

## Sustainable Development Law & Policy

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Volume 5

Issue 1 *Winter 2005: Access to Water*

Article 10

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### Recommended Citation

Sato, Ayako. "Public Participation and Access to Clean Water: An Analysis of the CAFO Rule." *Sustainable Development Law & Policy*, Winter 2005, 40-44, 78.

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# PUBLIC PARTICIPATION AND ACCESS TO CLEAN WATER: AN ANALYSIS OF THE CAFO RULE

by Ayako Sato\*

## INTRODUCTION

On December 15, 2002,<sup>1</sup> the U.S. Environmental Protection Agency (“EPA”) issued the final rule<sup>2</sup> for Concentrated Animal Feeding Operations<sup>3</sup> (“CAFOs”) under the Clean Water Act. The Clean Water Act has been credited for significant improvements on water quality,<sup>4</sup> but discharges from animal feeding operations and other agricultural production continue to pose a problem for the nation’s waters.<sup>5</sup> A National Pollutant Discharge Elimination System (“NPDES”) permit is required under the Clean Water Act for the addition of any pollutant from a point source into U.S. waters.<sup>6</sup> Under the NPDES permit requirement, all point sources emitting pollutants must include controls reflecting application of technology-based requirements and any more stringent controls needed to meet water quality standards.<sup>7</sup> CAFOs, also referred to as feedlots or factory farms, are defined as point sources under the Act,<sup>8</sup> but the 1976 CAFO regulation only minimally covered animal feeding operations and therefore did not adequately protect water quality.

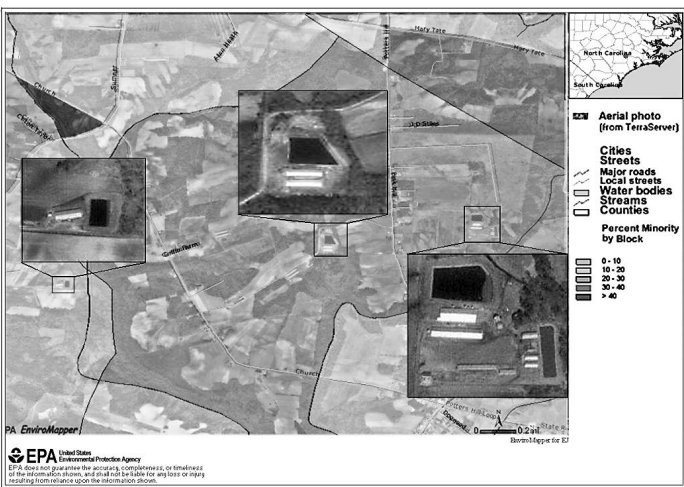
The 2002 CAFO rule was envisioned to be more stringent on animal feeding operations than the 1976 CAFO regulation. Despite this, the Waterkeepers Alliance, the Natural Resources

case as early as Spring of 2005.<sup>10</sup> This paper will focus on the complaint made by the environmental petitioners that the CAFO rule does not adequately allow for public participation in the permitting process, particularly in connection to the land application of animal wastes.<sup>11</sup> Wastes from CAFOs are often applied to adjacent crop fields, which might not be a problem if the nutrients were applied in amounts that could be utilized by crops. If wastes are over-applied, however, the residual wastes are carried away as runoff and can potentially impact the surface and groundwater. The environmental petitioners contend that the public is denied access to information related to the management of land application wastes. Public participation is especially important to the many residents, often from low-income and minority populations, who live near these CAFOs. The water quality degradation associated with CAFOs can have significant adverse effects on the health and quality of life of area populations. As every citizen should be entitled to access to clean water, this paper explores why it is important to have community residents be active participants in reviewing the actions of feedlot operators and be an integral part of the decision-making process on issues that directly affect their lives.

