

**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA**

THE HUMANE SOCIETY)
OF THE UNITED STATES)
2100 L Street NW)
Washington, DC 20037,)
)
ASSOCIATION OF IRRITATED RESIDENTS)
29389 Fresno Ave)
Shafter, CA 93263,)
)
ENVIRONMENTAL INTEGRITY PROJECT) Civil Action No. 15-cv-0141
1000 Vermont Avenue NW, Suite 1100)
Washington, DC 20005,) COMPLAINT FOR DECLARATORY
) AND INJUNCTIVE RELIEF
FRIENDS OF THE EARTH)
1100 15th Street NW, 11th Floor) Administrative Procedure Act, 5 U.S.C. § 551
Washington, DC 20005,)
)
SIERRA CLUB)
85 Second Street, 2nd Floor)
San Francisco, CA 94105,)
)
<i>Plaintiffs,</i>)
)
v.)
)
REGINA McCARTHY, in her official capacity,)
ADMINISTRATOR, UNITED STATES)
ENVIRONMENTAL PROTECTION AGENCY,)
and UNITED STATES ENVIRONMENTAL)
PROTECTION AGENCY)
1200 Pennsylvania Ave. N.W.)
Washington, D.C. 20460,)
)
Defendants.)

INTRODUCTION

1. The Humane Society of the United States (HSUS), Association of Irritated Residents (AIR), Environmental Integrity Project (EIP), Friends of the Earth (FoE), and Sierra Club (collectively Plaintiffs) bring this action for declaratory and injunctive relief pursuant to the Administrative Procedure Act (APA), 5 U.S.C. § 551 *et seq.* The action seeks to compel the United States Environmental Protection

Agency (EPA or Agency) to provide a response to Plaintiffs' 2009 Petition for rulemaking, which requests that the Agency regulate concentrated animal feeding operations (CAFOs) as a source of air pollution under the federal Clean Air Act (CAA), 42 U.S.C. § 7401 *et seq.*¹ EPA has unreasonably delayed in responding to Plaintiffs' 2009 Petition, and this delay has permitted preventable harms to public health and the environment to persist.

2. The standard method for domestically housing and raising animals for food and other materials has transformed from a traditional, pasture-based agricultural model to that in which more animals, sometimes hundreds of thousands or even millions, are raised in fewer, but exponentially larger industrial animal production facilities known as CAFOs. *See* The Humane Soc'y of the U.S., et al., Petition for Rulemaking, 13-14 (Sept. 21, 2009) [hereinafter Petition]. These animals are typically housed in stationary, warehouse-like intensive confinement buildings or feedlots until they are sent to slaughter or to another similarly structured industrial animal production facility. *Id.* at 12-13.

3. Concentrating and feeding large populations of animals in one location generates enormous quantities of biological waste products, including feces and urine, as well as a variety of dangerous air pollutants, including ammonia, hydrogen sulfide, methane, nitrous oxide, volatile organic compounds, and particulate matter – emissions of which contribute to climate change, threaten public health and safety, and harm the environment. Petition at 13, 17. For that reason, CAFOs are one of the largest sources of air pollution in the country.

4. The U.S. Centers for Disease Control and Prevention consider airborne emissions from CAFOs to “constitute a public health problem.” Petition at 38. Emissions from CAFOs cause significant health problems such as respiratory illnesses, including bronchitis, pulmonary disease, asthma, and respiratory distress syndrome; irritation to the eyes, nose, and throat; neuropsychological abnormalities, including anxiety and depression; memory loss; heart disease; and can lead to death. *See* Petition at 38-39. These effects are amplified in vulnerable populations such as children and the elderly.

¹ The Petition was revised in 2010 solely for the purpose of adding the Sierra Club as a Petitioner.

5. CAFOs degrade the environment. Their emissions exacerbate climate change; impair air quality; lead to the formation of haze, fine particulate matter, and ozone; and contribute to the impairment of land and water resources, causing “dead zones” in waterways and acidification of soil and waters. *See* Petition at 10, 17, 38-40.

6. CAFO air pollution is nationally significant, noxious, and dangerous to public health and welfare, wildlife, and the environment. Plaintiffs’ 2009 Petition asks the Agency to address air pollution from CAFOs by (1) using its authority to list CAFOs as a category of sources under the CAA; (2) promulgating standards of performance for new CAFOs; and (3) prescribing regulations for state performance standards for existing CAFOs. *See* 42 U.S.C. § 7411. Plaintiffs are statutorily entitled to a response to their Petition within a reasonable period of time. *See* 5 U.S.C. §§ 555 (b), 706; Petition at 1. That time has passed.

7. The Agency’s more than five-year delay in responding to Plaintiffs’ Petition constitutes an unreasonable delay and a failure to act in violation of the APA. Accordingly, Plaintiffs respectfully request that the Court declare EPA’s failure to respond in a decisive and timely manner to the 2009 Petition to be a violation of the APA; order EPA to make a final decision on the 2009 Petition within 90 days; and retain jurisdiction of this matter until EPA has fulfilled its legal obligations, as set forth in this complaint.

JURISDICTION AND VENUE

8. This Court has jurisdiction over this action pursuant to the APA, 5 U.S.C. § 702, as well as 28 U.S.C. § 1331 (federal question) and 28 U.S.C. § 1346 (United States as Defendant).

9. The relief requested is authorized pursuant to 5 U.S.C. § 706(1) and 28 U.S.C. §§ 2201-02 (declaratory relief). An actual, justiciable controversy exists between Plaintiffs and EPA, within the meaning of 28 U.S.C. § 2201 (declaratory judgments).

10. Venue properly vests in this Court pursuant to 28 U.S.C. § 1391(e) because one or more of the Plaintiffs and the Defendant reside in the District of Columbia, and a substantial part of the events or omissions giving rise to this action occurred or will occur in this district.

PARTIES

11. Plaintiff HSUS is a nonprofit organization headquartered in the District of Columbia and incorporated in the State of Delaware. HSUS is the largest animal protection organization in the United States, representing millions of members and constituents. HSUS has members throughout the United States, including in Iowa, Minnesota, and North Carolina, who suffer harm due to CAFO emissions. Since its establishment in 1954, HSUS has advocated against the inhumane treatment of animals raised for food. To that end, HSUS actively advocates for better laws to protect animals and the environment; conducts mission-specific campaigns; and advocates against practices that injure, harass or otherwise harm animals, including farm animals and wildlife. Specifically, with its mission to create a humane and sustainable world for all animals—including people and communities—HSUS endeavors to ensure that its members are aware of and not injured by hazardous substances, including air pollutants, released by CAFOs. HSUS has also actively campaigned to regulate air pollutants being discharged by CAFOs through efforts with EPA, Congress, and the Courts. HSUS brings this action on behalf of itself and its members.

12. Plaintiff AIR is an unincorporated association with members residing in Kings, Tulare, Kern, Fresno, and Stanislaus counties, all of which are located in the San Joaquin Valley air basin in California. The San Joaquin Valley air basin fails to meet CAA air quality standards for ozone and fine particulate matter. Emissions of ammonia and volatile organic compounds from CAFOs contribute significantly to the air basin's nonattainment condition. AIR's organizational purpose is to advocate for air quality and environmental health in the San Joaquin Valley. AIR's interest in this case also involves CAFOs' greenhouse gas emissions, which AIR has advocated for regulation of before the California Air

Resources Board. The health and environmental interests of AIR and its members are impacted by the pollution created by industrial animal confinement operations.

