

The National Agricultural
Law Center



University of Arkansas
System Division of Agriculture
NatAgLaw@uark.edu | (479) 575-7646

An Agricultural Law Research Article

**The EPA's Proposed CAFO Regulations
Fall Short of Ensuring the Integrity
of Our Nation's Waters**

by

Michael Steeves

Originally published in JOURNAL OF LAND,
RESOURCES, AND ENVIRONMENTAL LAW
22 J. LAND RESOURCES & ENVTL L. 367 (2002)

www.NationalAgLawCenter.org

The EPA's Proposed CAFO Regulations Fall Short of Ensuring the Integrity of Our Nation's Waters

Michael Steeves

I. INTRODUCTION

Confined Animal Feeding Operations (CAFOs), have long been a significant source of pollution in our nation's rivers, streams, and waters. This pollution contributes to excess nutrients in water bodies, algae blooms, eutrophication, massive fish kills, atmospheric deposition of nitrogen, and outbreaks of the toxic *Pfiesteria piscicida*. In addition to these water quality issues, there are severe environmental and public health impacts associated with the concentrated production of livestock, including groundwater contamination, exposure to pathogens, antibiotic resistance, odor, loss of habitat, and heavy metal contamination.

Over twenty years ago, the Federal Water Pollution Control Act, or the Clean Water Act (CWA),¹ included feedlots as a point source in recognition of their potential to pollute. This recognition is even more appropriate today, as feedlots now stockpile and land-apply animal manure in quantities that could never have been anticipated twenty years ago. Over the past several decades, CAFOs have replaced smaller farming operations, concentrating animal waste on fields and in lagoons. In 1997, there were about 40% fewer livestock and poultry farms than in 1974, as smaller farms were being driven out of business by large-scale operations.² As the waste produced from these operations increases, its effects, both on health and the environment, continue to compound.

Recognizing that a stronger regulatory program is needed to mitigate such impacts, and acknowledging that CAFOs are a significant source of pollution in our nation's rivers, streams, and waters, the Environmental Protection Agency (EPA) has proposed revisions to the National Pollutant Discharge Effluent System Permit Regulations and Effluent Limitations Guidelines and Standards for Confined Animal Feeding Operations (CAFO regulations).³ These CAFO regulations are a direct result of a consent decree reached in a citizen suit filed against the EPA in 1989 by the Natural Resources Defense Counsel and Public Citizen alleging violations of section 304(m) of the CWA.⁴ Under the decree, the EPA agreed to revise existing effluent limitations and establish new guidelines for

¹ 33 U.S.C. §§ 1251-1387 (2001).

² National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitations Guidelines and Standards for Concentrated Animal Feeding Operations, Proposed CAFO Regulations, 66 Fed. Reg. 2960, 2974 (Jan. 12, 2001) (to be codified at C.F.R. pt. 122, 412) [hereinafter Proposed CAFO Regulations].

³ *Id.*

⁴ See *Natural Resources Defense Counsel, Inc. v. Reilly*, No. 89-2980, 1991 U.S. Dist. LEXIS 5334 (D.D.C. 1992).

nineteen industrial categories.⁵ In a separate settlement agreement reached between the same parties in 1999, the EPA committed to revising the existing National Pollutant Discharge Effluent System (NPDES) for CAFOs.⁶ These proposed CAFO regulations were signed by the Administrator of the EPA on December 15, 2000 and published in the Federal Register on January 12, 2001.⁷

The proposed CAFO regulations are a good start at implementing effective permitting and oversight of CAFOs and its effluent limitations, and they include a number of meaningful components. Measures that will help strengthen current regulations and limit pollution include the requirement that processors with substantial operational control over contract growers be co-permitted; the elimination of the 25-year, 24-hour storm permit exemption; and the clarification that the effluent guidelines apply to layer and broiler operations using dry manure handling.

Despite these positive measures, however, the proposed CAFO regulations fall short of what is needed to adequately address the magnitude and critical nature of the environmental impacts resulting from CAFOs. After a brief look at the serious health and environmental impacts of CAFO waste, this Comment will address these shortfalls in the NPDES provisions of the proposed CAFO regulations. Specifically, it will look at general versus specific permitting, groundwater contamination, application of the agricultural stormwater exemption, an analysis of the Permit Nutrient Plan, and transfer of waste to off-site third parties.

I. CAFO WASTE POSES A SERIOUS THREAT TO HUMAN HEALTH AND THE ENVIRONMENT

CAFOs are a “significant source of water pollution in the United States,”⁸ and after more than twenty years of regulation, manure and manure nutrients from CAFOs are continually discharged into our nation’s waters.⁹ When applied with the proper methods and in the right quantity, manure can be beneficial to soil quality.¹⁰ However, as animals become more concentrated in feedlots, and feedlots become more clustered around each other, “it is more difficult and thus less likely that the manure will be disposed of properly.”¹¹ This problem is exacerbated by the sheer quantity of manure produced: a ton of chickens generates nine tons of manure per year; a ton of beef steers generates seventeen tons of manure in one

⁵ *Id.*

⁶ Proposed CAFO Regulations, 66 Fed. Reg. at 2962.

⁷ *Id.*

⁸ *Id.* at 2972.

⁹ *Id.*

¹⁰ ROBBIN MARKS, NATURAL RESOURCES DEFENSE COUNCIL AND INTERNATIONAL ALLIANCE FOR SUSTAINABLE AGRICULTURE HOG WASH: FACTORY FARM GIVEAWAYS IN CLEAN WATER ACT PROPOSALS 1 (1995).

¹¹ *Id.*

year; a ton of dairy cows generates twenty four tons of manure; and a ton of pigs generates thirty tons.¹²

Manure waste contains large amounts of nutrients, bacteria, disease-causing microbes, hormones, and toxic metals that are poisoning rivers, lakes, streams, and groundwater. This pollution reaches our water bodies in a number of different ways. First, it may contaminate water through runoff, especially where manure is land-applied as fertilizer. This is most devastating where manure is misapplied, or when it rains shortly after application of the manure. Erosion is another way in which pollutants reach water sources.¹³ Further, over-grazing may double the impact of pollution, as manure is being produced while more soil is lost to wind and rain. Pollution may also leach into groundwater through land-application or leaking lagoons.¹⁴ Many communities in the vicinity of CAFOs have had their drinking water impacted by this leaching process.¹⁵ Pollution can be carried directly to water bodies by livestock, and insects can spread pathogens to livestock and humans. Finally, pollution can be deposited by air discharges, especially dust particles. However it is discharged, the waste is detrimental to human and ecological health, and must be controlled in order to ensure the integrity of our nation's water.

A. Excess Nutrients Are a Leading Cause of Water Impairment

In 1995, a hog manure lagoon in North Carolina burst, spilling 25 million gallons of waste and killing nearly 10 million fish.¹⁶ This is just one example of the serious effects that nutrients within manure, especially nitrogen and phosphorus, have on water quality. While they are required by most living matter and come from a variety of sources, excessive concentrations from manure can cause "problems in ordinarily balanced ecosystems."¹⁷ These nutrients are the leading "stressor" in impaired lakes, reservoirs, and ponds; the third greatest in rivers and streams; and the fourth greatest in estuaries.¹⁸

Nitrogen in manure exists both in organic and inorganic forms (mostly as ammonia). Excessive organic nitrogen can over-enrich water bodies, leading to an excess of algae and plant life, a process called eutrophication.¹⁹ Nitrogen may also build up in surrounding plant life, potentially poisoning foraging animals. As

¹² *Id.* at 1-2.

¹³ *Id.* at 4.

¹⁴ *Id.* at 2.

¹⁵ *Id.* at 2-3.

¹⁶ ROBBIN MARKS & REBECCA KNUFFKE, CLEAN WATER NETWORK AND NATURAL RESOURCES DEFENSE COUNCIL, AMERICA'S ANIMAL FACTORIES: HOW STATES FAIL TO PREVENT POLLUTION FROM LIVESTOCK WASTE viii (1998).

¹⁷ AMER EL-AHRAF & WILLIAM V. WILLIS, MANAGEMENT OF ANIMAL WASTE: ENVIRONMENTAL HEALTH PROBLEMS AND TECHNOLOGICAL SOLUTIONS 15 (Praeger 1996).

¹⁸ Proposed CAFO Regulations, 66 Fed. Reg. at 2976.