## ENVIRONMENTAL AND PUBLIC HEALTH EFFECTS OF WATER QUALITY DEGRADATION RESULTING FROM CAFOs

It has been documented that CAFOs cause water quality degradation through spillage and seepage from the lagoons storing animal waste<sup>12</sup> and from over-application of untreated waste on adjacent croplands for use as fertilizer.<sup>13</sup> CAFOs can house hundreds to thousands of livestock,<sup>14</sup> which produce many tons of animal waste.<sup>15</sup> The nutrients found in these waste products, particularly nitrogen and phosphorous, are among the leading contributors to water quality impairment.<sup>16</sup> The introduction of nitrogen and phosphorous into water bodies can lead to eutrophication, depriving fish and other plant and animal life of life-sustaining oxygen.<sup>17</sup> One of the worst cases illustrating the destructive impact of excess nutrients is the lagoon spill in North Carolina that released approximately 22 million gallons of animal waste and killed massive numbers of fish.<sup>18</sup>

Salts and heavy metals found in manure, via the animal feed consumed by livestock, can also make their way into groundwater and surface water.<sup>19</sup> Maintaining the integrity of groundwater is vitally important as it is the nation’s source of freshwater and supplies drinking water for 46% of the U.S. pop-



This map/aerial photo highlights three hog CAFOs in Duplin County, North Carolina. Two of the CAFOs are situated within a population comprised of 20-30% minority, while the surrounding area has a population of 0-10% minority. The third CAFO is situated within the area of 0-10%, however, it borders two areas that have a higher minority representation. For example, a Census block immediately above this CAFO has a population comprised of greater than 40% minority.

Defense Council, Sierra Club, and the American Littoral Society (“environmental petitioners”) have filed a lawsuit that claims the new CAFO rule violates the Clean Water Act,<sup>9</sup> and the Court of Appeals for the Second Circuit may decide the

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ulation.<sup>20</sup> Salts and heavy metals can have devastating impacts on ecosystems and drinking water.<sup>21</sup> For instance, metals such as mercury can bioaccumulate and move up the food chain, affecting both aquatic and avian wildlife.<sup>22</sup> Other pollutants found in manure include organic matter, solids, pathogens, volatile chemicals, antibiotics, pesticides, and hormones.<sup>23</sup> As livestock are routinely administered antibiotics and hormones to increase growth and prevent illnesses, numerous antimicrobial agents are also making their way into U.S. waterways.<sup>24</sup> This is problematic, as an increase in antimicrobial agents can lead to the development of antimicrobial-resistant bacterial strains.<sup>25</sup>

In addition to their potentially devastating effect on wildlife, CAFOs can also harm human health. Manure can con-

tain more than 150 types of pathogens posing serious risks to human health.<sup>26</sup> Some of these pathogens can be directly transmitted from animal waste to humans via contaminated water. Most of the documentation on pathogen transmission has been in connection with occupational studies, such as studies showing how leptospira species (Weil disease, canicola fever, dairy-worker fever, swineherds disease) are commonly transmitted through occupational exposure.<sup>27</sup> Although there have not been extensive studies to directly connect CAFOs with public infection, outbreaks of *E. coli*, leptospirosis, and cryptosporidiosis have been linked to water contamination.<sup>28</sup>

Nitrogen in drinking water can also impact human health in a number of ways. It can lead to miscarriages and has been associated with stomach and esophageal cancers,<sup>29</sup> as well as with methemoglobinemia, or what is more commonly known as blue-baby syndrome. Infants can succumb to blue-baby syndrome when they ingest nitrate-contaminated drinking water,<sup>30</sup> possibly resulting in the infant developing a blue-gray skin color and potentially leading to coma and even death.<sup>31</sup> Nitrogen in drinking water is especially problematic because it cannot be removed through conventional drinking water treatment.<sup>32</sup> Other health threats caused by manure-polluted waters include human health impacts associated with shellfish consumption and recreational contact.<sup>33</sup>

### COMMUNITIES SITUATED NEAR CAFOs

No one wants to live near a CAFO. Not only do they contribute to water quality impairment and affect the health of residents, they produce foul odors, decrease property values, and generally reduce the quality of life for residents who live around them. Living near a CAFO is a reality for many people, however, especially for low-income and minority (in particularly African-American) populations.