13. Plaintiff EIP is a national nonprofit organization headquartered in Washington, D.C. EIP is dedicated to advocating for more effective enforcement of environmental laws, including the CAA. Since 2002, EIP has worked to improve federal and state regulation of CAFOs and to improve air and water quality in areas significantly impacted by these facilities' pollution, focusing in the Upper Midwest and the Mid-Atlantic. EIP advocates for application of clean air laws to industrial animal confinement operations nationwide, because these operations endanger public health and welfare with their unrestricted pollution emissions. EIP also works to gather and analyze pollution data and provide this information to the public, and has been actively engaged in EPA's ongoing process, now stalled, to develop accurate tools to estimate CAFO air pollution. EIP has a strong organizational interest in strengthening the CAA's regulation of CAFOs, including the regulation of their ammonia pollution, and is injured by EPA's failure to respond to the 2009 Petition.

14. Plaintiff FoE is an environmental advocacy organization founded in 1969 and incorporated in the District of Columbia. FoE has offices in Washington, D.C. and Berkeley, California, with more than 350,000 members and activists in all 50 states across the nation. FoE is part of Friends of the Earth International, a federation of grassroots groups working in 75 countries on today's most urgent environmental and social issues. FoE's mission is to defend the environment and champion a healthy and just world. To this end, one of FoE's key programs is the promotion of policies and actions that prevent air pollution and that minimize the negative impacts of pollution on human health. FoE relies on sound science and uses the law to create and advocate for innovative strategies to conserve natural resources and protect public health and the environment. A core element of FoE's mission is work to reduce air and water pollution throughout the United States. The health and environmental interests of FoE, and its members, are impacted by the pollution created by concentrated animal feeding operations.

15. Plaintiff Sierra Club is a nonprofit organization headquartered in San Francisco, California, with an office in Washington, D.C. Sierra Club consists of approximately 600,000 members

dedicated to exploring, enjoying, and protecting the wild places of the earth; to practicing and promoting the responsible use of the earth's ecosystems and resources; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives. Sierra Club's concerns encompass the regulation of CAFOs and their environmental impacts. Sierra Club's particular interest in this case and the issues with which the case concerns stem from Sierra Club's goals to protect the health of the people of the earth and to maintain a healthy and diverse ecosystem through the use of sustainable methods of food production.

16. Plaintiffs have standing to bring this action on behalf of themselves and their members. EPA's failure to respond to Plaintiffs' Petition has deprived Plaintiffs of a lawful response to the Petition under the APA, and of their right to petition the government, as guaranteed by the First Amendment to the United States Constitution. Further, Plaintiffs' members and organizational purposes have been and will continue to be harmed by EPA's failure to act on the Petition.

17. Specifically, EPA's failure to act on the Petition negatively affects the ability of Plaintiffs to fulfill their organizational objectives, which include protecting public health and welfare, wildlife, and the environment, as well as preventing animal cruelty. Plaintiffs, individually and cooperatively, have worked extensively to address and eliminate degradation to the environment and harms to human and animal health and welfare that result from the under-regulation and oversight of air pollution from CAFOs. Plaintiffs have devoted significant staff time and resources towards that end, including the time and resources related to Plaintiffs efforts to see EPA respond to the 2009 Petition, and later efforts related to a 2011 Petition to EPA requesting the Agency regulate ammonia, a CAFO air pollutant, as a "criteria pollutant" under the CAA. But for EPA's unlawful actions in failing to address air pollution from CAFOs, pollution that directly affects Plaintiffs' members' interests, Plaintiffs would not have to spend their resources on seeking regulation of these operations under the CAA or Agency action in responding to their Petition, and could direct those resources to other priorities.

18. Plaintiffs also have standing to bring this action on behalf of their members. Plaintiffs' members' health and welfare, and the health and welfare of their environment have been harmed and will

continue to be harmed because of EPA's failure to act on Plaintiffs' Petition and failure to reasonably address air pollution from CAFOs. Plaintiffs have members across the United States who live near CAFOs. These members have experienced physical harm due to CAFO emissions, including respiratory issues such as asthma; burning and irritation of the eyes, nose, and throat; digestive trouble; nausea; severe headaches; and other chronic health problems. These members are also forced to stay indoors, such that their enjoyment and use of their property is significantly reduced, and have experienced a decrease in the value of their property for these reasons. These environmental, health, aesthetic, economic, and recreational interests of Plaintiffs' members will continue to be adversely affected until EPA remedies its failure by acting on the Petition.

19. The relief requested would redress these harms by ordering a response from EPA to the 2009 Petition. A response to the 2009 Petition would either fulfill the Agency's statutory duty to regulate air pollution from CAFOs under the CAA, thus alleviating Plaintiffs' members' injuries from CAFO emissions, or provide Plaintiffs with an avenue to challenge the denial of the Petition.

20. Defendant EPA is an "agency" for the purpose of the APA. *See* 5 U.S.C. §§ 551(1), 701 (b)(1). EPA, as an agency, is tasked with implementing the federal CAA and regulating air pollution to protect the nation's public health and welfare.

21. Defendant Regina McCarthy is included in this lawsuit in her official capacity as the Administrator of EPA. As EPA Administrator, Ms. McCarthy is responsible for EPA's actions to address the Petition.

22. Ms. McCarthy and EPA are collectively referred to herein as EPA, the Agency, or Defendant.

LEGAL FRAMEWORK

I. The Clean Air Act

23. Congress designed the CAA "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population," 42

U.S.C. § 7401(b)(1), and to “encourage or otherwise promote reasonable Federal, State, and local governmental actions . . . for pollution prevention.” *Id.* § 7401(c). Administratively, EPA is charged with implementing the CAA, and is the national leader for the federal air programs and the delegating authority for state programs.

24. To effectuate the goals of protecting and enhancing air quality and regulating air pollution, section 111 the CAA requires EPA to list and, thereafter, revise, “a list of categories of stationary sources” of air pollution. 42 U.S.C. § 7411(b). A category of sources meets the standard for listing under section 111 of the CAA when it “causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare.” *Id.* § 7411(b)(1)(A).

25. The CAA defines “stationary source” as both “any building, structure, facility, or installation which emits or may emit any air pollutant,” 42 U.S.C. § 7411(a)(3), and “generally any source of an air pollutant,” *id.* § 7602(z). The Act broadly defines “air pollutant” as “any air pollution agent or combination of such agents, including any physical, chemical, biological . . . substance or matter which is emitted into or otherwise enters the ambient air. Such term includes any precursors to the formation of any air pollutant.” *Id.* § 7602(g). EPA designates the “ambient air” as “that portion of the atmosphere, external to buildings, to which the general public has access.” 40 C.F.R. § 50.1(e).

26. In the context of air pollution, “precursor” means that the specific air pollutant is not directly emitted but is formed when gases or other air pollutants react in the atmosphere to form a separate, secondary air pollutant. For example, ambient ammonia is a precursor that can react with, among other compounds, nitrogen oxides and sulfur dioxide in the air to form a dangerous pollutant, which is classified as fine particulate matter.² Nitrogen oxide and volatile organic compounds (VOCs) are also precursors when they react with in heat and sunlight to produce the pollutant ozone.