¹⁹ El-Ahraf, *supra* note 17, at 16.

nitrite enters the digestive system of animals, it reduces the oxygen carrying capacity of the blood and results in cell asphyxiation.²⁰ When stored in large pits or lagoons, organic nitrogen is converted into ammonia, creating a host of problems such as foul smells, acid rain, and nitrogen enrichment of the water.²¹ Additionally, ammonia is highly toxic to fish. Phosphorus affects water bodies in a similar fashion. Like nitrogen, it exists in organic and inorganic forms. It may cause excess algae and eutrophication, and at high levels, phosphorus is toxic to aquatic life.²² Nitrogen and phosphorus pollution is a major problem in the Chesapeake Bay, where it has drastically reduced fish and shellfish harvests.²³

Other organic matter is also present in manure. Many carbon-based, biodegradable compounds within the waste are decomposed by bacteria in surface water, consuming dissolved oxygen in the process and reducing the amount of oxygen available to other aquatic life.²⁴ This oxygen depletion in aquatic habitats leads to the death of fish and plant life. An example of severe oxygen depletion is a “dead zone” in the Gulf of Mexico south of Louisiana, where “massive fish kills” are common during certain seasons.²⁵

Moreover, eutrophication is a major cause of fish kills in water bodies across the country. Algae blooms can kill plants and fish by blocking sun light, reducing dissolved oxygen, raising pH levels, and producing toxic microorganisms. One such microorganism linked to eutrophication is *Pfiesteria piscicada*. This microorganism is highly toxic to fish and shellfish. In 1997, *Pfiesteria piscicada* was responsible for the death of over 30,000 fish in Chesapeake Bay.²⁶ In that same year, a *Pfiesteria* outbreak likely caused by hog farms killed over 450,000 fish in North Carolina.²⁷ *Pfiesteria* also presents a danger to human health. People exposed to *Pfiesteria* have exhibited “skin sores, severe headaches, blurred vision, nausea/vomiting, sustained difficulty breathing, kidney and liver dysfunction, acute short-term memory loss, and severe cognitive impairment.”²⁸

Algae blooms also produce other toxins. Cyanobacteria, or blue-green algae, is toxic to both fish and humans. The algae produces toxins that attack the nervous system and liver.²⁹ It also reduces dissolved oxygen levels in the water bodies. Finally, algae blooms release chlorinated compounds that can cause adverse health problems.³⁰

²⁰ *Id.*

²¹ J. RONALD MINER, ET AL., *MANAGING LIVESTOCK WASTES TO PRESERVE ENVIRONMENTAL QUALITY* 18 (Iowa State University Press 2000).

²² Marks & Knuffke, *supra* note 16, at 2.

²³ *Id.* at ix.

²⁴ Proposed CAFO Regulations, 66 Fed. Reg. at 2977.

²⁵ Marks & Knuffke, *supra* note 16, at 2.

²⁶ *Id.*

²⁷ Proposed CAFO Regulations, 66 Fed. Reg. at 2981.

²⁸ *Id.* at 2983.

²⁹ *Id.*

³⁰ *Id.*

Health problems associated with excess nutrients are becoming more common across the country. For example:

- In Indiana, the LaGrange County Health Department identified six miscarriages among women living near hog farms. Their drinking water wells had been contaminated with unsafe levels of nitrates.
- In California's Central Valley, dairy farmers have discovered their cows are aborting calves after drinking water from wells contaminated with nitrates. Farmers in this, the top milk-producing region in the nation, have been forced to dig deeper wells in search of water safe for their own cows to drink.
- In Torrington, Wyoming, cattle operations are possibly linked to nitrate levels in the groundwater that exceed the safe drinking water standard. High concentration of nitrates in drinking water can cause "blue-baby syndrome," a potentially fatal disease in infants that damages their red blood cells' oxygen carrying ability.
- In North Carolina, 34 percent of wells located next to poultry and hog farms had elevated nitrate levels and 10 percent were contaminated above the health standard for safe drinking water, a state health agency found in a survey of more than 1,000 wells.³¹

In order to avoid future catastrophes, the EPA must implement stringent regulations that will protect our nation's waters from CAFO waste.

B. Minerals and Heavy Metals from CAFO Waste Adversely Impact Human Health and the Environment

Another pollution concern associated with CAFOs is the accumulation of minerals and heavy metals in soil and water. Those that may adversely impact human health and the environment include arsenic, copper, selenium, zinc, cadmium, molybdenum, nickel, lead, iron, manganese, aluminum, and boron.³² Many of these elements end up in manure through pesticide use.³³ However, some of the elements are added to animal feed. For example, zinc and copper are added to feed for disease prevention and to help improve digestion.³⁴ Excessive application of manure causes high concentrations of minerals and heavy metals through buildup in the soil and runoff into surface and groundwater. Even where the concentration in manure is relatively low, these metals may cause problems due to their ability to concentrate over time in the tissues of plants and animals.

³¹ Marks & Knuffke, *supra* note 16, at viii.

³² Proposed CAFO Regulations, 66 Fed. Reg. at 2978.

³³ *Id.*

³⁴ Marks & Knuffke, *supra* note 16, at 2.

One effect of these high concentrations is livestock and wildlife poisoning. In one study, eight ewes out of a flock of forty-seven died from copper poisoning in a four-week period as a result of grazing on land fertilized with swine manure for seven straight years.³⁵ Concentrated levels may also impact crop production. In North Carolina, where zinc levels in the soil can reach over ten times the normal level, many farmers are having trouble growing their normal crops of peanuts.³⁶

Concentration of these minerals and metals also pose a threat to human health. Because arsenic is a carcinogen, drinking water with high levels of the element has led to increased incidences of skin and organ cancer.³⁷ Selenium and zinc may also lead to adverse health effects, such as liver dysfunction, the loss of hair and nails, and copper deficiency anemia.³⁸ Limiting the accumulation of these minerals and metals must be a factor in developing CAFO regulations.

C. Manure from CAFOs Can Also Lead to Air Pollution

Air pollution is also a major concern associated with CAFOs. Air pollution from CAFOs can take many forms, but it is most frequently associated with dust, anaerobic decomposition, and odors.

Dust caused by CAFOs is a major source of air pollution, especially in the southwestern United States. Dust can directly impact animal and human health, as well as degrade water quality. Particulate deposition is the third greatest cause of impairment for estuaries and fifth greatest cause for lakes, ponds, and reservoirs.³⁹ Additionally, these particles may carry bacterial spores and other diseases to humans and animals.⁴⁰ For example, Newcastle disease and bronchitis can be carried in dust particles.⁴¹

Another cause of air pollution is the gases produced from anaerobic decomposition of manure. The gases with the most potential health impacts on animals and humans include ammonia, hydrogen sulfide, and methane.⁴² Methane is a greenhouse gas with climate change implications. It is a byproduct of anaerobic reactions in manure lagoons. Ammonia is derived from organic nitrogen, and is most commonly produced in manure lagoons.⁴³ Up to 50% of the nitrogen in manure is converted to ammonia.⁴⁴ Not only does airborne ammonia contribute to nitrogen levels in our nation's water, but it also helps produce acid

³⁵ Marks, *supra* note 10, at 4.

³⁶ Marks & Knuffke, *supra* note 16, at 3.

³⁷ Proposed CAFO Regulations, 66 Fed. Reg. at 2984.

³⁸ *Id.*

³⁹ *Id.* at 2980.

⁴⁰ El-Ahraf, *supra* note 17, at 3.

⁴¹ *Id.*

⁴² Marks & Knuffke, *supra* note 16, at 4.

⁴³ Miner, *supra* note 21, at 18.

⁴⁴ Proposed CAFO Regulations, 66 Fed. Reg. at 2978.

rain.⁴⁵ While ammonia is easily detected, it can be lethal at high doses.⁴⁶ It is also a nasal and respiratory irritant.⁴⁷ Hydrogen sulfide is most commonly associated with the decomposition of swine manure.⁴⁸ The gas is the most toxic of the three, and is even more dangerous because it may fatigue the sense of smell.⁴⁹

Prolonged exposure to any of these three gases may cause serious health problems in animals and humans. In animals, these gases may lead to decreased resistance to diseases, back curvature, hoof problems, and hemophilic tendencies.⁵⁰ There are serious health implications for humans as well. Air pollution from CAFOs is linked to human health effects, including increases in acute or chronic respiratory problems and gastrointestinal health problems.⁵¹ For example, over fifty families in Renville County, Minnesota were treated for "nausea, vomiting and other flu-like symptoms associated with toxic hydrogen sulfide gas."⁵² The families lived near seventeen factory hog farms, and the state determined that at more than one-half of the farms tested, the levels of hydrogen sulfide exceeded the state standard by as much as a factor of fifty.⁵³

Next, neighboring communities suffer from horrible odors emitted by CAFOs. The EPA recognizes that odor does have an impact on human health "because of its documented effect on moods, such as increased tension, depression, and fatigue."⁵⁴ Recent studies have found that psychological stress in residents near hog factories is related to frequent exposure to intense odors from CAFOs.⁵⁵ This also causes tension in communities with CAFOs, as the public has become less tolerant of the odor in their neighborhood, and more conscience of its impact on property values.

D. Disease-Causing Pathogens Are a Serious Health Problem Associated with CAFO Waste

Pathogens such as bacteria and viruses that cause diseases are also problems associated with CAFO waste. Pathogens are the leading cause of the impairment of estuaries and the second leading cause of the impairment of rivers and streams.⁵⁶ They can cause serious health problems in both humans and animals.

⁴⁵ Miner, *supra* note 21, at 18.

⁴⁶ El-Ahraf, *supra* note 17, at 5.

⁴⁷ Proposed CAFO Regulations, 66 Fed. Reg. at 2984.

⁴⁸ Marks & Knuffke, *supra* note 16, at 5.

⁴⁹ El-Ahraf, *supra* note 17, at 5.

⁵⁰ *Id.*

⁵¹ K. J. Donham, *Respiratory Disease Hazards to Workers in Livestock and Poultry Confinement Structures*, 14 Sem. Resp. Med. 49 (1993).

⁵² Marks & Knuffke, *supra* note 16, at ix.

⁵³ *Id.*

⁵⁴ Proposed CAFO Regulations, 66 Fed. Reg. at 2984.

⁵⁵ S.S. Schiffman, et al., *The Effect of Environmental Odors Emanating from Commercial Swine Operations on Mood of Nearby Residents*, 37 Brain Research Bulletin 369-75 (1997).

⁵⁶ Proposed CAFO Regulations, 66 Fed. Reg. at 2977.