A study examining the spatial location and demographics of 67 industrial hog operations in Mississippi found that there are almost three times as many hog CAFOs in African-American and low-income communities throughout the state of Mississippi compared to communities that had very little low-income and minority populations.<sup>34</sup> Studies of hog CAFOs in North Carolina also documented high populations of low-income and African-Americans situated near CAFOs.<sup>35</sup>

Living near a CAFO has very serious consequences for communities already burdened by other economic, social, and health inequalities and disparities. In terms of health, the North Carolina study found that residents living near hog CAFOs reported headaches, runny nose, sore throats, excessive coughing, diarrhea, and burning eyes more frequently than a control group.<sup>36</sup> These findings supported other research suggesting that residents living near CAFOs are impacted by airborne emissions from hog operations.<sup>37</sup> Regarding water quality, hog operations can potentially increase pathogenic microbial contaminants,<sup>38</sup> and many households near intensive hog operations rely on well water as a drinking water source.<sup>39</sup> People who rely on well water are also at greater risk of nitrate poisoning because they are often not required to have the same monitoring and treatment requirements as public water sources.<sup>40</sup> These potential health impacts are especially troubling when one con-

## CAFOs IN NORTH CAROLINA

By Chris McChesney\*

The hog industry and other CAFOs are a vital part to North Carolina's economy.<sup>1</sup> In 1995, North Carolina suffered six spills from CAFOs resulting in 30 million gallons of animal waste spreading into the state. Five out of the six spills came from hog operations. A single swine facility was responsible for 22 million gallons, causing the owner of the site to be fined \$104,000. In the wake of the spills, the Governor ordered thousands of animal waste storage lagoons inspected. As a result, 124 lagoons were identified throughout the state as threats due to a high risk of overflow or other problems. The state legislature passed a permitting system along with tighter requirements for animal feeding operations. These restrictions include inspections to ensure safe facilities and nutrient levels in the storage lagoons.<sup>2</sup> Nonetheless, the state experienced another large spill in 1997. After a period of heavy rainfall, runoff from a CAFO amounted in 25 million gallons of wastewater flowing into the New River. This resulted in 10 million dead fish and the degradation of a 17-mile stretch of the river.



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### ENDNOTES:

<sup>1</sup> WALTER A. ROSENBAUM, ENVIRONMENTAL POLITICS AND POLICY 215 (5th ed. Congressional Quarterly Inc. 2002).

<sup>2</sup> U.S. Environmental Protection Agency/Office of the Inspector General, *Animal Waste Disposal Issues* (April 21, 1997), available at <http://www.epa.gov/oigearth/reports/1997/hogtable.htm> (last visited Nov. 11, 2004).

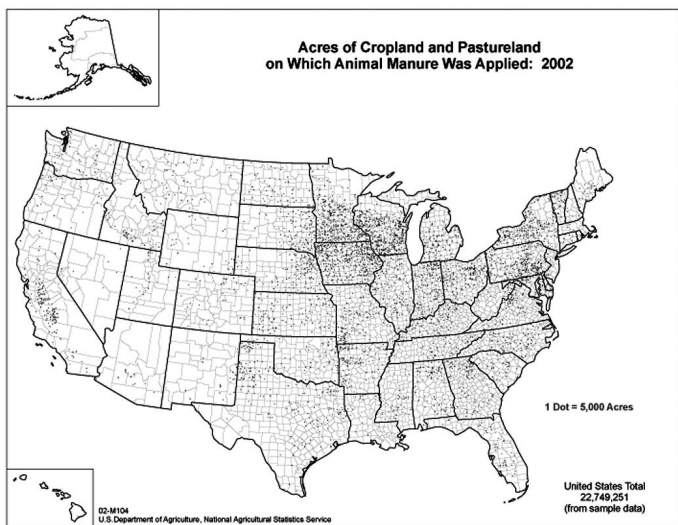
siders that African-Americans are less likely to visit physicians than whites,<sup>41</sup> low-income and minority populations are less likely to access medical care due to costs,<sup>42</sup> and these populations often lack adequate health care coverage.<sup>43</sup>

