greenhouse gases."[14] According to EPA, short-term exposure to NO_2 can also aggravate respiratory disease, while long-term exposure can cause respiratory disease to develop, especially in children.[15] Furthermore, nitrogen oxides react with other compounds in the atmosphere to produce ground-level ozone and fine particulate matter, both of which are harmful to human health.[16]

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[5] EPA, 2017 vs 2020 NEI (July 31, 2023), https://storymaps.arcgis.com/stories/d7d730f974c6474190b142a49ae8d3bd#ref-n-goXjv8.

[6] American Lung Association, Volatile Organic Compounds (updated Apr. 11, 2024), https://www.lung.org/clean-air/indoor-air/indoor-air-pollutants/volatile-organic-compounds.

[7] EPA, *Implications of Volatile Chemical Products (VCPs) on Ozone and Particulate Matter in Urban Atmospheres* (Mar. 16, 2020), https://www.epa.gov/sites/default/files/2021-03/documents/epa_ace_research_webinar_series-slides_16mar21_3.pdf.

[8] EPA CATC, *Technical Bulletin: Nitrogen Oxides (NO_X), Why and How They are Controlled* 2 (Nov. 1999), https://www3.epa.gov/ttncatc1/dir1/fnoxdoc.pdf; *see* MERRIAM-WEBSTER, Oxide (accessed June 28, 2024), https://www.merriam-webster.com/dictionary/oxide (defining "oxide" as "a binary compound of oxygen with a more electropositive element or group.").

[9] NRC, *Air Emissions from Animal Feeding Operations: Current Knowledge, Future Needs* 43–44 (2003), https://www3.epa.gov/ttnchie1/ap42/ch09/related/nrcanimalfeed_dec2002.pdf; *see* Michael A. Holly et al., *Greenhouse Gas and Ammonia Emissions from Digested and Separated Dairy Manure During Storage and After Land Application*, 239 AGRIC, ECOSYSTEMS & ENV'T 410, 411 (Feb. 2017), https://www.sciencedirect.com/science/article/pii/S0167880917300701.

[10] NRC, Air Emissions from Animal Feeding Operations at 44, *supra* note 9.

[11] *Id.* at 4.

[12] United Nations Framework Convention on Climate Change, Global Warming Potentials (IPCC Second Assessment Report) (accessed May 8, 2024), https://unfccc.int/process/transparency-and-reporting/greenhouse-gas-data/greenhouse-gas-data-unfccc/global-warming-potentials.

[13] Congressional Research Service, Air Quality Issues and Animal Agriculture: A Primer 3–4 (updated June 6, 2016), https://crsreports.congress.gov/product/pdf/RL/RL32948/38.

[14] NRC, Air Emissions from Animal Feeding Operations 17, *supra* note 9.

[15] EPA, Primary NAAQS for NO_2, 75 Fed. Reg. 6,474, 6,479–80 (Feb. 9, 2010).

[16] ADEQ, Nitrogen Oxide (NOx) Pollution (accessed Feb. 27, 2024), https://azdeq.gov/nitrogen-oxide-nox-pollution.

II. EPA has Not Fulfilled its Nondiscretionary Duty to Establish Emission Factors for VOCs and NOx Pollution from AFOs

EPA must "establish emission factors for sources for which no such methods have previously been established by the Administrator." 42 U.S.C. § 7430. EPA has failed to perform this nondiscretionary duty to establish emission factors for estimating VOCs or NOx from AFOs. While EPA has indicated for decades its intention to prepare draft methods for estimating air emissions from AFOs, those proposed methods have never been finalized despite its statutory obligation.[17] In failing to develop factors for VOC and NOx emissions from AFOs, EPA is enabling an underestimation of pollution emissions, or lack of estimation altogether, from the AFO industry that is resulting in the public being exposed to more air pollution than the law allows. Furthermore, because AFOs are disproportionately located in low-income communities and communities of color,[18] these populations disproportionately bear the burdens of AFO air emissions[19]—a plain example of the kind of environmental injustice that the Biden Administration has pledged to dismantle.[20]

EPA's persistent delay in establishing emission factors for AFOs undermines sound policy and public health. Industries use emissions factors to report air pollution to EPA and state regulatory agencies. EPA and state agencies rely on this data to develop national, regional, state, and local emissions inventories. These emissions inventories are the primary tool EPA and state agencies use to develop emissions control strategies and make air quality management and permitting decisions. Emissions factors can also be used to calculate pollutant loads, which aid in the development of federally mandated air quality plans that are designed to reduce smog and other pollutants and assist EPA and state agencies in determining compliance with the Clean Air Act's pollution limitations. And yet, despite having had more than 30 years since the passage of the 1990 Clean Air Act Amendments to prepare methods to estimate VOC and NOx emissions from AFOs, EPA has failed to produce these essential pollution estimating factors.

The Farm Emissions Model that EPA currently relies on for estimating VOC emissions from livestock manure for the National Emissions Inventory is not an adequate or lawfully appropriate substitute for the emissions factors required by Section 130 of the Clean Air Act. The Farm Emissions Model is not a VOC emission factor for AFOs because: (1) it calculates emissions on a per-county instead of per-source basis, and (2) manure only accounts for a fraction of VOC air emissions on an AFO.[21] Even further, the model fails to estimate emissions of NOx altogether.[22]

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[17] *See* EPA, Emissions from AFOs Draft 2-1–2, *supra* note 2; EPA, Draft Air Emissions Estimating Methodologies for Animal Feeding Operations (updated Oct. 30, 2023), https://www.epa.gov/afos-air/draft-air-emissions-estimating-methodologies-animal-feeding-operations.