Some of the organisms that may cause diseases include salmonella, listeria, vibrio, brucella, cryptosporidium, coxiella, chlamydia, and mycoplasma.⁵⁷ In fact, according to the EPA, [o]ver 150 pathogens found in livestock manure are associated with risks to humans.⁵⁸ These diseases are transmitted by drinking contaminated water, eating shellfish, contact through recreational activity, or by insects such as flies and mosquitoes. For example, there have been reported cases of chickens dying of salmonellosis, where flies transferred the disease from the chickens' manure to their food source.⁵⁹ Additionally, many CAFOs are widely impacted by diseases; there are few areas where these pathogens are not present. This was illustrated by a 1998 Center for Disease Control and Prevention study that found pathogens in the manure lagoons, drainage ditches and wells, tile line inlets and outlets, and an adjacent body of water.⁶⁰

While surface water is usually more susceptible to pathogens, groundwater can also be contaminated. In a 1997 report, the U.S. General Accounting Office found that 6% of public wells had bacterial levels above the acceptable limits, while 42% of private wells were above the limit.⁶¹ In 1993, cryptosporidium, an organism common in calf manure, was responsible for 100 deaths and 400,000 illnesses in Milwaukee.⁶² Pathogens can cause health problems in humans just through contact from recreational activities such as swimming. Common health effects include intestinal illnesses, skin rashes, and infections of the ear, nose, and throat.⁶³

Studies have shown that pathogens from CAFO waste are a serious threat to our health. While human waste is carefully treated before being released into the environment, most CAFO waste is stored in lagoons (where more toxins are produced through anaerobic processes) or applied as fertilizer. CAFO regulations must effectively deal with these pathogens by carefully regulating release of waste into our water bodies.

E. Hormones Added to Livestock Feed Are Being Released into the Environment

Hormones are used in the beef and dairy industry to increase production and efficiency. The most common hormones found in manure include estrogen and testosterone. These endocrine disrupters may cause decreased fertility, mutations, or even death in animal populations.⁶⁴ In addition to its impact on wildlife,

⁵⁷ Marks, *supra* note 10, at 4.

⁵⁸ Proposed CAFO Regulations, 66 Fed. Reg. at 2977.

⁵⁹ El-Ahraf, *supra* note 17, at 21.

⁶⁰ Proposed CAFO Regulations, 66 Fed. Reg. at 2977.

⁶¹ *Id.*

⁶² Marks, *supra* note 10, at 4.

⁶³ Proposed CAFO Regulations, 66 Fed. Reg. at 2983.

⁶⁴ *Id.* at 2981.

estrogen has been linked with cancer in humans.⁶⁵ This is yet another reason for the EPA to strictly control CAFO waste.

The health and environmental impacts of CAFO waste are staggering. Animal and plant life in areas surrounding CAFOs is in jeopardy. Additionally, impacts on human health continue to worsen. Incidents of disease and cancer are often greater near CAFOs.⁶⁶ Studies have shown that CAFO pollution even adversely impacts human behavior.⁶⁷ While the EPA recognizes these problems, it has not done nearly enough to solve them. The remainder of this Comment will address the shortfalls in the EPA's permitting plans for CAFOs.

II. ALL CAFOs SHOULD BE REQUIRED TO ACQUIRE INDIVIDUAL NPDES PERMITS

In the proposed CAFO regulations, the EPA has consistently expressed its concern over the continued concentration of livestock operations, and the adverse health impacts created by waste discharges. Yet, the proposed regulations specify that the majority of CAFOs may be appropriately covered under an NPDES general permit.⁶⁸ These regulations do not sufficiently address the public interest and the EPA should consider an alternative course of action. General permits are inappropriate and inadequate for large CAFOs. General permits neither effectively control pollution nor provide for adequate public participation. Additionally, Congress has not expressly authorized general permitting for CAFOs. Therefore, all CAFOs with more than 1,000 animal units should be required to acquire individual NPDES permits.⁶⁹

A. General Permits Deny Meaningful Public Involvement in the NPDES Process

A core component of the CWA is the opportunity for meaningful public involvement. Congress recognized the importance of this public involvement in its declaration of goals and policy, stating in relevant part that “[p]ublic participation in the development, revision, and enforcement of any regulation . . . shall be provided for, encouraged, and assisted by the Administrator and the States.”⁷⁰ Under the NPDES program, public participation is required, and a permit may only be issued “after opportunity for public hearing.”⁷¹ In light

⁶⁵ El-Ahraf, *supra* note 17, at 118.

⁶⁶ *Id.*

⁶⁷ See Marks & Knuffke, *supra* note 16, at 3.

⁶⁸ Proposed CAFO Regulations, 66 Fed. Reg. at 3042.

⁶⁹ 40 C.F.R. § 122.28(b)(3) (2001).

⁷⁰ 33 U.S.C. § 1251(e) (1994) (emphasis added).

⁷¹ 33 U.S.C. § 1342(a)(1) (1994).

of these provisions, the EPA should take special care to promote and facilitate public involvement in the NPDES permitting process.

1. Potential Effects of CAFOs on Communities

Public involvement at every level of the permitting process is especially important in the CAFO context because of the high public interest and potential harm to communities, human health, and the environment associated with CAFOs. CAFOs have the potential to greatly affect a community in several substantial ways. First, human health is at risk due to animal waste pollution. Health problems are caused by pathogens and nitrogen present in animal waste.⁷² Recent studies have found that psychological stress in residents near hog factories is related to frequent exposure to intense odors from CAFOs.⁷³ In addition, odor and associated air pollution from hog factories is linked to human health effects, including increases in acute or chronic respiratory problems and gastrointestinal health problems.⁷⁴ Last, the intensive use of antibiotics to promote growth in some livestock has led to concerns about antibiotic resistant bacteria threatening human health.⁷⁵

In sum, one farmer detailed the problems associated with CAFOs in his community as: 1) inadequate land to dispose of animal wastes; 2) odor; 3) potential water contamination; 4) displacement of independent family farmers; 5) disruption of community relationships; and 6) lack of responsive and effective state policy.⁷⁶

2. Individual Permits Provide for More Meaningful Participation by the Public in the NPDES Process

Because of the high potential for drastic and long-term effects, individuals and communities should be afforded a meaningful opportunity to participate in the permitting process. Individual permits allow for more significant public involvement than general permits, and should therefore be required for the issuance of all CAFOs with more than 1,000 animal units.

⁷² V.R. Hill & M. Sobsey, *Microbial Indicator Reductions in Alternative Treatment Systems for Swine Wastewater*, 38 WATER SCIENCE AND TECHNOLOGY 119, 120 (1998).

⁷³ Schiffman, *supra* note 55, at 369-75.

⁷⁴ Donham, *supra* note 51, at 49.

⁷⁵ Laura L. Jackson, *Large-Scale Swine Production and Water Quality*, in PIGS, PROFITS, AND RURAL COMMUNITIES 103, 110 (Kendall M. Thu & E. Paul Durrenberger eds., State University of New York Press 1998).

⁷⁶ Blaine Nickles, *An Iowa Farmer's Personal and Political Experience with Factory Hog Facilities*, in PIGS, PROFITS, AND RURAL COMMUNITIES 123, 136 (Kendall M. Thu & E. Paul Durrenberger eds., State University of New York Press 1998).

The EPA regulations specify detailed notice and hearing requirements for the issuance of all permits.⁷⁷ These regulations require the Administrator to give public notice that includes background information on the issuing authority and the applicant, lists a contact for more information, describes the public comment procedures, states the time and place of any scheduled public hearing, and allows for the request of a public hearing.⁷⁸ The public notice is mailed to a list of interested individuals, governments, and organizations with jurisdiction over the area potentially affected by the permit. The public is then given a minimum 30-day period to consider the draft permit and make comments on the proposal.⁷⁹ Following this period, the Administrator of the permit is required to respond to each of the comments before it takes any action.⁸⁰ This is a valuable process for the public and the Administrator alike, because it allows the public to be involved while ensuring that the issuance of the permit is both the best course of action, and that the permit is complete and thorough. It is not uncommon for the Administrator to make changes to the permit based on the comments that it receives.

For individual permits, this process is required for each CAFO, affording the public an opportunity for precise and unambiguous comment. Individual permits for CAFOs are, therefore, preferable to general permits for several reasons. First, an individual permit provides a community the right to comment on a CAFO before it locates into its neighborhoods. For an individual permit, the individuals, organizations, and governments that will be directly affected by the presence of a CAFO are notified before the issuance of a permit. This provides those that are most concerned and affected by the presence of the new CAFO the opportunity to carefully consider the specific benefits and impacts that it will have on their community before it is allowed to operate. It is still possible at this stage of the process for an individual permit that will be, based on the public response, significantly changed or denied altogether.

In contrast, general permits deprive specific communities the opportunity to meaningfully participate in the permitting process for a new CAFO. Rather than provide notice to an affected community of the pending application of a CAFO, the process for a general permit informs a broad geographic area of the requirements universally applicable to all potential and unspecified CAFOs. This process only provides the opportunity to comment generally on the minimum requirements for CAFOs; it does not allow a community to consider if a specific CAFO should locate there at all. Individuals, organizations, and local governments are less likely to take note of and participate in the issuance of a general permit because they do not have an identifiable direct stake in the outcome of the permit.

⁷⁷ See 40 C.F.R. § 124 (2001).

⁷⁸ *Id.*

⁷⁹ 40 C.F.R. § 124.10(b).

⁸⁰ 40 C.F.R. § 124.17(a).