CAFOs can also have socio-economic impacts on communities. For instance, CAFOs can socially and financially depress an area. Studies indicate that proximity to CAFOs and the amount of manure produced on a CAFO can decrease property values.<sup>44</sup> At the same time, proximity to a CAFO can increase rental rates because of the influx of meatpacking workers.<sup>45</sup> Another blow to these communities is the vertical integration of CAFOs that expand the size of corporate operations while small, independent farmers disappear. One study suggests that the harm caused by CAFO growth and consolidation is especially great for African-American independent farmers.<sup>46</sup>

strophic storm events with a maximum 24-hour precipitation and a probable recurrence once in every 25 years would not be considered a CAFO subject to regulation under the rule.<sup>48</sup> With the new CAFO rule, all CAFOs have a mandatory duty to apply for an NPDES permit even if they only discharge during a large storm event.<sup>49</sup> In other words, CAFOs are required to apply for an NPDES permit if they have the potential to discharge, not only if they actually discharge.<sup>50</sup> This change will result in more CAFOs being covered under the NPDES permit system. As part of that system, ELGs for land applications are set, establishing the appropriate nutrient uptake of crops by the permitting authority and requiring that CAFOs develop an NMP.<sup>51</sup> Feedlot operators must develop their NMPs in accordance with the ELGs.<sup>52</sup> The NMP must “appropriately balance the nutrient needs of crops and potential adverse water quality impacts in establishing methods and criteria for determining appropriate application rates.”<sup>53</sup>

Second, land application of wastes produced on CAFOs must be covered under the NPDES permit if they enter U.S. waters. This expansion of the permit system recognizes that crop fields adjacent to the animal feeding operations are part of the larger CAFO.<sup>54</sup> There had been much debate and confusion over this given that the Clean Water Act recognizes CAFOs as a point-source, but at the same time, agricultural run-off is exempt from the NPDES permit requirement.<sup>55</sup> Feedlot operators would often apply the wastes generated on the CAFO to adjacent crop fields, but the application of these wastes was not covered due to the agricultural run-off exemption. The new CAFO rule is meant to remedy this apparent loophole. The NPDES permit will cover discharges from both the animal confinement area and the land application area, however, the rule may still exempt land applications that are done “in accordance with the site specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients.”<sup>56</sup> In other words, as required by the NPDES permit, the feedlot operator prepares an NMP, and if that operator applies waste in accordance with the NMP, any discharge resulting from the land application is considered agricultural run-off.

The environmental petitioners have a problem with this framework for several reasons. First, the feedlot operator or their technical consultant will prepare the NMP – the rule does not require that certified experts be involved in the NMP’s preparation or review.<sup>57</sup> Second, the NMP does not have to be reviewed or approved by the permitting authority because it is not part of the permit application.<sup>58</sup> A permit application only requires certification that an NMP has been completed and will be implemented.<sup>59</sup> The actual NMP must be kept on-site at the facility and the feedlot operator must make the NMP available to the Administrator upon request.<sup>60</sup> The environmental petitioners argue that there is nothing to ensure that NMPs are properly prepared to ensure ELGs will be met,<sup>61</sup> and essentially, the CAFO rule allows discharging feedlots to self-regulate. The worst case scenario is that the NMP can become an automatic defense for feedlot operators because if any major discharge occurs, they are protected from enforcement through the agricultural stormwater exemption as long as they have a certified NMP on-site.<sup>62</sup>



This 2002 U.S. Department of Agriculture/National Agricultural Statistics Service map highlights, on a national level, the practice of animal waste application to adjacent crop fields. This practice appears to be most prevalent in the Mid-Atlantic and Mid-Western states.