² Particulate matter is a mixture of solid and liquid particles found in the air that is categorized by its aerodynamic diameter. EPA, *PM Research* (Apr. 2, 2013), <http://www.epa.gov/airscience/air-particulatematter.htm> (last visited Jan. 27, 2015). PM with an aerodynamic diameter that is less than or equal to 2.5 microns in size is categorized as “fine,” which is of particular concern to EPA because it can be inhaled deep into the lung. *Id.*

27. One of the CAA's primary pollutant reduction programs is the "criteria" pollutant program, under which EPA regulates common air pollutants by establishing National Ambient Air Quality Standards (NAAQS) to protect public health and welfare by limiting the concentration of criteria pollutants in the ambient air. *See* 42 U.S.C. §§ 7408, 7409. EPA regulates six pollutants under this program: particulate matter (PM) 10 microns or less in diameter (PM₁₀ and the smaller PM_{2.5} fraction), carbon monoxide, nitrogen oxides, sulfur dioxides, ground-level ozone, and lead. Under Title I of the CAA, states are responsible for developing State Implementation Plans (SIPs) to achieve compliance with the NAAQS by the applicable deadline. The CAA utilizes, in part, a stationary source permitting program called New Source Review to ensure that geographic areas in a state can attain pollution reduction goals.

28. To determine whether a particular source category of air pollutants meets the endangerment standard, as is required by section 111, the Administrator takes into account that category's effect on public health and welfare. The Act explains that "[a]ll language referring to effects on welfare includes, but is not limited to, effects on soils, water, crops, vegetation, man-made materials, animals, wildlife, weather, visibility, and climate, damage to and deterioration of property, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being, whether caused by transformation, conversion, or combination with other air pollutants." 42 U.S.C. § 7602(h).

29. Once a category is listed as a source, EPA sets standards of performance for new sources in the newly listed category, 42 U.S.C. § 7411(b)(1)(B), and prescribes regulations for existing sources in that category, *id.* § 7411(d).

30. Performance standards under section 111 must "reflect[] the degree of emission limitation achievable through the application of the best system of emissions reductions which (taking into account the cost of achieving such reduction and any non-air quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated." 42 U.S.C. § 7411(a)(1).

II. The Administrative Procedure Act

31. Under the APA, agencies must “give an interested person the right to petition for the issuance, amendment, or repeal of a rule.” 5 U.S.C. § 553(e). A “rule” is “the whole or part of an agency statement of general or particular applicability and future effect designed to implement, interpret, or prescribe law or policy.” *Id.* § 551(4).

32. The APA requires that “[w]ith due regard for the convenience and necessity of the parties or their representatives and within a reasonable time, each agency shall proceed to conclude a matter presented to it.” 5 U.S.C. § 555(b). If an agency denies a petition in whole or in part, it must provide “[p]rompt notice” to the petitioner. *Id.* § 555(e).

33. The APA grants a right of judicial review to “[a] person suffering legal wrong because of agency action, or adversely affected or aggrieved by agency action.” 5 U.S.C. § 702. “Agency action” is defined to include the “failure to act.” *Id.* § 551(13).

34. Courts “shall compel agency action unlawfully withheld or unreasonably delayed,” 5 U.S.C. § 706(1), and “hold unlawful and set aside agency action, findings, and conclusions found to be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” *Id.* § 706(2)(A).

FACTUAL BACKGROUND

I. Aerial Pollution from CAFOs Endangers Public Health and Welfare

35. CAFOs confine thousands to millions of animals in a controlled and restricted living environment. Of the over 56,000 domestic hog facilities operating in 2007, 1,280 of them housed more than 5,000 pigs each, with 120 of those facilities housing greater than 50,000 pigs each or roughly 54 percent of hogs produced domestically that year. U.S. Dept. of Ag., *Farms, Land in Farms, and Livestock Operations: 2007 Summary*, 33 (2008). To function, these large, industrial facilities “congregate animals, feed, manure and urine, dead animals, and production operations on a small land area[, and f]eed is brought to the animals rather than the animals grazing or otherwise seeking feed in pastures, fields, or on rangeland.” Petition at 12-13.

36. Altogether, the United States Department of Agriculture (USDA) estimates that there are 450,000 animal feeding operations nationwide. Petition at 13. CAFOs are the largest type of feeding operation and have the biggest potential to pollute.³ EPA conservatively estimates that there are approximately 18,000 to 20,000 CAFOs nationwide. *See id.* Consistent with a CAFO's concentrated animal population, EPA estimates that CAFOs generate more than 500 million tons of manure nationally each year (or *three times* the amount of raw waste that humans produce annually). *Id.* at 27.

37. CAFO air pollution "constitute[s] a public health problem." Petition at 38. Specifically, CAFOs produce a variety of noxious air pollutants, including ammonia, hydrogen sulfide, methane, nitrous oxide, PM, and volatile organic compounds.⁴ *Id.* at 17. These pollutants are predominantly generated by the creation, collection, and decomposition of animal waste and gaseous byproducts, though they can originate from other areas of the CAFO, including the confinement facilities. *Id.* at 14-16.

38. The number of animals at an operation is generally proportional to the air pollution it emits; CAFOs emit more pollutants than traditional, small-scale farms because they confine animals and waste on a much larger scale, in a comparatively smaller space. Petition at 14. Indeed, CAFOs release the most anthropogenic⁵ methane and ammonia of any industry, at an estimated 9 million tons and 2.5 million tons, respectively, per year. *Id.* at 3, 29, 33.

39. Air pollution from CAFOs significantly harms humans, animals, and the environment. The release of aerial pollutants from CAFOs has been linked to climate change; the formation of haze, ozone, and fine particulate matter (PM_{2.5}); and contributions to land and water pollution. *See* Petition at

³ In this context, CAFO is a term of art defined under the federal Water Pollution Control Act, also referred to as the "Clean Water Act," as any lot or facility with no sustained crops or other vegetation where animals (other than aquatic animals) have been, are, or will be stabled or confined and fed or maintained for 45-days or more in any 12-month period, and where the facility either exceeds a certain threshold population (for example, the CAFO threshold population for a large swine operation is 2,500 hogs weighing over 55 pounds) and/or additional operational characteristics show that the facility is a significant contributor of pollutants to jurisdictional waters. 40 C.F.R. § 122.23(b). The CAA has no definition for such large, industrial animal production facilities.

⁴ As explained *infra*, VOCs are defined by EPA 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." 40 C.F.R. § 51.100(s).

⁵ Certain gases can be attributed to both natural and anthropogenic, or non-natural, origins. For example, methane naturally occurs from wetlands, termites, and the ocean; however, methane also has anthropogenic origins through human activities such as landfills, transportation, and the agriculture industry.

10, 17. Further, the release of these gases and particulates can negatively affect air quality, *id.* at 24, and precipitate a variety of human health problems, some which can be fatal, *id.* at 38-39. CAFO emissions can also reduce visibility, cause loss of biodiversity, harm crop and commercial forest production, and destroy wildlife habitat. *Id.* at 56. This pollution can lead to adverse impacts on community quality of life and enjoyment of property, and can result in economic consequences due to reduced work capacity, school absenteeism, exacerbation of asthma and other respiratory conditions, and decreases in the value of nearby real properties. *See id.* at 9-10, 40.