Second, the opportunity to comment on specific CAFO permits has become increasingly important to communities across the country. There are currently citizen groups addressing CAFO issues in over thirty states.⁸¹ For example, in California several citizen groups have mobilized to address water quality issues. One such group, Delta Keeper, has volunteers twice a week to assist enforcement and regulatory agencies with monitoring and testing for illegal dairy discharges.⁸² Because of the interest, involvement, and public outcry surrounding CAFOs, only the more rigorous factual investigation and scrutiny of public participation and review in the individual permitting process is sufficient to ensure adequate permit conditions.

Third, the EPA recognizes certain criteria that are important in determining if a permit is appropriate for a general permit.⁸³ Among those criteria is the condition that all of the sources within the subcategory of discharges “[r]equire the same or similar monitoring.”⁸⁴ The reasoning behind this requirement is that if individual sources within a subcategory require different monitoring, then each source should be issued an individual permit in order to sufficiently address the unique monitoring requirements. CAFOs are extremely variable in nature, and therefore require substantially different monitoring in order to adequately protect the adjacent waters of the United States. For example, a CAFO that was located adjacent to a wetland or on a flood plain will require substantially different monitoring requirements than one that is located on a hill. Thus, CAFOs do not meet the criteria that the EPA has recognized as important for identifying subcategories that are appropriate for general permits.

Finally, an individual permit is preferable to a general permit because an individual permit allows the EPA or the Administrator to set site-specific terms to protect human health or the environment. Public participation in the NPDES permitting process is designed to provide the permitting agency with the fullest set of facts for review of permit applications. Public participation yields substantially superior information regarding the potential water quality impacts of the particular facility because comments are likely to come from local individuals, organizations, and governments with detailed knowledge of the site, including the location of surface or ground waters that do not necessarily appear on maps, the history of any compliance issues at other facilities operated by the applicant, and the need for site-specific provisions. In an individual permit, this site-specific information can be used to design appropriate monitoring or reporting requirements, or to impose specific design or operational permit limitations. Individual permits can allow for the evaluation and accounting of the suitability of the land for the application of manure, including the soil and subsoil

⁸¹ See generally Marks & Knuffke, *supra* note 16.

⁸² *Id.* at 19.

⁸³ 40 C.F.R. § 122.28(a)(2).

⁸⁴ 40 C.F.R. § 122.28(a)(2)(I)(D).

permeability, the presence of aquifers, the vulnerability of groundwater resources, soil slope, irritability, the land use of proposed disposal sites and surrounding land uses, and the existence of water withdrawals downstream of the proposed disposal site.⁸⁵ Site-specific permit terms might, for example, require the siting of a manure storage facility in the least ecologically vulnerable location on a property, despite the owner's plans to put it elsewhere.⁸⁶

B. Individual Permits Should Be Required to Protect Water Quality

Sections 302 and 303 of the CWA⁸⁷ outline the steps the states and the EPA must take to establish water quality standards and to utilize them in setting facilities' permit limitations. Water quality standards must reflect two conditions: 1) the designated uses of the waters involved; and 2) the water quality criteria necessary to attain and maintain each designated use. Section 303(b)(1)(C) of the CWA⁸⁸ requires that necessary measures be taken by the EPA and the states to ensure that water quality standards are met. Further, regulations promulgated under the CWA require that "[e]xisting instream water uses and the level of water quality necessary to protect the exiting uses shall be maintained and protected."⁸⁹

The EPA has recognized that "the agricultural sector . . . is the leading contributor to identified water quality impairments in the nation's rivers and streams."⁹⁰ CAFOs are a significant part of this problem. Because of the nature of the facilities, CAFOs present a high potential for impairment of water quality. Containment dams, berms, or lagoons may fail and spill some or all of their contents into adjacent waters. For example, in 1995, "22 million gallons of swine waste spilled into a tributary of the New River, killing fish and shellfish along nineteen miles of rich estuarial habitat, destroying cropland in its path."⁹¹ It is, therefore, important that the EPA be cautious when issuing permits to CAFOs to ensure that the water quality and the designated uses of the adjacent waters are not impaired.

Unlike individual permits, general permits do not take into account the water quality and designated uses of the particular waters surrounding a proposed CAFO. Instead, a general permit covers all CAFOs that meet given criteria within a broad geographic region, regardless of the specific location, soil conditions, or other characteristics. Provided that a proposed CAFO meets the broad criteria, it can operate under the general permit without specifically considering the water quality and designated uses of adjacent waters of the United States. Many CAFOs

⁸⁵ Marks & Knuffke, *supra* note 16, at 146-47.

⁸⁶ *Id.*

⁸⁷ 33 U.S.C. §§ 1312-1313.

⁸⁸ 33 U.S.C. § 1311(b)(1)(C).

⁸⁹ 40 C.F.R. § 131.12(a)(1) (2001).

⁹⁰ Proposed CAFO Regulations, 66 Fed. Reg. at 2972-73.

⁹¹ Jackson, *supra* note 75, at 106.

are located in floodplains, converted wetlands, adjacent to wetlands and surface waters, and on agricultural fields with surface drainage ditches. Wet weather frequently saturates sprayfields producing huge amounts of discharges of animal waste to surface waters. This can lead to impairment of water quality.

For example, in Oktoc, Mississippi, a CAFO was permitted to locate adjacent and upstream of the Noxubee Wildlife Refuge.⁹² The refuge is a bottomland hardwood forest that is home to several endangered species, including waterfowl. A Mississippi State University researcher found that two species of salamanders would be put in jeopardy by the hog farm pollution, and that turkey vultures at the refuge would be confused by odors from the lagoon. Thus, because of the operation of a CAFO in the vicinity, waters that would normally qualify as "waters of exceptional recreational or ecological significance" were not "maintained and protected," as required by the CWA.⁹³ The use of individual permits for all CAFOs over 1,000 animal units can help solve this problem because individual permits allow the permit writer to consider site-specific challenges and solutions. In contrast, general permits offer few opportunities to ensure stricter pollution controls.

1. Individual Permits Should Be Issued for All CAFOs With Over 1,000 Animal Units in Order to Impose Protective Monitoring and Reporting Requirements

An individual NPDES permit obliges the EPA to impose monitoring and reporting requirements necessary to protect the water quality of the surrounding waters.⁹⁴ The CWA gives the EPA the authority to require CAFOs to establish and maintain records, make reports, install and use monitoring equipment, sample effluents, and provide other reasonably necessary information.⁹⁵ Under EPA regulations, "[s]amples and measurements taken for the purpose of monitoring shall be representative of the monitored activity."⁹⁶ Individual permits allow the EPA to impose meaningful monitoring requirements that both protect water quality, and produce records and reports useful for gauging compliance. For example, most industries that are issued NPDES permits must monitor receiving waters and periodically report the results to the EPA. Many CAFOs that operate under general permits, however, are not currently obligated to perform this task.⁹⁷ All CAFOs over 1,000 animal units should be required through individual permits to monitor surface waters that run through or adjacent to the facility at points

⁹² Maureen Hinkle, *Summary of Oktoc Controversy*, NATIONAL AUDUBON SOCIETY; Marilyn Berlin Snell, *Downwind in Mississippi*, SIERRA 22 (March/April 2001).

⁹³ See 40 C.F.R. § 131.12(a)(3) (2001).

⁹⁴ See *Environmental Defense Fund, Inc. v. Costle*, 439 F. Supp. 980, 1003 (E.D.N.Y. 1977); 33 U.S.C. § 1311 (b)(1)(C) (2001).

⁹⁵ 33 U.S.C. § 1318(a).

⁹⁶ 40 C.F.R. § 122.41(j) (2001).

⁹⁷ See Marks & Knuffke, *supra* note 16.

immediately above and below the facility. This would provide valuable information about the facility's compliance with the effluent limitation and its contribution to water pollution. Additionally, this would impose more protective monitoring and reporting requirements that are not possible under a general permit and that are necessary to preserve water quality.

C. CAFOs Do Not Fall Under Any Exception to the Clean Water Act's Requirement for Individual Permits

Congress has expressly provided for exceptions to the rule that individual permits are required under the CWA, and CAFOs do not fit within these exceptions. Therefore, the EPA should require individual permits for all CAFOs with over 1,000 animal units.

Only two sections of the CWA explicitly allow for general permits. Section 402 of the CWA allows permits for municipal stormwater discharges to "be issued on a system or jurisdiction-wide basis."⁹⁸ Section 404 of the CWA explicitly allows general permits for wetlands for "any category of activities involving discharges of dredged or fill material if the Secretary determines that the activities in such category are similar in nature, will cause only minimal adverse environmental effects when performed separately, and will have only minimal cumulative adverse effect on the environment."⁹⁹

The CWA contains no similar explicit exception for CAFOs. Additionally, allowing general permits for a majority of CAFOs would directly conflict with the safeguards inserted into the CWA minimizing environmental degradation from general permits for wetland discharges. In section 404, Congress has outlined guidelines, such as "minimal adverse environmental effects," and "minimal cumulative adverse effect[s] on the environment," for determining whether to issue a general permit.¹⁰⁰ No such guidelines are present in the proposed CAFO regulations. Further, if they were present, they would preclude the EPA from issuing general permits in most instances. Clearly, the aggregate effect of CAFOs on the environment is enormous, and their adverse effects are more than "minimal." Even separately, CAFOs exact a heavy toll on the surrounding environment, and often cause site-specific effects. Thus, general permits would offer little protection from adverse environmental effects.

Congress has not explicitly authorized general permitting for CAFOs. Additionally, the adverse effects of CAFOs seem to preclude it from general permitting. Therefore, the EPA should require individual permits for CAFOs.

⁹⁸ 33 U.S.C. § 1342(p)(3).