## BACKGROUND ON THE CAFO RULE AS IT RELATES TO PUBLIC PARTICIPATION

As environmentalists, health professionals, EPA officials and others began to recognize the significant environmental and public health impacts that CAFOs pose, the hope of the 2002 CAFO rule was that it would curb the amount of pollutants discharged into U.S. waterways. The new CAFO rule, as compared to the 1976 CAFO regulation, calls for sweeping changes, and this section will provide background information on the areas of the new rule that have direct implications on the public participation requirements of the Clean Water Act. This section is not meant to be a comprehensive synopsis of the CAFO rule as a whole, but only as it relates to public participation. Therefore, the discussion will center on the land application effluent limitation guidelines (“ELGs”) and the Nutrient Management Plans (“NMPs”) which are the central focus of the environmental petitioners’ argument regarding lack of public participation.

First, there will no longer be an exemption for CAFOs to obtain NPDES permits if they only discharge in the event of a 25-year, 24-hour storm.<sup>47</sup> Under the 1976 CAFO regulation an animal feeding operation that only discharged during cata-

## LACK OF PUBLIC PARTICIPATION

The Clean Water Act specifically requires that a “copy of each [NPDES] permit application and each permit issued shall be available to the public.”<sup>63</sup> The CAFO rule does not deny public access to NPDES permits, but vital information that relates to the NPDES permit, namely the NMPs, is not made available. As described in the previous section, NMPs are not required as part of the permit application process, and therefore, the permitting authority does not necessarily have a copy of the NMP to make available for public review. Also, because the NMPs are not a part of the permit and therefore are not government documents, a Freedom of Information Act (“FOIA”) request will not guarantee that a private citizen can gain access to the NMPs since private documents cannot be obtained through the FOIA process. As mentioned previously, the environmental petitioners argue there is no assurance that feedlot operators are preparing NMPs so as to prevent over-application of waste on adjacent crop fields. Without public access to such documents, there cannot be meaningful public participation since citizens are not given all of the relevant information regarding the permit.

In their brief, the environmental petitioners compare the 2002 CAFO rule to the final rule for storm sewer runoff (“Phase II Rule”) in *Environmental Defense Center v. United States Environmental Protection Agency*, 344 F.3d 832 (9th Cir. 2003). Environmental petitioners in that case argued that the Phase II Rule amounted to a program of self-regulation and failed to provide adequate public participation.<sup>64</sup> The Phase II Rule allowed small municipal separate storm sewer systems to fill out a Notice of Intent (“NOI”) as a way of acquiring permission to discharge under a general permit scheme.<sup>65</sup> Much like the CAFO rule, the NOI under this scheme did not have to be reviewed by EPA, because EPA claimed that NOIs were not part of the permit and thus not subject to public review.<sup>66</sup> The Court of Appeals for the Ninth Circuit held that EPA contravened the Clean Water Act by failing to require NOIs, which they found to be functional equivalents to NPDES permits, to be made publicly available for review.<sup>67</sup> The environmental petitioners in the present case claim that the CAFO rule similarly allows feedlot operators to self-regulate and denies appropriate public participation.<sup>68</sup>

As implied by the environmental petitioners, public participation serves an important enforcement tool. Their primary argument is that there is no way for government agencies to ensure that feedlot operators are preparing their NMPs in such a way as to protect water quality without the assurances that adequate public participation and scrutiny can provide. Government agencies have limited resources to enforce environmental regulations; only a fraction of emitting and polluting sources are monitored, and this may not be enough to protect communities and their environments.<sup>69</sup> Because communities living around emitting facilities are the first to be impacted, they have a stake in regulatory enforcement at those facilities.<sup>70</sup> However, these citizens must be armed with full and open information about the environmental issues concerning their health and environment before they can serve as effective enforcers. Transparency of information and process are integral compo-

nents to public participation, not only for adequate enforcement but also to ensure better environmental decision-making.