40. Many CAFOs are geographically clustered in certain regions and communities throughout the country, which intensifies these negative effects on public health and the environment. According to the U.S. Government Accountability Office's (GAO) estimates, five contiguous counties in North Carolina maintained more than 7.5 million hogs in 2002, mostly in industrial animal production systems that produced as much as 15.5 million tons of manure in that year. USDA, *Concentrated Animal Feeding Operations: EPA Needs More Information and a Clearly Defined Strategy to Protect Air and Water Quality from Pollutants of Concern*, GAO-08-944, 5, 21 (2008) [hereinafter GAO CAFO Report]. Those same five North Carolina counties also confined considerable chicken and turkey populations. *See generally* USDA, *2007 Census of Agriculture, North Carolina State and County Data*, Table 13 Poultry Inventory and Sales, 444-56 (2009). Since EPA does not currently have regulations in place to control air pollution from CAFOs, the people, communities, and animals in these counties are disproportionately exposed to the massive amount of pollution that results from this clustering of operations.⁶

41. The elderly, children, and individuals with preexisting impairments are especially susceptible to harms from CAFO emissions. For example, many children are harmed by CAFO air pollution while at school. Researchers studying the proximity of elementary schools in Iowa to CAFOs and the prevalence of asthma in students found that children in a school located one-half mile from a hog

⁶ Similarly, for example, two counties in the San Joaquin Valley of California were estimated in 2002 to maintain approximately 535,433 cows, which produced approximately 13.6 million tons of manure per year, and two counties in Arkansas maintained a combined broiler chicken population of 14,264,828 chickens, which produced more than 471,000 tons of manure that year. GAO CAFO Report at 22.

CAFO experienced a significantly higher rate of physician-diagnosed asthma than children in a schools located at farther distances from large-scale animal operations. Petition at 39; *see also* Sigurdur T. Sigurdarson and Joel N. Kline, *School Proximity to Concentrated Animal Feeding Operations and Prevalence of Asthma in Students*, 129 *Chest* 1, 1486-1491 (2006). Similarly, an epidemiological study in North Carolina on the effects of ambient levels of air pollutants on adolescents who attended public schools located near swine CAFOs determined that for students who reported allergies, the prevalence of wheezing experienced during the one-year study was 5 percent higher at schools that were located within 3 miles of a swine CAFO, and 24 percent higher at schools in which livestock odor was noticeable indoors twice per month or more. *Id.*; *see also* Maria C. Mirabelli, et al., *Asthma Symptoms Among Adolescents Who Attend Public Schools That Are Located Near Confined Swine Feeding Operations*, 18 *Pediatrics* 1, e66-e75 (July 2006).

42. In a comparison of nation-wide, county-level data on infant mortality rates, researchers assessed the potentially lethal threat of living in areas with an increasing livestock population. Researchers concluded that “a 100,000 animal unit increase [at the county level] corresponds to 123 more infant deaths per 100,000 births,” with about 80 percent of these occurring during first 28 days of life. Petition at 39; *see also* Stacy Sneeringer, *Does Animal Feeding Operation Pollution Hurt Public Health? A National Longitudinal Study of Health Externalities Identified by Geographic Shifts in Livestock Production*, 91(1) *Amer. J. Agr. Econ.* 124, 124 (Feb. 2009) [hereinafter Sneeringer]. This demonstrates a “statistically significant correlation between livestock and infant death.” Sneeringer at 129. Of these mortalities, only respiratory and perinatal causes of death were affected, “suggesting an air pollution mechanism.” *Id.* at 125. Of the many constituents of livestock air emissions, the study cites ammonia and hydrogen sulfide as the “main gases in question,” because both have been linked to respiratory infections and distress in infants, perinatal disorders, and spontaneous abortion. *Id.* at 126.

43. Due to the severity of human health effects from exposure to these gases, several federal government agencies have established public and worker exposure limits and regulations for ammonia and hydrogen sulfide gas due to their health and safety risks. For example, EPA has established a series of

short- and long-term ammonia health guidelines for both ammonia and hydrogen sulfide called Acute Exposure Guideline Levels (AEGLs); the Agency for Toxic Substances and Disease Registry has established Minimal Risk Levels (MRLs) for acute and chronic exposures; the Occupational Safety and Health Administration has established permissible exposure limits (PELs) for workplace exposure; and the National Institute for Occupational Safety and Health (NIOSH) has established recommended exposure limits (RELs) for the workplace. However, none of these standards specifically protect persons exposed to these toxic air pollutants outside of the workplace.

44. Researchers who have studied the health impacts of CAFO air pollution, individually and cumulatively, have published recommendations that “EPA should develop a standardized approach for regulating air pollution” from CAFOs, and should “enforce all provisions of . . . the [CAA] that pertain to [CAFOs].” The Pew Commission on Industrial Farm Animal Production, *Putting Meat on the Table: Industrial Farm Animal Production in America*, 75 (2008) [hereinafter PEW Report].

A. Ammonia

45. Ammonia is a caustic gas with a “pungent” odor that is released immediately after an animal evacuates its bowels, and continues to be released while the waste decomposes. Petition at 20-21. Ammonia exposure can cause a range of adverse health effects including nasal, throat, and eye irritation; odor detection; chemical burns of the respiratory tract, skin, and eyes; scarring; hemorrhaging of the gastrointestinal tract; and even lethal airway blockage and respiratory insufficiency. Petition at 54-55; *see also* Agency for Toxic Substances and Disease Registry, *Toxicological Profile for Ammonia*, 15, 25 (2007) [hereinafter Ammonia Profile].

46. The Agency for Toxic Substances and Disease Registry (ATSDR), a part of the Department of Health and Human Services, characterizes ammonia as a toxin. *See* Ammonia Profile at 1. At sufficiently high concentrations, ammonia will bypass the upper airways and directly affect the lungs, causing inflammation of the lower lungs and pulmonary edema, or swelling. Petition at 54-55; *see also* Iowa State Univ. & the Univ. of Iowa Study Group, *Iowa Concentrated Animal Feeding Operations Air Quality Study, Final Report* 123-24 (2002) [hereinafter Iowa Study]. Non-fatal effects of acute exposures

to high concentrations of ammonia can be long-lasting, and even permanent. One case study considered in ATSDR's Toxicological Profile monitored the health effects on three men who had been acutely exposed to ammonia gas; the men subsequently reported several symptoms, including burning of the skin, eyes, and throat. Ammonia Profile at 48. The men also showed signs of stressed airways, as evidenced by wheezing and coughing. *Id.* More than two years later, the researchers re-evaluated the men and found continuing symptoms of restrictive lung disease. *Id.* Another case study considered by ATSDR followed a man who, twelve years after exposure to ammonia gas, still suffered from recurrent bronchial infections as well as cough and exertional dyspnea, or shortness of breath, while exercising. *Id.*

47. The Toxicological Profile also documents neurological impacts involving exposure to ammonia such as blurred vision, muscle weakness, decreased deep tendon reflexes, and loss of consciousness. Ammonia Profile at 17. Ammonia exposure can also cause inflammation of the eyes and swelling of the eye-lids. *Id.* Ammonia's solubility allows it to quickly absorb into, and damage the cells of, the upper airways. *Id.* at 25, 100. In addition, acute ammonia inhalation can cause fatal burns and infections. *Id.* at 100. According to ATSDR, ammonia becomes acutely lethal at concentrations of 5,000-10,000 parts per million (ppm). *Id.* These levels of exposure often result in chemical burns and swelling of the skin, eyes, and respiratory tract. *Id.* Studies have found that such high levels of ammonia actually scorch those exposed from the inside out, causing extensive internal damage such as swelling and congestion of the lungs, the stripping off some linings of the bronchial wall, and burns across the upper body, face, and mouth. *Id.*

48. The National Research Council of the National Academies prepared a report on guideline levels of acute exposure to airborne chemicals, including ammonia. The Council reported that exposure to ammonia for as little as five minutes caused dryness of the nose and irritation to the eyes, nose throat and chest. Nat'l Research Council, *Acute Exposure Guideline Levels for Selected Airborne Chemicals: Vol 6*, 66-67 (2007). Exposure to lower concentrations of ammonia for an extended period of time can result in eye discomfort, headache, dizziness, upper respiratory and throat irritation, nasal dryness, and a "feeling of intoxication" significantly greater than that experienced by control populations. *Id.* at 73. As

concentrations of ammonia increase, effects of exposure become more pronounced, leading to general discomfort; an urge to cough; irritation to the eyes, nose, throat, and chest; and mucous production. *Id.* at 77. At concentrations of about 100 ppm effects begin to include increases in nasal airway resistance; highly intense odor; continued discomfort; highly intense to unbearable eye, nose, throat, and chest irritation; and tearing. *Id.* at 78. Finally, at the highest of concentrations, there can be respiratory scarring, including tracheal and nasopharyngeal burns; bronchiolar/alveolar swelling hyperventilation; reflex throat closure; and death. *Id.* at 92-93, 98.