⁹⁹ 33 U.S.C. § 1344(e)(1).

¹⁰⁰ *Id.*

D. Due to the Significant Adverse Environmental Effects of CAFOs, Individual Permits Should Be Required for all CAFOs with Over 1,000 Animal Units

Because of the potential hazard that CAFOs present, and the substantial advantages of individual permits over general permits, individual permits should be required for all CAFOs with over 1,000 animal units.

As the EPA recognizes, in the last twenty years there has been a “trend toward fewer but larger operations coupled with greater emphasis on more intensive production methods and specialization.”¹⁰¹ For example, the number of hog operations has fallen from 600,000 to 157,000, while the number of hogs produced has stayed roughly the same.¹⁰² This trend has resulted in a significant increase in the concentration and quantity of manure that is generated at a single site.¹⁰³ Requiring individual permits for all large CAFOs over 1,000 animal units would allow the EPA to more carefully regulate and monitor the facilities that are responsible for 72% of the waste generated by CAFOs.¹⁰⁴ This would represent a significant step toward protecting the waters of the United States, and would not be overly burdensome.

In the alternative, if the EPA chooses not to initially require individual permits for all CAFOs over 1,000 animal units, then it should obligate each CAFO over 1,000 animal units to establish that it is not an endangerment to water quality before it is allowed to operate under the general permit. This measure would protect water quality while reducing the potential burden to permit authorities.

E. If the EPA Chooses Not to Require Individual Permits for All CAFOs Over 1,000 Animal Units, Then It Should Take Alternative Steps to Ensure Meaningful Public Participation in the Process

In the alternative, if the EPA chooses not to require individual permits for all CAFOs with more than 1,000 animal units, then meaningful changes should be made to facilitate public participation in the process.

If the EPA chooses to allow general permits to be issued for CAFOs, it should exclude all facilities that have historical compliance problems, exclude significantly expanding facilities, and exclude all operations that are located in areas with significant environmental concerns. These facilities should be required to acquire individual permits because they represent an increased danger to human health or the environment. Individual permits should, therefore, be used for these

¹⁰¹ Proposed CAFO Regulations, 66 Fed. Reg. at 2972.

¹⁰² Marks & Knuffke, *supra* note 16, at vii.

¹⁰³ Proposed CAFO Regulations, 66 Fed. Reg. at 2972.

¹⁰⁴ *Id.* at 2997.

subcategories in order to ensure adequate site-specific practices as well as reporting, monitoring, and enforcement provisions.

The EPA has attempted to improve the public participation process for CAFOs operating under a general permit. Specifically, the agency has proposed to add CAFO-specific criteria for when the Director may require an individual permit, and to require the Notice of Intent (NOI) and the notification of Permit Nutrient Plan (PNP) development or amendment to be available to the public in a timely manner.¹⁰⁵ However, these measures must be strengthened in order to provide meaningful public participation. As the new rules are proposed, for many CAFOs, the public would only receive notification and access to the NOI and PNP *after* the new CAFO has already been established and is functional. Further, the proposed rules do not afford the public the opportunity to consider the ramifications and potential impacts of the new facility on its community, or the opportunity to adequately prepare. In addition, it does not give sufficient opportunity for knowledgeable individuals or organizations in the community to suggest provisions and make changes that might be required to protect the water quality of the neighboring water bodies. Thus, even under the proposed rules, the public does not have any meaningful public participation in the permitting process. In order to encourage meaningful public participation as the CWA provides,¹⁰⁶ the EPA should require a public notice and comment period for the NOI and PNP development of any CAFO seeking to operate under a general permit. This would afford the affected community the chance to review, prepare for, and potentially modify the terms under which the new CAFO will operate.

III. THE EPA SHOULD TAKE ADDITIONAL STEPS TO ENSURE THAT LEACHATE FROM CAFOs DOES NOT CONTAMINATE GROUNDWATER

Nitrates from CAFO waste contaminate drinking wells. Nitrates are water-soluble and move easily through the soil, and are, therefore, susceptible to leaching, especially when soil nitrogen is high and the amount of nitrogen applied exceeds the needs of the crops. Many studies have linked nitrate concentrations in groundwater to agricultural land use.¹⁰⁷ The concentration of nitrate is important because many individuals and communities rely on groundwater as an important source of drinking water. Contaminated groundwater, therefore, translates into contaminated drinking water. In one study, 10% of the wells near CAFOs in a North Carolina community had abnormally high levels of nitrates.¹⁰⁸ Further, wells located below CAFO sprayfields had nitrate levels of 10-50 parts

¹⁰⁵ *Id.* at 3043.

¹⁰⁶ 33 U.S.C. § 1251(e).

¹⁰⁷ See, e.g., W.F. Ritter & A. E. M. Chirside, *Impact of Land Use on Groundwater Quality in Southern Delaware*, 22 GROUND WATER 38B47 (1984).

¹⁰⁸ A. Dennis McBride, *The Association of Health Effects With Exposure to Odors from Hog Farm Operations* (North Carolina Department of Health and Human Services 1998).

per million, above the public health safety level of ten parts per million.¹⁰⁹ Because high levels of nitrate are dangerous to humans, the EPA should take steps to ensure that leachate from CAFOs does not contaminate groundwater.

Although the EPA has attempted to address this problem,¹¹⁰ the proposed regulations do not go far enough to adequately ensure that the public is protected from the ill health effects of groundwater and drinking water contamination. The EPA should, therefore, require monthly monitoring of groundwater down-gradient of the facilities to ensure that pollutants are not entering the system and threatening the health of neighboring residents. Further, these monitoring reports and records should be periodically submitted to the EPA or the permitting state agency to assist in its compliance monitoring and in public oversight of the operations.

Finally, the proposed regulations divide the process for establishing provisions for the protection of groundwater based on the category of CAFO.¹¹¹ Rather than establish separate guidelines for each of these CAFOs, the EPA should presume for all categories that there is a direct hydrologic connection to surface water. This would require the permittee to either achieve zero discharge from the CAFO via ground water and perform the required ground water monitoring, or to provide a hydrologists statement that there is no direct connection of groundwater to surface water at the facility.

IV. APPLICATION OF THE AGRICULTURAL STORMWATER EXEMPTION PROVIDES A LOOPHOLE THROUGH WHICH CAFOs CAN DISCHARGE WASTE WITHOUT A PERMIT

The EPA has continuously recognized that CAFO waste poses serious health and environmental threats. This problem has reached critical levels, as agriculture has moved toward large confinement operations that have become “increasingly industrialized.”¹¹² As discussed, in just over fifteen years, the number of hog farms in this country has dropped from 600,000 to 157,000, yet the total number of hogs has remained nearly the same over that time period.¹¹³ Approximately fifty pork operations are responsible for about half of our nation’s pork products, while ten poultry operations produce over 90% of the poultry.¹¹⁴ Further, the waste produced by these facilities is astronomical, as livestock and poultry

¹⁰⁹ *Id.*

¹¹⁰ Proposed CAFO Regulations, 66 Fed. Reg. at 3015; see 40 C.F.R. § 412 (2001).

¹¹¹ Proposed CAFO Regulations, 66 Fed. Reg. at 3015.

¹¹² Susan Schell, Casenote, *The Uncertain Future of Clean Water Act Agricultural Pollution Exemptions*, 31 LAND AND WATER L. REV. 113, 124 (1996).

¹¹³ Marks & Knuffke, *supra* note 16, at vii.

¹¹⁴ *Id.*

produce nearly five tons of manure annually for every resident of the United States.¹¹⁵

While the EPA has recognized the problem, its application of the agricultural stormwater exemption is not an adequate solution. By opening the agricultural stormwater exemption to CAFO-generated manure that is land applied “in accordance with proper agricultural practices,”¹¹⁶ the EPA is creating a huge loophole through which CAFOs can continue to discharge waste into our waterbodies. This “escape hatch” would allow CAFOs to avoid their no discharge standard, clearly at odds with section 101 of the CWA.¹¹⁷ In essence, the land application of manure is waste disposal and should be treated as such.

The EPA appears to have taken this distinction into consideration, as its proposed CAFO regulations stipulate a two prong test that a discharge must meet to fall under the agricultural stormwater exemption, including being composed entirely of stormwater and mandating that manure be applied “in accordance with proper agricultural practices.”¹¹⁸ However, it is the EPA’s interpretation of “proper agricultural practices”¹¹⁹ that raises serious doubts as to whether enough monitoring and enforcement will be required to effectively limit overapplication of manure and the pollution that results from that practice. Additionally, there is considerable doubt, looking to both the structure of the CWA and the courts’ interpretations of it, that the stormwater exemption is even applicable to CAFOs. For these reasons, the EPA should close the agricultural stormwater exemption for CAFOs and require a permit for any discharge from the land application process.

A. The Clean Water Act Requires a Permit for Agricultural Discharge

The CWA stipulates that, except as in compliance with permitting and various other provisions of the Act, “the discharge of any pollutant by any person shall be unlawful.”¹²⁰ The term pollutant includes “agricultural waste discharged into water.”¹²¹ Discharge of pollutants is defined as any addition of pollutants from a point source into navigable waters.¹²² The CWA defines a point source as “any discernable, confined and discrete conveyance, including but not limited to any . . . *concentrated animal feeding operation*, or vessel or other floating craft, from which pollutants are or may be discharged.”¹²³

¹¹⁵ Tom Horton, *Hog Farm’s Waste Poses a Threat*, BALTIMORE SUN, January 1, 1999, at 2B.