Public participation not only serves as an enforcement tool, it also gives the community a sense of contributing to the permitting process in a meaningful way. Having an informed, and thus empowered, community benefits the government since communities considering themselves active participants are less likely to use adversarial tactics to effect change. Conflicts among stakeholder groups, such as environmentalists, feedlot operators, and community members can be especially high when it involves CAFOs. A conflict resolution study done in Pennsylvania researched CAFOs and Pennsylvania’s Nutrient Management Act,<sup>70</sup> and found that stakeholders’ perceived loss of control in the decision-making process was the primary source of conflict.<sup>72</sup> The study further found that community residents are more likely to take legal action and engage in protest if they feel that they have been treated unfairly.<sup>73</sup> People generally react to loss of control through the use of defensive mechanisms that they believe will restore a sense of lost control.<sup>74</sup> These feelings are against a backdrop of existing perceptions of mistrust towards government officials whom the community residents feel are aligned with feedlot operators.<sup>75</sup> If community residents are denied access to NMPs, the likelihood that they will feel left out of the permitting process is surely guaranteed and perceptions of unfair treatment in the decision-making process are likely to fester.

As low-income and minority communities are often situated near CAFOs, an added dimension to the public participation debate is presented. Environmental justice<sup>76</sup> advocates have long stressed that low-income and minority communities have been excluded from meaningful public participation, and “improving the capacity and opportunity for community groups to participate in the permitting process is an almost universally identified step toward achieving environmental justice.”<sup>77</sup> In response to the concerns surrounding lack of community participation, the National Environmental Advisory Council (“NEJAC”)<sup>78</sup> created the “Model Plan for Public Participation.” One of the core values and guiding principles that the NEJAC developed is the idea that the “public participation process provides participants with the information they need to participate in a meaningful way.”<sup>79</sup> This principle is consistent with Executive Order No. 12898 calling on each federal agency to conduct its programs, policies, and activities in a manner that does not exclude citizens from participation in the programs, policies, and activities that affect them.<sup>80</sup> The Memorandum to the heads of all departments and agencies that accompanied the Executive Order is even more specific about the need for public participation, as it requires agencies to “provide minority communities and low-income communities access to public information on, and an opportunity for public participation in, matters relating to human health or the environment.”<sup>81</sup> The Memorandum further instructs agencies to provide communities with “public information relating to human health or environmental planning, regulations, and enforcement when required under the Freedom of Information Act.”<sup>82</sup> As full and open disclosure of information is a vital

component in public participation, the CAFO rule violates the essential core element of meaningful public participation when it allows NMPs to be excluded from public review.

### CONCLUSION

Because of the very serious impacts that CAFOs can have on the environment, particularly on water quality and public health, it is critical that government officials engage community residents situated near CAFOs in the NPDES permitting process. Community residents can serve as environmental enforcers if they are properly equipped with information regarding the environmental and public health issues within their community. Public participation not only empowers community residents by making them a part of the decision-making process, but also helps to alleviate the mistrust that community residents feel toward government officials. When community

residents feel that their contributions to the decision-making process are fully considered, they are less likely to use adversarial tactics to effect change. Moreover, because low-income and minority populations are often situated near CAFOs, the importance of ensuring meaningful public participation takes on added meaning. Environmental justice advocates have been concerned about the overall lack of public participation in many environmental policy decisions, and the CAFO rule illustrates this concern by not providing full and open public participation. Community residents should have meaningful public involvement in processes that directly affect their lives, and they should have a right to shape the policies that relate to their access to clean water. When reaching their decision in this case, the Court of Appeals for the Second Circuit should consider all of the possible ramifications that denial of meaningful public participation might have.



## ENDNOTES: Public Participation and Access to Clean Water

<sup>1</sup> The Final CAFO Rule was signed by Administrator Christine Todd Whitman on this date but was published in the Federal Register on February 12, 2003 and became effective on April 14, 2003.

<sup>2</sup> National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitation Guidelines and Standards for Concentrated Animal Feeding Operations (“CAFOs”), 68 Fed. Reg. 7176, 7189 (Feb. 12, 2003).