[18] *See* Kelley J. Donham et al., *Community Health and Socioeconomic Issues Surrounding Concentrated Animal Feeding Operations*, 115 ENV'T HEALTH PERSP. 317, 318 (2007).

[19] Carrie Hribar, *Understanding Concentrated Animal Feeding Operations and Their Impact on Communities*, NAT'L ASS'N LOC. BDS. HEALTH 5–7 (2010).

[20] Exec. Order 14,096, 88 Fed. Reg. 25,251, 25,258 (Apr. 26, 2023).

[21] *See* EPA, Development of VOC Emissions Estimating Methodologies for AFOs (Draft) 1, *supra* note 4.

[22] EPA, 2020 National Emissions Inventory Technical Support Document: Agriculture—Livestock Waste (March 2023), https://www.epa.gov/system/files/documents/2023-03/NEI2020_TSD_Section10_AgLivestockWaste.pdf.

Additionally, EPA's prior efforts to establish VOC emission factors for certain AFOs through the 2005 Air Compliance Agreement and associated National Air Emissions Monitoring Study ("NAEMS") have not only repeatedly stalled—emission factors were supposed to have been finished by 2009[23]—but suffer from critical study design and data flaws. Indeed, despite shielding nearly *14,000* AFOs from EPA Clean Air Act enforcement and liability, EPA collected data from only *26* operations through the NAEMS study.[24] As a result, almost 20 years after initiating this process, EPA remains unable to prove its ability through NAEMS to implement a durable, process-based emissions estimation approach.[25] Even further, EPA does not appear to have collected data on NOx emissions from AFOs through NAEMS, and there is no indication that EPA has even begun preparing an emission estimation method for NOx emissions from AFOs.

While EPA continues to flounder under NAEMS, State agencies are improperly citing EPA's failure to finalize NAEMS-based emissions estimating methodologies as a justification for their own decisions not to timely address AFO air emissions under the Clean Air Act.[26] This is especially problematic given not only the non-discretionary nature of Section 130, but also that the "primary goal" of the Clean Air Act "is to encourage or promote reasonable Federal, state, and local governmental actions . . . *for pollution prevention*."[27] As a result, EPA's inaction is allowing continued, unregulated emissions of air pollution from AFOs that inflict irreversible health effects on humans, deterioration of airsheds and environmental health, and contribute to the worsening climate crisis.

Based on the information available to Conservation Groups, EPA has not established VOC or NOx emission factors for AFOs as required by the Clean Air Act. EPA must, therefore, promptly establish these emission factors. 42 U.S.C. § 7430. The Agency's failure to do so constitutes agency action unreasonably delayed and compellable under Section 304(a).

III. Groups giving notice

As required by 40 C.F.R. § 54.3, the names, addresses, and telephone numbers of the Conservation Groups giving notice are:

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[23] EPA Office of Inspector General, *Eleven Years After Agreement, EPA Has Not Developed Reliable Emission Estimation Methods to Determine Whether Animal Feeding Operations Comply with Clean Air Act and Other Statute* 5 (Sep. 19, 2017), https://www.epa.gov/sites/default/files/2017-09/documents/_epaoig_20170919-17-p-0396.pdf.

[24] EPA, Emission Estimation Methods for Animal Feeding Operations – Draft 3-2 (Aug. 2021), https://www.epa.gov/system/files/documents/2021-08/emission_estimation_methods_for_animal_feeding_operations_overview.pdf.

[25] *Id.* at 3-1, 5.

[26] *See, e.g.,* Oregon Department of Environmental Quality, Recommendation re: Petition to Promulgate Dairy Air Emissions Regulatory Program 2 (Nov. 9, 2022), https://www.oregon.gov/deq/EQCdocs/110922_A_PetitionAction.pdf ("DEQ has identified areas in the proposed program where additional data needs to be collected and emissions estimation methods finalized before a program would be practically developed and implemented. . . . DEQ recommends that implementation of a dairy air program be postponed until EPA finalizes the National Air Emissions Monitoring Study (NAEMS) and additional resources are provided to DEQ and ODA to design and implement such a program.").

[27] 42 U.S.C. § 7401(c).

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Conservation Groups are represented on this notice letter by attorneys Hannah Connor, Ryan Maher, and Benjamin Rankin with the Center for Biological Diversity. Their contact information is provided in the signature block below.

IV. Conclusion

AFOs are significant sources of air pollution in the United States, but methods to estimate emissions from these facilities have yet to be developed by EPA. The Agency is subject to a statutory mandate to establish emission factors to estimate VOC and NOx pollution from AFOs. For more than thirty years, EPA has failed to establish these emission factors. Conservation Groups intend to sue EPA over its unreasonable delay to compel the Agency to comply with its nondiscretionary duties to establish VOC and NOx emission factors for AFOs.

If you have any questions regarding the allegation in this notice or would like to discuss resolution of this matter, please contact Benjamin Rankin using the information provided below.

Thank you for your attention to this matter.

Respectfully submitted,

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