49. Concentrations of ammonia greater than 100 ppm have been regularly reported in poultry confinement operations, Iowa Study at 123, and studies of ambient ammonia levels from CAFO emissions showed that CAFOs can produce harmful levels of ammonia, even at a distance from the facility, *see generally, id.* *See also* Wing, et al., *Intensive Livestock Operations, Health and Quality of Life Among Eastern North Carolina Residents*, 108 *Environmental Health Perspectives* 3 (2000); Williams, et al., *Airborne Cow Allergen, Ammonia and Particulate Matter at Homes Vary with Distance to Industrial Scale Dairy Operations: An Exposure Assessment*, 10 *Environmental Health* 72 (2011); Schinasi, et al., *Air Pollution, Lung Function, and Physical Symptoms in Communities Near Concentrated Swine Feeding Operations*, *Epidemiology* 208, 214 (2011). For instance, in conducting a research review on the public health impacts of CAFOs, the Pew Commission on Industrial Farm Animal Production – a Commission established by Johns Hopkins Bloomberg School of Public Health and the Pew Charitable Trust – found that living in close proximity to CAFOs has documented adverse health effects. In particular, studies have shown respiratory health impacts from CAFO air emissions, including an increased incidence of asthma among both children and adults. PEW Report at 17. In reviewing the studies, the Commission concluded that communities near CAFOs “are subject to air emissions that, although lower in concentration [than worker exposures], may significantly affect certain segments of the population.” *Id.*

B. Hydrogen Sulfide

50. Hydrogen sulfide is a flammable, poisonous chemical and asphyxiant released through the decomposition of animal waste, which produces a sulfurous odor similar to rotten eggs. Petition at 19-20. Depending on the concentration, duration of exposure, and sensitivity of the individual exposed, hydrogen sulfide exposure can cause difficulty breathing, loss of consciousness, shock, pulmonary edema, coma, brain damage, and death. *Id.* at 52-53. Studies demonstrate that even exposure to low concentrations of hydrogen sulfide lead to significant neuropsychological abnormalities, including impaired balance, visual field performance, color discrimination, hearing, memory, mood, and intellectual function. *Id.*; *see also* Iowa Study at 126. Survivors of hydrogen sulfide poisoning are reported to commonly have neuropsychiatric defects, some of which can be permanent. For example, after heightened exposure, some individuals have experienced permanent or long-term effects such as headaches, poor concentration, poor short-term memory, and impaired motor function. Iowa Study at 126

51. Like ammonia, the ATSDR characterizes hydrogen sulfide as a toxin. *See generally* Agency for Toxic Substances and Disease Registry, *Toxicological Profile for Hydrogen Sulfide*, 1 (July 2006) [hereinafter Hydrogen Sulfide Profile]. The toxic effects of hydrogen sulfide are based, in part, on its property as a chemical asphyxiant. Iowa Study at 124. The primary mode of absorption of hydrogen sulfide is through inhalation, though small amounts can also enter the body through the skin. *See* Hydrogen Sulfide Profile at 76-77. The ATSDR specifically recognizes that hydrogen sulfide exposure “tends to be a problem in communities located near . . . swine containment and manure handling.” *Id.* at 10. In addition to the symptoms discussed above, the ATSDR found that exposure to hydrogen sulfide at even lower concentrations can result in respiratory and nervous system effects. The most commonly reported nonlethal effect is unconsciousness followed by apparent recovery, also referred to as a “knockdown.” *Id.* Exposure to low concentrations of hydrogen sulfide has been linked to numerous neurological effects, including incoordination, poor memory, hallucinations, personality changes, and anosmia (loss of sense of smell), as well as respiratory effects, including nasal symptoms, sore throat,

cough, and dyspnea. *Id.* at 10. Impaired lung function has also been observed in asthmatics acutely exposed to amounts as low as 2 ppm hydrogen sulfide. *Id.* at 10-11.

52. Exposure to heightened concentrations of hydrogen sulfide has been linked to more severe respiratory distress or arrest and pulmonary edema. Hydrogen Sulfide Profile at 12. Numerous cases suggest that these effects can occur after only a brief, acute exposure to hydrogen sulfide. *Id.* at 12. Cardiovascular effects, such as cardiac arrhythmia and tachycardia, have also been observed following an acute exposure to high concentrations of hydrogen sulfide. *Id.* at 10.

53. While greater than 100 ppm of hydrogen sulfide is considered immediately hazardous to human life and health, levels as high as 1,000 ppm have been reported following the agitation of manure lagoons. Iowa Study at 124. Exposure to such elevated levels of hydrogen sulfide can cause rapid loss of consciousness followed by death, sometimes after only one or two breaths. Hydrogen Sulfide Profile 22. This manner of response is described by the ATSDR as the “slaughterhouse sledgehammer” effect. *Id.*

54. The Occupational Safety and Health Association has estimated that 125 hydrogen sulfide-related deaths occurred at industrial animal facilities between 1984 and 2009. Petition at 52-53. In a fatal case described by the ATSDR, “[a]fter being exposed to hydrogen sulfide in a bathroom connected to a manure pit, a man developed nausea, vomiting, dizziness, and dyspnea, and died a few hours later; hemorrhagic bronchitis and asphyxiation were noted as the cause of death.” Hydrogen Sulfide Profile 23. In another case described by the ATSDR, “[a]fter developing decerebrate responses to painful stimuli and partial seizures, with subsequent indications of brain stem damage, a 16-year-old boy died. He was exposed to what was presumed to be hydrogen sulfide in a liquid manure tank.” *Id.* at 23.

55. Residents living near industries that emit hydrogen sulfide have been observed to experience increased nasal symptoms, cough, and an increase in hospital emergency room visits due to respiratory symptoms (including asthma). Hydrogen Sulfide Profile at 12. Hospital visits by minors exposed to the gas also escalated. Specifically, the ATSDR determined that “[c]hildren are more likely to be exposed to hydrogen sulfide near animal waste sites such as the sediments of fish aquaculture, livestock barns, or manure areas. *Id.* at 131.

56. Due to its rotten egg smell, even at low concentrations, hydrogen sulfide is commonly responsible for the strong odors in areas surrounding CAFOs. Petition at 52. As a result, the National Research Council (NRC) found CAFO emissions of hydrogen sulfide to have a “significant” effect on the quality of human life on a local basis. Ad Hoc Comm. on Air Emissions from Animal Feeding Operations, *et al.*, Nat’l Research Council, *Air Emissions from Animal Feeding Operations: Current Knowledge, Future Needs*, 72 (2003) [hereinafter NRC Air Emissions from AFOs].