¹¹⁶ Proposed CAFO Regulations, 66 Fed. Reg. at 3029.

¹¹⁷ Kristen Mollnow, Note, *Concerned Area Residents v. Southview Farms*, 60 ALB. L. REV. 239, 253–56 (1996).

¹¹⁸ See Proposed CAFO Regulations, 66 Fed. Reg. at 3135.

¹¹⁹ *Id.* at 3142–44 (proposing 40 C.F.R. § 412.31(b), 412.37).

¹²⁰ 33 U.S.C. § 1311(a).

¹²¹ 33 U.S.C. § 1362(6).

¹²² 33 U.S.C. § 1362(12)(A).

¹²³ 33 U.S.C. § 1362(14) (emphasis added).

The definition of point source was amended in 1977 to exclude “return flows from irrigated agriculture.”¹²⁴ The term point source was further amended in 1987 to exclude agricultural stormwater discharges.¹²⁵ The CWA does not further define agricultural stormwater discharge, either through legislative history or statutory language, nor has the EPA formally interpreted the term. The confusion and complexity surrounding this issue results from the explicit inclusion of CAFOs within the definition of point source, and a seemingly contradictory agricultural stormwater exception excluding some activities from falling within the point source definition.

The EPA has attempted to reconcile these provisions with its proposed CAFO regulations. While a clear definition of the agricultural stormwater definition may not be immediately evident from the structure of the Act, looking to the preamble of the EPA’s proposed CAFO regulations, the EPA appears to be making a distinction between pure stormwater runoff that may include elements of properly applied manure as fertilizer and runoff consisting of manure applied as waste. If so, this distinction would at least be consistent with a narrow reading of the holding in *Concerned Area Residents for the Environment (CARE) v. Southview Farm*,¹²⁶ as well as other existing case law on this issue.¹²⁷ However, the EPA’s proposed regulations seem to conflict with its own interpretation, the courts’ interpretations, and the purpose of the CWA.

1. CAFOs as an Agricultural Source

Excluding both the EPA’s and the court’s interpretation of the Act, it could be argued that the very structure and purpose of the CWA seems to suggest, at most, an extremely narrow application of the stormwater discharge exemption to CAFO activities, with the complete exclusion of these activities from the exemption as another possibility. The term pollutant explicitly includes agricultural waste. While some agricultural activities are clearly considered nonpoint sources under the CWA, there is no doubt of Congress’ intention of classifying CAFOs as point sources.

(a) Conflicting Language within the Point Source Definition Suggests Only a Narrow Application of the Agricultural Stormwater Exemption to CAFOs

The presence of CAFOs in the definition coupled with the stormwater exemption suggests that the exemption should only be narrowly applied to CAFOs where a regulatory scheme exists to ensure that only storm runoff, not

¹²⁴ Pub. L. No. 95-217, § 33, 91 Stat. 1566, 1577 (1977) (codified as amended at 33 U.S.C. § 1362(14)).

¹²⁵ Pub. Law. No. 100-4, § 503, 101 Stat 7, 75 (1987) (codified as amended at 33 U.S.C. § 1362(14)).

¹²⁶ 34 F. 3d 114, 123 (2d Cir. 1994), *cert denied*, 514 U.S. 1082 (1995).

¹²⁷ *See, e.g., Maple Leaf Farms, Inc. v. State, Dep’t. Natural Resources*, 633 N.W.2d 270 (Wis. Ct. App. 2001).

CAFO waste, is exempted from classification as a point source. Anything else but a narrow application through appropriately stringent regulations would result in a free pass to discharge pollutants into our waterways. By explicitly including CAFOs within the definition, Congress made clear its intention of classifying CAFOs as a point source. By including the stormwater exemption within the same provision, Congress may have intended it to apply to CAFOs only as it applies to other agricultural activities; that is, to soil erosion caused by precipitation, and not waste runoff caused by overapplication of manure. It is unlikely that Congress meant to further broaden these exemptions "and still hope to meet the objectives of the Act."¹²⁸

(b) Explicit Inclusion of CAFOs within the Definition of Point Source Suggests the Stormwater Exemption Does Not Apply to CAFOs

While it appears clear that CAFOs should receive no more than a narrow application of the stormwater exemption, an argument can be made that the stormwater exemption has absolutely no application to CAFOs. While irrigation returns and pure storm runoff are exempted from classification as a point source, "[t]he fact that Congress has twice exempted specific agricultural discharges from point source regulation suggests that other agricultural discharges meeting the definitional requirements do constitute point sources within the purview of the CWA."¹²⁹ Broadening the scope of the agricultural stormwater exemption to land-applied CAFO waste seems to contradict the very fact that CAFOs are considered point sources under the Act.

2. CAFOs as an Industrial Source

An alternative argument that CAFOs should be considered an industrial source also points to the conclusion that the agricultural stormwater exemption is inapplicable to CAFOs. The specific inclusion of CAFOs within the definition of point source along with the agricultural stormwater exemption may indicate a Congressional intention to classify CAFO discharges as industrial rather than agricultural, an interpretation that the EPA has expressed a willingness to consider.¹³⁰ Under this interpretation, a discharge, even one that may have been caused by a storm, would be subject to the Act's stormwater discharge provisions.¹³¹ This interpretation would seem to best reconcile the apparent conflict created by including CAFOs as a point source, but excluding agricultural stormwater runoff in the same definition.

¹²⁸ Schell, *supra* note 112, at 124.

¹²⁹ *Id.*

¹³⁰ Proposed CAFO Regulations, 66 Fed. Reg. at 3031.

¹³¹ See 33 U.S.C. §§ 1311, 1342.

Additionally, this interpretation seems consistent with the reality of the trend toward large-scale, industrial-like CAFO operations. As J.B. Ruhl, Professor of Law at Florida State University School of Law recently noted, many scholars believe that within the “farm industry lie identifiable and manageable sectors, such as CAFOs and large crop irrigation farms, which ought to be treated as industrialized operations no different than refineries or steel mills.”¹³²

Looking to the structure and purpose of the CWA, Congress’ intention to regulate CAFOs as a point source seems clear. Classifying CAFO discharges as industrial seems to reconcile otherwise possible conflicting language within the definition of point source. However, even if CAFO discharges are classified as agricultural, the language of the CWA suggests no more than a narrow application of the agricultural stormwater exemption.

*B. Court Interpretations Suggest a Narrow Application of
the Stormwater Discharge Exemption*

While there is little case law available that defines the scope of the agricultural stormwater exemption as applied to CAFOs, the existing case law seems to be consistent with a very narrow application of the exemption. The EPA appears to base much of its reasoning for the promulgation of a regulation defining the agricultural stormwater exemption on this case law, yet the practical application of the new regulations would provide a loophole to discharge waste through the exemption that well exceeds the court’s narrow interpretation.

The Second Circuit’s ruling in *Southview Farm*¹³³ is the primary case interpreting the scope of applicability of the agricultural stormwater exemption to CAFOs. In *Southview Farm*, plaintiffs CARE, a group of land owners, filed a citizens’ suit against *Concerned Area Residents for Environment v. Southview Farm*, one of the largest dairy operations in New York with over 2,200 animals.¹³⁴ The farm used manure generated by its dairy operation to fertilize its 1,100 acres of crops.¹³⁵ The citizen suit alleged that liquid manure from the farm was discharging into the adjacent Genesee River in violation of the CWA.¹³⁶ After a jury found in favor of CARE on five CWA violations, the district court granted Southview’s motion for judgment as a matter of law on all five violations.¹³⁷ On appeal, the Second Circuit reversed the decision of the district court.

In reaching its decision, one of the issues before the Second Circuit was whether the agricultural stormwater exemption applied to Southview’s alleged

¹³² J.B. Ruhl, *Farms, Their Environmental Harms, and Environmental Law*, 27 *ECOLOGY L.Q.* 263, 335 (2000).

¹³³ 34 F.3d 114 (2d Cir. 1994).

¹³⁴ *Id.* at 115–16.

¹³⁵ *Id.* at 116.

¹³⁶ *Id.* at 117.

¹³⁷ *Id.* at 116.

violations. According to the court, "the real issue is not whether the discharges occurred during rainfall or were mixed with rain water run-off, but rather, whether the discharges were the result of precipitation."¹³⁸ The court held that the jury was reasonable in finding that the exemption did not apply, as the evidence supported a finding that "run-off was primarily caused by over saturation of the fields rather than rain and . . . could not be classified as 'stormwater.'"¹³⁹ Here, the court determined that these discharges were more than just erosion, and outside of the scope of the exemption.

This interpretation of the agricultural stormwater exemption was followed by the District Court for the Eastern District of Washington in *Community Association for Restoration of the Environment v. Sid Koopman*.¹⁴⁰ Holding that the defendants' dairy farms were CAFOs and thus point sources under the CWA, the court stated that the stormwater exemption "does not act to relieve CAFO farmers from responsibility for over applications and misapplications of CAFO animal wastes to fields in amounts or locations which will then discharge into the waters of the United States."¹⁴¹

Looking to the holdings of *Southview* and *Koopman*, it seems clear that overapplications or misapplications of CAFO-generated manure should not fall within the agricultural stormwater exemption. However, a broader reading of *Southview* indicates that the Second Circuit determined that CAFOs are never subject to any agricultural exemptions. The court agreed that agricultural stormwater runoff has always been considered "nonpoint-source pollution exempt from the Act," and the inclusion of the exemption within the definition of point source just clarified an already accepted policy.¹⁴² However, the court concluded that since CAFOs are specifically defined as point sources, the agricultural stormwater exemption does not apply.¹⁴³

Whether or not the agricultural stormwater exemption should be deemed inapplicable to CAFOs as a matter of law, case law seems clear that the exemption should be limited in its application to CAFOs. In this instance, the question becomes whether the EPA can implement regulations that distinguish between pure storm runoff and waste runoff caused by the misapplication or overapplication of CAFO-generated manure.