<sup>3</sup> An animal feeding operation is considered a large CAFO and will be subject to the CAFO rule requirements depending on the size threshold for a single type of animal. For example, an operation that confines more than 700 mature dairy cows is considered a Large CAFO. See 40 C.F.R. § 122.23(b)(4).

<sup>4</sup> There is indication that improvements in water quality can be seen especially in regards to point-source discharges. See William L. Andreen, *Water Quality Today – Has the Clean Water Act Been a Success?*, 55 ALA. L. REV. 537, 591 (2004).

<sup>5</sup> For example, agriculture, which includes animal feeding operations, was found to be the leading source of river and stream impairment with animal feeding operations contributing to the degradation of 24,616 assessed river and stream miles. U.S. Environmental Protection Agency, *2000 National Water Quality Inventory*, 1, 13-14 (2002).

<sup>6</sup> 33 U.S.C. §§ 1311(a), 1362(12).

<sup>7</sup> *Id.* §1311(b)(1)(C).

<sup>8</sup> *Id.* § 1362(14).

<sup>9</sup> The lawsuits were originally filed independently in different jurisdictions and also included lawsuits from CAFO industry groups. On March 24, 2003, the petitions were consolidated in the Second Circuit.

<sup>10</sup> *CAFO Ruling Expected by Next Spring*, FARM BUREAU NEWS, June 28, 2004, available at [http://www.fb.org/news/fbn/04/06\\_28/html/cafo.html](http://www.fb.org/news/fbn/04/06_28/html/cafo.html) (last visited October 28, 2004).

<sup>11</sup> See Brief for the Environmental Petitioners, *Waterkeeper Alliance v. United States Environmental Protection Agency* (03-4470(L)). The environmental petitioners bring forth the following issues: 1) whether the Final CAFO Rule fails to ensure compliance with water quality standards or with other requirements of the Clean Water Act; 2) whether the Final CAFO Rule unlawfully exempts CAFO point source discharges from the Clean Water Act by labeling them “agricultural stormwater”; 3) whether the final CAFO Rule enacts an impermissible “self-permitting” scheme that is contrary to the requirements of the Clean Water Act; 4) whether the Final CAFO Rule’s permitting and public participation standards violate the requirements of the Clean Water Act; 5) whether the Final CAFO Rule’s scheme to regulate land applications of CAFO wastewater violates the Clean Water Act; 6) whether the Final CAFO Rule violates the technology based effluent limitations standards required by the Clean Water Act.

<sup>12</sup> See Robbin Marks, *Cesspools of Shame: How Factory Farm Lagoons and Sprayfields Threaten Environmental and Public Health*, (NRDC, July 2001). For example, two million gallons of hog waste were spilled into the Cape Fear River, North Carolina in 1995; one million gallons of hog waste were spilled into the Trent River in Jones County, North Carolina in 1996; and 200,000 gallons of hog waste were spilled into Turkey Creek, North Carolina in 1999.

<sup>13</sup> *Id.* For example, indications of over-application of animal waste from sprayfields was discovered in Duplin County, North Carolina in May and March 1998; in Texas County, Oklahoma in October 1999; and in Lowndes County, Mississippi in November 1994.

<sup>14</sup> CAFOs are categorized into large, medium, and small CAFOs. Only large CAFOs have an automatic duty to apply for a NPDES permit while medium and small CAFOs are required to apply under certain conditions. To illustrate the size of a large CAFO, if a feedlot houses over 10,000 swine under 55 pounds each, it is considered a CAFO for the purposes of the Rule and must obtain a NPDES permit. *Supra* note 3.

<sup>15</sup> *Supra* note 2, at 7179. The EPA estimates that animal feeding operations produce over 500 million tons of animal manure annually.

<sup>16</sup> *Id.* at 7235.

<sup>17</sup> *Id.* at 7238.

<sup>18</sup> U.S. Environmental Protection Agency/Office of the Inspector General, *Animal Waste Disposal Issues* (April 21, 1997), available at <http://www.epa.gov/oigearth/reports/1997/hogtable.htm> (last visited October 28, 2004).