C. Particulate Matter

57. Particulate Matter consists of small solid and liquid particles suspended in the ambient air. Petition at 21. PM is categorized by its aerodynamic diameter. *Id.* For example, PM_{2.5} consists of “fine” PM particles with an aerodynamic diameter less than or equal to 2.5 micrometers. This is significant because such incredibly small particles can be inhaled deeper into the lungs, where they can cause a suite of significant public health problems, including respiratory symptoms, decreased lung function, aggravated asthma symptoms, chronic bronchitis, irregular heartbeat, heart attacks, and premature death. EPA, Technology Transfer Network OAR Policy and Guidance, *Health and Environmental Effects of Particulate Matter: Fact Sheet* (Jul. 17, 1997), <http://www.epa.gov/ttn/oarpg/naaqsfm/pmhealth.html>. Particulate matter less than or equal to 10 microns, PM₁₀, is referred to as coarse PM, and EPA has established separate CAA health limits for this larger PM.

58. EPA has recognized the health and environmental impacts of particulate pollution, and PM_{2.5} in particular, for decades. PM is classified as a criteria pollutant under the CAA, and EPA maintains NAAQS that are meant to improve air quality, reduce emissions of criteria pollutants, and protect public health and welfare from respiratory problems, decreased lung function, aggravated asthma symptoms, chronic bronchitis, irregular heartbeat, heart attacks, and premature death. *See* Clean Air Fine Particle Implementation Rule, 72 Fed. Reg. 20,586 (Apr. 25, 2007) (codified at 40 C.F.R. Part 51). EPA works toward attaining the NAAQS goals of protecting the environment and public health by setting national emissions standards for stationary sources of these criteria pollutants.

59. At CAFOs, PM can be directly emitted – often as a result of dry manure, bedding and feed materials, biological matter (i.e., animal dander and feathers), and other dusts – or it can be formed by chemical reactions of other precursor gases in the atmosphere. Petition at 21. Ammonia and hydrogen sulfide, as well as nitrous oxide and VOCs, released by CAFOs can act as PM precursors. *Id.* For example, ammonia gas reacts readily with acidic compounds in the air, such as nitric acid, hydrochloric acid, and sulfuric acid, and can form small particles known as ammonium nitrate and ammonium sulfate aerosols; those aerosols tend to measure less than 2.5 micrometers in diameter, and, therefore, constitute fine PM (PM_{2.5}). *Id.*; see also NRC Air Emissions from AFOs at 55. These aerosol particles can have devastating effects on cardiovascular systems. NRC Air Emissions from AFOs at 68. Ammonium nitrate is the most significant PM_{2.5} element in the San Joaquin Valley, dominating all other forms of PM_{2.5}.

60. Up to 40 percent of PM_{2.5} from CAFOs can be absorbed in human and animal systems. Petition at 57. Studies show that populations with a greater incidence of long-term exposure to particulate matter were found to have higher rates of chronic respiratory problems, declining lung function, and mortality from major cardiovascular disease. *Id.* at 57. More than 1,000 deaths have been estimated to occur annually in the San Joaquin Valley air basin in California as a result of heightened levels of PM_{2.5}; dairies are one of the largest sources of ammonia and VOC in the San Joaquin Valley. *Id.*

D. Greenhouse Gases: Methane and Nitrous Oxide

61. As massive storehouses for biological waste, CAFOs release immense amounts of the powerful greenhouse gases methane and nitrous oxide. According to the Intergovernmental Panel on Climate Change (IPCC) – a leading international scientific body established by the United Nations Environment Programme and the World Meteorological Organization to review and assess international understanding regarding the effects of climate change – the “[w]arming of the climate system is unequivocal.” Intergovernmental Panel on Climate Change, *Climate Change 2007: The Physical Science Basis*, 5 (2007). Moreover, “[m]ost of the observed increase in global average temperatures since the mid-20th century is *very likely* due to the observed increase in anthropogenic greenhouse gas concentrations,” *Id.* at 10. Of the greenhouse gases of concern, three have increased markedly due to anthropogenic

activities: carbon dioxide, methane, and nitrous oxide. Petition at 17-18. Methane and nitrous oxide are, over a 100-year period, considered to be 20 and 300 times more powerful than carbon dioxide at trapping heat in the atmosphere, respectively; that warming potential is believed to be even greater in the short term. *Id.* at 18-19. As a result, making reductions in these two potent greenhouse gases can significantly help achieve important climate benefits.

62. Specifically, methane is produced as a result of the anaerobic decomposition of organic matter in biological systems, and as part of the normal digestive process in ruminant animals. Petition at 17-18. Nitrous oxide is typically produced as a result of a microbial process called nitrification and denitrification, which often occurs in soils and fertilizer, including through the decomposition of livestock manure and urine. *Id.* at 19.

63. CAFO emissions of methane and nitrous oxide contribute to increasing global temperatures; intensification in adverse weather patterns, including changes in storm, wildfire, and precipitation patterns; changes in the type, distribution, and coverage of natural vegetation; reduced fresh water availability; ocean acidification; losses of arctic sea ice and reductions in glacial size; increases in sea level, which will result in increased flood rates; and the impairment of natural habitats and biodiversity, leading to ecosystem loss and species extinction. *See* Petition at 10-12, 18-19. Biodiversity is a key indicator of planetary health and habitability, and if emissions continue at their current rates, the effects of climate change are expected to lead to significant extinctions around the globe. *Id.* at 49-50. Up to 30 percent of plant and animal species will be at an increasingly high risk of extinction as global mean temperatures exceed a warming of 2 to 3°C above preindustrial temperature levels. *Id.*; *see also* Intergovernmental Panel on Climate Change, *Fourth Assessment Report, Climate Change 2007: Synthesis Report, Summary For Policymakers*, 10, 19 (2007) [hereinafter IPCC Physical Science Summary].

64. For humans, the expected impacts of unrestricted climate change are dire. Adverse human health consequences associated with these climate changes include increased infectious diseases, including vector-borne diseases and waterborne diseases; food and water insecurity; heat-related disorders, such as heat stress, dehydration, and adverse economic consequences of reduced work capacity;

respiratory disorders; mental health disorders, such as the post-traumatic stress disorders and depression associated with natural disasters; and death. Petition at 42-43, 51. As a result of projected changes in weather patterns associated with climate change, human populations internationally will experience increased damage and expense due to floods and storms, with millions more people experiencing coastal flooding due to the projected 30 percent loss of global coastal wetlands. *Id.* at 48-49; IPCC Physical Science Summary at 10; H. Steinfeld, et al., U.N. Food & Agricultural Organization, *Livestock's Long Shadow: Environmental Issues and Options*, 80 (2006) [hereinafter *Livestock's Long Shadow*].

65. At the same time, as infrastructure is negatively impacted by the effects of climate change, scientists have projected that there will be a reduction in the availability of fresh water in densely populated regions. *See* Petition at 48. For example, in Africa by 2020, between 75 and 250 million people are expected to be exposed to increased water stress due to climate change. IPCC Physical Science Summary at 11. Further changes associated with climate change, including changes in climatic pattern, water stress, and ocean acidification, are projected to lead to increased malnutrition, as well as diarrheal, cardio-respiratory, and infectious diseases, including changes in the distribution of some disease vectors. *Id.* at 10-11. These harms and impacts to human health and welfare will continue without reasonable restriction and oversight of greenhouse gases.