¹³⁸ *Id.* at 120–21.

¹³⁹ *Id.* at 121.

¹⁴⁰ 54 F. Supp. 2d 976 (E.D. Wash. 1999).

¹⁴¹ *Id.* at 981.

¹⁴² *Southview Farms*, 34 F.3d at 122.

¹⁴³ *Id.* at 123.

C. The EPA's Proposed Regulations Do Not Adequately Distinguish Between Stormwater and Wastewater

The EPA's discussion of the land application of CAFO-generated manure in the preamble of its proposed CAFO regulations indicates the EPA's awareness of the problems posed by land-applied manure, and their willingness to "improve control of discharges that occur from land applied manure and wastewater."¹⁴⁴ However, the EPA's regulations fall short of distinguishing between storm runoff and waste runoff, opening a loophole for manure discharges.

This loophole is created by the very definition proposed for the agricultural stormwater exemption. The definition states that a discharge composed entirely of stormwater from a land area where manure has been applied according to "proper agricultural practices" may qualify within the exemption, thereby excluding the discharge from the permit requirements under point source discharges.¹⁴⁵ This term is defined to include land application of manure at a specific rate and the development and implementation of a PNP.¹⁴⁶

The proposed PNP regulations do include some strong provisions aimed at preventing waste runoff caused by CAFO-generated land applied manure. First, the EPA should be commended for proposing that CAFOs that may fall within the agricultural stormwater exemption must still apply for an NPDES permit.¹⁴⁷ This holds true even if the CAFO's only discharges may potentially fall within the exemption.¹⁴⁸ Additionally, the proposed PNP regulations place great emphasis on site-specific plans. The regulations establish methods by which the allowable manure application rate should be calculated.¹⁴⁹

While the proposed regulations include some beneficial guidelines, it is essential that they be backed with strong compliance standards. However, a lack of public participation in the process, inefficient reporting and monitoring requirements, and the absence of the permitting authority in the plan development process serves to weaken the effectiveness of the regulations and opens the door to unregulated discharges through the agricultural stormwater exemption.

1. Lack of Meaningful Input, Enforcement, and Monitoring by Permit Authority

One of the major problems with the PNP process is the lack of input by the permit authority in developing the plans. As the EPA states in the preamble, "CAFO owners and operators are ultimately responsible for developing and

¹⁴⁴ Proposed CAFO Regulations, 66 Fed. Reg. at 3029.

¹⁴⁵ See *id.* at 3135-39 (proposing 40 C.F.R. § 122.23(a)(1)).

¹⁴⁶ See *id.* at 3142-44 (40 C.F.R. § 412.31(b) and 412.37).

¹⁴⁷ 40 C.F.R. § 122.23(c).

¹⁴⁸ Proposed CAFO Regulations, 66 Fed. Reg. at 3031.

¹⁴⁹ *Id.* at 3042 (proposing 40 C.F.R. § 412.31(b)(1)(iv)).

implementing effective PNPs.”¹⁵⁰ The only stipulation is that a certified specialist approves the plan. The qualification of these specialists varies from state to state, and third party vendors are allowed. While a certified specialist potentially brings expertise to the process, she is no substitute to comprehensive review by a qualified government agency, especially when the regulated entity is responsible for developing and implementing the plan.

To compound the issue, there is no guarantee that a government agency would ever review the PNP, yet this plan could allow a regulated entity to fall within the agricultural stormwater exemption based solely on the assumption that the permittee had developed an effective plan to guard against waste runoff, and was complying with that plan. The proposed regulations require only that the CAFO submit a cover sheet and an executive summary of their draft PNP to the permit authority.¹⁵¹

Not only are the regulated entities responsible for development and implementation of the PNP, they are also entrusted with self monitoring and reporting. The required monitoring would include manure sampling once per year and soil sampling every three years.¹⁵² However, the frequency of testing is inadequate to monitor for possible PNP violations. Additionally, there is no requirement to submit results to any government agency, unless requested, nor is the permit agency required to conduct its own on-site monitoring.

Finally, the lack of involvement by the permit agency, and the great degree of flexibility offered to the states in determining levels of enforcement, could lead to forum shopping by CAFOs in search of the lowest standards. As documented in *America's Animal Factories*, most states already have problems within their regulatory programs under the CWA and do not need incentive to further weaken enforcement.¹⁵³

2. *The PNP Does Not Afford Adequate Public Participation*

Under the proposed regulations for the PNP process, the public would not have the opportunity to comment on the development or implementation of the PNP. Additionally, the EPA has proposed limiting public review of the PNP to the cover sheet and executive summary.¹⁵⁴ This limitation is based on the EPA's concern for information within the PNP potentially protected as confidential business information (CBI).¹⁵⁵ The CAFO operator could choose to make the cover sheet and executive summary available in one of four ways, including: 1) filing these documents at the facility, available upon request by the permit

¹⁵⁰ *Id.* at 3034.

¹⁵¹ *See id.* at 3034 (proposing 40 C.F.R. § 122.21(i)(1)(iv)); 40 C.F.R. § 122.28(b)(2)(ii).

¹⁵² Proposed CAFO Regulations, 66 Fed. Reg. at 3043 (proposing 40 C.F.R. § 412.37(a)(4)(ii)).

¹⁵³ Marks & Knuffke, *supra* note 16, at ix.

¹⁵⁴ Proposed CAFO Regulations, 66 Fed. Reg. at 3038–39 (proposing 40 C.F.R. § 122.23(l)(2)).

¹⁵⁵ *See infra* Part V.A.

authority; 2) filing the documents at the facility, available upon request by any citizen; 3) filing at a public site; or 4) filing with the permit authority.¹⁵⁶

These procedures, along with no public comment requirements at the development stage of the PNP, severely limit the opportunities of involvement available to the public. Under the proposed regulations, the public would be denied complete access to the PNP. Additionally, the CAFO operator would have the option of retaining on site any records required to be made public, making public participation in the process even more difficult. Not only is public participation important for providing an additional level of monitoring and enforcement of regulations, it is also essential in fostering trust and cohesiveness between communities and the CAFO industry. Because of the lack of public involvement in the PNP process, these regulations fail at both levels.

The EPA's proposed regulations dealing with the agricultural stormwater exemption, while offering some strong guidelines, ultimately open a loophole through which waste water from land-applied CAFO manure can be discharged without a permit. Limited agency and public involvement create serious gaps within the regulatory structure that must be remedied if the EPA has any hope of successfully applying the agricultural stormwater exemption and meeting the overall objectives of the CWA.

*F. The EPA Should Require NPDES Permits for Discharges
on the Production and Land Application Area*

While the intent of Congress in defining the scope of the agricultural stormwater exemption is not clear, the structure and purpose of the CWA suggests that Congress never intended the exemption to reach to CAFOs. Additionally, the EPA is yet to devise a regulatory structure that could successfully apply the agricultural stormwater exemption to CAFOs without providing an escape for discharges of wastewater. For these reasons, the EPA should require NPDES permits for all discharges on the production area and the land application area.

First, the EPA should classify all discharges from the CAFOs as industrial. By specifically including CAFOs in the definition of point source, Congress may have intended to treat discharges from these facilities as industrial, thus outside the application of the agricultural stormwater exemption. The EPA should interpret this section in such a manner. Classifying land-applied CAFO manure as industrial process waste would require effluent limitation guidelines and water quality effluent limitations.

This interpretation is justified in light of the movement towards large-scale facilities. This trend has greatly increased the quantity of manure that is generated and applied at a single site.¹⁵⁷ Further, the movement to large, industrial-like

¹⁵⁶ Proposed CAFO Regulations, 66 Fed. Reg. at 3035.

¹⁵⁷ Marks & Knuffke, *supra* note 16, at vii.

facilities may “tempt courts and lawmakers to re-examine the very issue of what is agriculture.”¹⁵⁸ By closing the agricultural stormwater exemption to CAFOs, the EPA is helping to ensure the integrity of our nation’s waters.

Second, the EPA should require agricultural stormwater discharge permits of CAFOs regardless of whether the CAFO discharges are considered industrial or agricultural. The EPA has expressed a desire to limit the application of the exemption to pure storm runoff, not waste from overapplied manure. However, as the regulatory analysis discussed above suggests, the EPA’s proposed regulations cannot effectively limit the application in this way.¹⁵⁹ Statutory structure, court interpretations, and the EPA’s own interpretations indicate that the exemption should be no more than narrowly applied to CAFOs. Applying the agricultural stormwater exemption under the proposed regulatory scheme would only expand the window through which CAFOs could discharge without permits, thus frustrating the Act’s goals of cleaning up and protecting our waterways.

V. THE EPA SHOULD PROVIDE STRONGER COMPLIANCE STANDARDS AND MORE PUBLIC INPUT INTO THE PERMIT NUTRIENT PLANS

The EPA’s proposed regulations covering PNPs provide the foundation for an effective site-specific plan for CAFO operators to meet the requirements of their NPDES permits. Among other conditions, the PNP would require CAFO operators to determine allowable manure application rate for land applying manure and wastewater, with an intention of limiting discharges caused by careless or overapplication of manure.