66. Like PM, nitrogen oxides are also classified as common criteria pollutants under the CAA, with standards set for nitrogen dioxide as an indication of air pollution. *See* 40 C.F.R. § 50.11. Methane and nitrogen oxides are both precursors for the formation of ground level ozone, Petition at 22, which is also a criteria pollutant under the CAA, 40 C.F.R. §§ 50.9-50.10. EPA has been concerned with the deterioration of ground-level ambient air from the formation of ozone for decades.

E. Volatile Organic Compounds

67. Finally, VOCs are defined by EPA 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.” 40 C.F.R. § 51.100(s). VOCs are emitted from CAFOs through feed, fresh waste, enteric processes, such as gases released through ruminant

animals' digestion process, and during the decomposition of manure in both wet and dry conditions. Petition at 22. CAFOs potentially emit 165 VOCs, and of these, 24 have been identified as odorous chemicals (often referred to as "odorants"); twenty-one are listed in the CAA as Hazardous Air Pollutants (HAPs). 42 U.S.C. § 7412(b). Some of the most recognized CAFO-emitted VOCs that are also HAPs include benzene, formaldehyde, tetrachloroethylene, methanol, toluene, and xylene. Petition at 22. Similar to methane and nitrogen oxides, VOCs are precursors to the formation of ground level ozone. *Id.* at 35.

68. Some VOCs can be toxic to the nervous system. Studies examining neurobehavioral issues among residents living near CAFOs have documented increased rates of neurobehavioral symptoms such as negative mood states including depression, anger, fatigue, and confusion. *See Schiffman, et al., The Effect of Environmental Odors Emanating from Commercial Swine Operations on the Mood of Nearby Residents*, 37(4) Brain Research Bulletin 369, 371 (1995); Schiffman, et al., *Quantification of Odors and Odorants from Swine Operations in North Carolina*, 108 Agricultural and Forest Meteorology 213, 214 (2001).

II. CAFOs Cause and Contribute Significantly to Air Pollution

69. Industrial animal facilities are stationary sources that release a substantial volume of air pollutants into the ambient environment. Petition at 23-24. As estimates confirm, these operations cause and contribute significantly to air pollution. *Id.* at 24-27.

70. The agricultural sector is responsible for nearly 7 percent of greenhouse gas emissions in the United States, more than any sector other than energy, while internationally the livestock sector has been estimated to be responsible for as much as 18 percent of greenhouse gas emissions, measured in carbon dioxide equivalents. Petition at 28-29; *Livestock's Long Shadow* at xxi. Enteric fermentation, a digestive process of ruminant livestock, represents 27 percent of total methane emissions, the largest anthropogenic source of methane in the United States. Petition at 29. Methane emissions from manure management further increase the methane load attributable to animal feeding operations. As a result, in 2006, animal feeding operations were responsible for emitting almost 9 million tons of methane, or about 185 million tons of carbon dioxide equivalent, in the United States alone. *Id.* Taken to a more local scale,

methane emissions from agriculture in Iowa are estimated to comprise approximately 10-15 percent of total greenhouse gas emissions in the state, and 25 percent of all methane emissions in the state. Iowa Study at 12.

71. Increases in methane emissions correlate with the consolidation of the livestock industry over the last twenty years, with emissions trends showing a 34 percent increase in methane emissions from manure management between the years 1990 and 2006. EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2006*, Report No. EPA-430-R-08-005, ES-10 (2008). Similarly, agricultural soil management activities, such as fertilizer application and other cropping practices, provide the largest source of nitrous oxide emissions in the United States, producing approximately 72 percent those emissions in 2006; this estimate includes “fertilizer” procurement, via accumulated animal waste, and use by CAFOs. *Id.* at ES-13.

72. EPA further estimates that animal feeding operations are responsible for almost three-fourths of the ammonia emissions in the United States, or approximately 2.5 million tons of ammonia per year. Petition at 33. A single dairy CAFO in Oregon, for example, has estimated its own emissions at 2,500 tons of ammonia in one year – approximately 35 tons more ammonia than the nation’s number-one manufacturing source, the nitrogen and fertilizer company CF Industries. *Id.* Dairies are one of the largest sources of ammonia in California’s San Joaquin Valley.

73. Further, releases of VOCs and PM from CAFOs have been associated with persistent exceedances of NAAQS in some areas of the country. For example, dairies have been linked to chronic non-attainment of the ozone and fine particulate matter NAAQS in the San Joaquin Valley; as a result, the air basin has been classified as an extreme ozone nonattainment area and a serious non-attainment area for PM_{2.5}. Petition at 35-36. The San Joaquin Valley Unified Air Pollution Control District (the regional permitting authority in California) has determined that “[d]airies are a significant source of smog-forming volatile organic compounds and of fine particulate matter in the San Joaquin Valley. Volatile Organic Compounds are emitted directly from the Valley’s approximately 2.5 million dairy cows, and also from the decomposition of hundreds of millions of pounds of dairy waste excreted each day from dairy cows in

the San Joaquin Valley . . . [B]y any of the common current estimates, dairies are among the largest source of VOCs in the Valley, and these smog-forming VOC emissions have a significant adverse impact on efforts to achieve the health-based air quality standards.” San Joaquin Valley Air Pollution Control District, *Air Pollution Control Officer’s Determination of VOC Emission Factors for Dairies*, 6 (Aug. 1, 2005).

74. CAFOs are sited in a fixed location, and air pollutants can be released from a number of different on-site sources. First, the mass concentration of animals is achievable because of the use of feedlots and confinement buildings; these structures – which typically have a roof, walls or removable walls, and, depending on the facility’s use of walls, a series of large ventilation fans designed to expel gases and particulates from the inside of the facility – are one of the major sources of aerial emissions from industrial animal facilities. *See* Petition at 15. The waste accumulated and stored by CAFOs is a second major on-site source of aerial emissions from industrial animal facilities. *Id.* at 15-16. Finally, after collection in a waste management system, the waste is maintained in that location for a period of time, and is then generally either transported and applied to nearby fields – through spraying, spreading, or injection – off-site for an alternate use; land disposal practices are a third major on-site source of CAFO air pollutants, including emissions of nitrous oxide through a process called the nitrogen cascade. *Id.*

75. Regardless of the method of waste management typically utilized by CAFOs, gaseous and particulate matters are continuously released into the air. Waste from industrially farmed hogs or cows, for example, is often collected in a waste management system designed to maintain liquid and/or slurry wastes; these systems are frequently open to the environment, and facilitate the release of gases into the ambient environment. Petition at 15-16. Waste from industrially farmed chickens and turkeys is often collected in a dry form and maintained in waste piles that are uncovered, covered with a tarp or other soft covering, or stored in a roofed waste shed that lacks some or all walls; as with liquid waste management systems, gases and particulate matters from these dry waste management systems continue to be released from the waste products, and are generally unrestrained prior to entry into the environment.

Id. Similar gaseous and particulate matter releases result from waste disposal practices, such as the application of aggregated animal wastes (often times by spraying or other broadcast methods) to crops as a “fertilizer.” *Id.* Agitation and transportation of animal wastes has been linked to a greater release of gaseous pollutants into the surrounding environment. NRC Air Emissions from AFOs at 125.

III. The 2009 Petition

76. On September 21, 2009, due to the demonstrated effects on human health and welfare and the significant contribution by CAFOs to nationwide air pollution, discussed *supra*, Plaintiffs submitted a Petition to EPA to list CAFOs as a category of sources under section 111 (b)(1)(A) of the CAA, and, thereafter, to promulgate standards of performance under section 111(b)(1)(B) of the Act and prescribe regulations for state performance standards for existing CAFOs under section 111(d) of the Act.

77. In the Petition, Plaintiffs explained that mitigating the animal agriculture sector’s significant yet under-regulated role in climate change and other air pollution problems is vital for the health and sustainability of the planet, the environment, and its human and nonhuman inhabitants. *See generally* Petition at 24-61. Further, as compelling scientific evidence supports the immediate listing of CAFOs and the issuance of new source performance standards for the industry, Plaintiffs posited that not only is regulating CAFOs as a category of sources of air pollution entirely justified, but also that it would be unreasonable for EPA to decide against listing CAFOs as a category of sources. *See generally* Petition at 23-24, 61-62.

78. In 2010, HSUS submitted a revised copy of the Petition to EPA, solely for the purpose of adding the Sierra Club to the list of Petitioners. No further changes were made to the revised Petition, as submitted.

79. On October 22, 2010, HSUS received a written acknowledgement from EPA recognizing the Agency’s receipt of the Petition.

IV. Post-Petition Events

80. On August 5, 2013, Plaintiff Environmental Integrity Project submitted an indexed compilation of 63 scientific studies, reports, and other documents to EPA in support of the Petition. On

May 28, 2014, EIP submitted an additional recent study on the health impacts of agricultural ammonia emissions to EPA, to aid in the Agency's consideration of the Petition.

81. On August 20, 2013, HSUS convened a teleconference with EPA staff overseeing consideration of the Petition to determine the Petition's status and to request for EPA to open a public docket for the Petition. Such a docket could be used to maintain in one public location documents related to EPA's review of the Petition, documents attached to the Petition, and public input and scientific research about air pollution from CAFOs, including its impact on the environment, emissions rates, and human health and welfare. As EPA has explained "[a] docket serves as the repository for documents or information related to a particular EPA activity. Agencies, such as EPA, most commonly use dockets for rulemaking actions, but dockets may also be used for various non-rulemaking activities." The Agency declined to open a public docket for the Petition.

82. On November 1, 2013, EPA provided HSUS with a letter summarizing the August 20, 2013 teleconference meeting. In that letter, EPA confirmed that it did not presently intend to open a docket for this matter and did not intend to substantively address the Petition until after it completed an administrative settlement agreement that it entered into with the CAFO industry, termed the Animal Feeding Operation Consent Agreement and Final Order (Air Consent Agreement). EPA entered into the Air Consent Agreement with various members of the animal agricultural industry between 2005 and 2007; the Air Consent Agreement does not amend, change, or otherwise interpret EPA's authority to regulate CAFOs under the CAA.

V. EPA's Failure to Respond to Plaintiffs' Petition

83. Over five years have passed since Plaintiffs initially filed their legal Petition for rulemaking requesting that EPA take action to list CAFOs as a category of sources under the CAA and promulgate associated regulations. During that time, CAFOs have continued to emit air pollutants, including ammonia, hydrogen sulfide, methane, nitrous oxide, and VOCs, into the environment, avoidably endangering human health and welfare and contributing significantly to air pollution. EPA has not substantively responded to the 2009 Petition.

CLAIM FOR RELIEF

84. Plaintiffs incorporate by reference all allegations contained in paragraphs 1 through 83, *supra*.

85. The CAA is a federal environmental law designed to protect and enhance the quality of our Nation's air with the objective of pollution prevention and the purpose of supporting and making safer public health and welfare. 42 U.S.C. § 7401.

86. To effectuate these goals, the CAA requires that the Administrator of EPA to establish (and from time to time thereafter revise) a list of categories of stationary sources of air pollution. 42 U.S.C. § 7411(b). The stationary source list is to include categories of polluters that “cause[], or contribute[] significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare.” *Id.* § 7411(b)(1)(A).

87. The available and growing body of scientific research clearly demonstrates that air emissions from CAFOs cause and contribute significantly to air pollution that can be reasonably anticipated to endanger public health and welfare. As such, as requested in Plaintiffs' 2009 Petition, EPA should use its authority to list CAFOs as a category of sources under the CAA, and, thereafter, promulgate such standards of performance for new CAFOs and prescribe such regulations for state performance standards for existing CAFOs as the CAA requires.

88. By failing to respond to Plaintiffs' 2009 Petition, EPA has unlawfully withheld and unreasonably delayed agency action. This failure to act is particularly egregious given the extreme risk to human health and welfare and the environment caused by aerial pollutants originating from CAFOs.

89. EPA's failure to act has violated and continues to violate the APA, which directs each agency to “give an interested person the right to petition for the issuance, amendment, or repeal of a rule,” and to provide a timely response to that petition. 5 U.S.C. § 555(e) (“Prompt notice shall be given of the denial in whole or in part of a written application, petition, or other request of an interested person . . .”); *see also id.* § 551(4) (defining “rule” as “the whole or part of an agency statement of general or particular

applicability and future effect designed to implement, interpret, or prescribe law or policy”); *id.* § 551 (13) (defining “agency action” to include “failure to act.”).

90. EPA’s delay further violates the APA by taking an unreasonable amount of time to respond to the 2009 Petition. 5 U.S.C. § 555(b) (the federal agency must, “within a reasonable amount of time . . . conclude a matter presented to it.”).

91. The APA grants a right of judicial review to “a person suffering legal wrong because of agency action, or adversely affected or aggrieved by agency action.” 5 U.S.C. § 702. The APA further states that a reviewing court “shall compel agency action unlawfully withheld or unreasonably delayed.” *Id.* § 706(1).

92. Plaintiffs and their members are adversely affected by EPA’s past and continuing failure to meaningfully respond to the 2009 Petition.

REQUEST FOR RELIEF

WHEREFORE, Plaintiffs respectfully request that the Court:

- (1) Declare that EPA’s failure to issue a timely final decision on the 2009 Petition violates the APA;
- (2) Order EPA to make a final decision on the 2009 Petition within 90 days;
- (3) Retain jurisdiction over this matter until such time as EPA has fulfilled its legal obligations, as set forth more fully in this complaint;
- (4) Award Plaintiffs attorneys’ fees and all other reasonable expenses incurred in pursuit of this action; and
- (5) Grant Plaintiffs such further and additional relief as the Court may deem just and proper.

Respectfully submitted this 28th day of January, 2015.

/s/ Hannah Connor

Hannah Connor (District of Columbia Bar No. 1014143)

Hallie Sears (District of Columbia Bar No. 1001756)

Peter Brandt (District of Columbia Bar No. 982936)

The Humane Society of the United States

2100 L Street NW

Washington, DC 20037

(202) 676-2354

(202) 676-2357 (facsimile)

hconnor@humanesociety.org

hsears@humanesociety.org

pbrandt@humanesociety.org

Counsel for Plaintiffs Humane Society of the United States, Friends of the Earth, and Sierra Club

Tarah Heinzen (District of Columbia Bar No. 1019829)

Environmental Integrity Project

1000 Vermont Avenue NW, Suite 1100

Washington, DC 20005

(202) 263-4441

(202) 296-8822 (facsimile)

theinzen@environmentalintegrity.org

Counsel for Plaintiff Environmental Integrity Project

Brent Newell (*Pro Hac Vice Pending*)

Center on Race, Poverty, and the Environment

1999 Harrison Street, Suite 650

Oakland, California 94612

(415) 346-4179 x 304

(415) 346-8723 (facsimile)

bnewell@crpe-ej.org

Counsel for Plaintiff Association of Irrigated Residents