While the proposed regulations include beneficial guidelines, it is essential that they be backed with strong compliance standards. However, lack of public participation and limited agency involvement in implementation, monitoring, and enforcement would severely weaken the effectiveness of the PNP.¹⁶⁰ Additionally, the potential application of the confidential business information exemption, effectively allowing CAFOs to withhold PNP information from the public, would further weaken these regulations.

A. Confidential Business Information Exemption Should Not Be Applied to the PNP

In connection with PNPs, the EPA has proposed requiring CAFO operators to make available to the public a copy of the PNP cover sheet and executive summary.¹⁶¹ However, the CAFO operator would not be required to make the

¹⁵⁸ Neil Hamilton, *Feeding Our Future: Six Philosophical Issues Shaping Agricultural Law*, 72 NEB. L. REV. 210, 215 (1993).

¹⁵⁹ See *supra* Part IV.A.

¹⁶⁰ See *supra* Part II.A.

¹⁶¹ Proposed CAFO Regulations, 66 Fed. Reg. at 3138 (proposing 40 C.F.R. § 122.23(l)(2)).

entire PNP available if the confidential business information exemption was claimed and proper procedure was followed.¹⁶² Alternatively, the EPA has proposed that no portion of the PNPs would be subject to confidential business information status.¹⁶³ The EPA is well within its legal authority to exclude this claim of confidentiality, and should do so in order to facilitate public participation in the PNP process.

The EPA offers two alternatives to allowing the confidential business information exemption. The first alternative involves classifying the PNP as part of the CAFO's NPDES permit.¹⁶⁴ Section 308(b) of the CWA¹⁶⁵ provides for confidentiality of certain business secrets. Section 402(j) of the Act,¹⁶⁶ however, provides that permits and applications be disclosed to the public. In 1978, the EPA concluded that information within an NPDES permit is not entitled to confidential treatment under 308(b).¹⁶⁷ This interpretation, and its application, was upheld in the D.C. Circuit Court of Appeals.¹⁶⁸ Here, the court was "unwilling to brand the disclosure regulation as unreasonable."¹⁶⁹ Looking to the Supreme Court's decision in *Ruckelhaus*, the court concluded that a business could be required to "provide confidential information where the Government had a legitimate regulatory interest in protecting the environment and public health."¹⁷⁰ Following this precedent, it appears that the EPA is well within its authority by classifying the PNP as part of the NPDES permit, exempt from the confidential business information status.

Alternatively, the EPA is proposing to classify the PNP as effluent data, also exempt from section 308.¹⁷¹ Under this classification, any information necessary to determine characteristics of a pollutant would not be entitled to section 308 protection.¹⁷² The EPA could determine that "information in the PNP has a direct bearing on the amount of pollutants that may be discharged."¹⁷³ Such determinations have been upheld in court, as in *RSR Corp. v. Browner*, where the Second Circuit Court of Appeals upheld the EPA's decision to classify production data as effluent data.¹⁷⁴

¹⁶² *Id.*

¹⁶³ *Id.* at 3035.

¹⁶⁴ *Id.*

¹⁶⁵ 33 U.S.C. § 1318(b).

¹⁶⁶ 33 U.S.C. § 1342(j).

¹⁶⁷ Proposed CAFO Regulations, 66 Fed. Reg. at 3035.

¹⁶⁸ *NRDC v. EPA*, 822 F.2d 104 (1987).

¹⁶⁹ *Id.* at 120.

¹⁷⁰ *Id.*

¹⁷¹ Proposed CAFO Regulations, 66 Fed. Reg. at 3035.

¹⁷² *Id.* at 3035-36.

¹⁷³ *Id.* at 3036.

¹⁷⁴ *Production Data Submitted to EPA Not Shielded From FOIA Disclosure*, 27 ENVT. REP. 282 (May 1996).

Based on relevant case law, the EPA has sufficient authority to exempt PNP information from confidential business information status. The EPA should invoke this authority to ensure the integrity of the public participation process.

*B. The EPA Must Strengthen Compliance Standards
for the Proposed PNP Regulations*

The EPA's proposed PNP regulations provide good structure for effective site-specific plans to help CAFO operators meet their NPDES permit goals, however, more must be done to strengthen compliance standards. The EPA can accomplish this through greater agency and public involvement at the implementation and monitoring stages.

First, the EPA should develop the PNP as an enforceable condition of an operator's NPDES permit. This would automatically give the permit authority more influence in the PNP process, and help ensure that an effective plan was developed and followed. Further, the permit authority, as well as a certified specialist, should be involved at the development and implementation stages. There should be minimum national standards for specialist qualifications to minimize the risk of forum shopping.

Additionally, the CAFO operator should be required to submit all PNP documents, including any monitoring reports and data, to the permit authority on regularly scheduled basis. CAFO operations should also be subject to periodic inspections by the permit authority. This will ensure that the CAFO is meeting the requirements of its PNP on a continual basis.

Opportunities for more public involvement must also be provided. The public should receive adequate notice of any proposed PNP, and have sufficient time to comment. All PNP documents and data should be made available at an easily accessible public site. Additionally, the EPA should exclude the application of the confidential business information exemption to any PNP material. By opening up the PNP process to the public, and providing for more input by the permit authority, the EPA would ensure the development of effective PNPs.

VI. THE EPA SHOULD TAKE ADDITIONAL STEPS TO ENSURE THAT POLLUTION
FROM CAFOs IS NOT INDIRECTLY DEPOSITED IN THE WATERS OF THE
UNITED STATES THROUGH TRANSFER TO THIRD PARTIES

While the EPA acknowledges the need to address transfer of manure and wastewater to third parties off of the CAFO site,¹⁷⁵ the agency needs to take additional steps in the final regulation in order to ensure that pollution from CAFOs is not indirectly deposited in the waters of the United States. Just as

¹⁷⁵ Proposed CAFO Regulations, 66 Fed. Reg. at 3032, 3037.

important, the EPA must ensure CAFO waste is tracked from its starting point to its final destination. The EPA has proposed two options for regulating manure transfers in section 122.23(j).¹⁷⁶ Option one would require the transporter of waste to receive a certificate from the receiving party acknowledging that the party will follow certain procedures in manure application.¹⁷⁷ The second option would merely require record keeping, and would not have any enforcement mechanism.¹⁷⁸ While this option would provide little insurance that the spirit of the law was being followed, option one is a reasonable method of tracking manure, provided the recipient was also required to develop and detail a PNP for the certificate.

First, as discussed in Part IV of this Comment, the agricultural storm water discharge exemption should not apply to CAFOs. In the proposed regulations, the EPA would recognize the storm water exemption for non-CAFO recipients of CAFO manure and wastewater without restrictions.¹⁷⁹ In effect, this would create a loophole for CAFOs to bypass the new regulations and dispose of their wastes without limitations through third party transfers. This would lead to the continued pollution of the waters of the United States, and defeat the purpose of the proposed regulations. While Congress included the storm water exemption in order to exclude farmers from regulation under the CWA if they are engaged in activities directly related to farming, there has always been an intent to regulate manure and wastewater generated by CAFOs. Therefore, the EPA should impose some restrictions and control mechanisms on the application of manure or wastewater generated at CAFOs by off-site recipients.

Second, the “No Certification Option”¹⁸⁰ the EPA co-proposes for non-CAFO land applicers is inadequate to ensure that the manure and wastewater generated at CAFOs is not misapplied to the detriment of water quality. There is no enforcement mechanism within this provision, and no realistic way for the EPA to track manure. The EPA should instead include the co-proposed “Certification Option” in its final rule.¹⁸¹ This option would “establish effluent limitations designed to prevent discharges due to over application.”¹⁸² Further it would inject a measure of third party accountability, through the required certification, into the transfer of CAFO manure and wastewater.

However, the EPA should further strengthen this regulation to mandate the development and documentation of a PNP by the recipient of the manure. This will ensure that the manure is being properly land-applied, and will limit manure discharges into surrounding water bodies. In sum, this provision would help to

¹⁷⁶ *Id.* at 3137–38.

¹⁷⁷ *Id.*

¹⁷⁸ *Id.*

¹⁷⁹ *Id.*

¹⁸⁰ Proposed CAFO Regulations, 66 Fed. Reg. at 3037.

¹⁸¹ *Id.* at 3037.

¹⁸² *Id.*

prevent the misapplication of waste and the pollution of waters of the United States.

VII. CONCLUSION

Large industrial farming is becoming more common in this country. While the loss of family farms to these corporate giants creates alarming social and economic consequences, the environmental impacts of this rapid change are even more alarming. These CAFOs are concentrating large numbers of animals in relatively small areas. To make matters worse, many CAFOs are clustered in relative proximity. This has placed an enormous burden on the surrounding ecosystems, and has directly impacted the land, wildlife, and humans. The EPA has acknowledged the severe impacts of CAFO waste, and has attempted to mitigate its impact through the promulgation of new CAFO regulations.

The revisions to the National Pollutant Discharge Effluent System Permit Regulations and Effluent Limitations Guidelines and Standards for Confined Animal Feeding Operations are certainly a step in the right direction. The proposed regulations close some glaring loopholes and strengthen aspects of the permitting process. However, much more is needed to alleviate the burden of CAFO waste on our nation's waters. Individual permits should be required over general permits to ensure that localized variables are considered. Groundwater contamination must be more tightly regulated. The agricultural stormwater exemption should not become a loophole through which CAFO operators can exploit the regulatory system. PNPs should be developed with full public input and regulatory oversight. Finally, the EPA should regulate manure waste from its creation to its disposal. Only by promulgating stricter standards will the EPA ensure the integrity of our nation's waters.