<sup>19</sup> See *supra* note 12, at 31 – 37.

<sup>20</sup> *Supra* note 5, at 49.

<sup>21</sup> See *supra* note 12, at 31 – 37.

<sup>22</sup> *Id.* at 32.

<sup>23</sup> See *supra* note 2, at 7235.

<sup>24</sup> See Enzo Campagnolo et al., *Antimicrobial Residues In Animal Waste and Water Resources Proximal To Large-Scale Swine and Poultry Feeding Operations*, 299 THE SCIENCE OF THE TOTAL ENVIRONMENT 89 (2002). The study found antimicrobial compounds in 31% of the water samples collected from areas that were near swine farms and 67% of the water samples collected near poultry farms. *Id.* at 92.

<sup>25</sup> *Id.* at 90.

<sup>26</sup> *Supra* note 2 at 7236. Some of these pathogens include salmonella, listeria monocytogenes, E. coli, cryptosporidium parvum, and giardia lamblia.

- 27 Dana Cole et al., *Concentrated Swine Feeding Operations and Public Health: A Review of Occupational and Community Health Effects*, 108 ENVTL. HEALTH PERSPS. 691 (2000). A study has found 58% of the leptospirosis cases in the United States had connections to the meat processing industry.
- 28 *Id.* at 694.
- 29 *Supra*, note 2, at 7238.
- 30 See Lynda Knobeloch, et al., *Blue Babies and Nitrate-Contaminated Well Water*, 108 ENVTL. HEALTH PERSPS. 675 (2000).
- 31 *Id.* Two case studies document two incidences of blue-baby syndrome in Wisconsin. In both cases, the infants consumed baby formula that was prepared with drinking water from wells. In one case, the well was located near an intensive farm site, and in the other case the well was situated on the family's goat dairy farm.
- 32 *Supra* note 2, at 7238. Chino Basin in California which is located near dairies, applies expensive treatment units that cost upwards of \$1 million per year in order to remove nitrates from drinking water.
- 33 *Id.* at 7238.
- 34 See Sacoby M. Wilson et al., *Environmental Injustice and the Mississippi Hog Industry*, 110 ENVTL. HEALTH PERSPS. 195 (2002). Populations that were considered low in low-income and minority populations were Census block groups in the 0 – 25% poverty and 0 – 29% African American category.
- 35 See Steve Wing & Susanne Wolf, *Intensive Livestock Operations, Health, and Quality of Life among Eastern North Carolina Residents*, 108 ENVTL. HEALTH PERSPS. 223 (2000). This study focused on 3 communities in North Carolina that were within a 2-mile radius of a livestock facility. The median annual family income was between \$17,000 to \$23,000 and the populations were between 65% to 90% African American.
- 36 *Id.*
- 37 *Id.* at 237.
- 38 *Supra* note 34 at 200.
- 39 *Supra* note 27 at 695.
- 40 *Supra* note 2, at 7238.
- 41 *Id.* A study shows that whites have 25% higher rates of outpatient visits than African-Americans.
- 42 See Jeannine S. Schiller & Luther Bernadel, *Summary Health Statistics for the U.S. Population 2002*, 6 (Centers for Disease Control, 2002), available at [http://www.cdc.gov/nchs/data/series/sr\\_10/sr10\\_220.pdf](http://www.cdc.gov/nchs/data/series/sr_10/sr10_220.pdf). (last visited Dec. 17, 2004) The study found that persons in the lowest income group were six times more likely to delay medical care and 11 times more likely not to get needed medical care compared to those in the highest income group.
- 43 *Id.* The study found that poor persons were twice as likely to have been without health insurance at some time within the past year.
- 44 Iowa State University & the University of Iowa Study Group, *Iowa Concentrated Animal Feeding Operation Air Quality Study*, 1, 158 (Feb. 2002), available at <http://www.public-health.uiowa.edu/ehsrc/CAFOstudy.htm> (last visited October 27, 2004).
- 45 *Id.*
- 46 Bob Edwards & Anthony Ladd, *Environmental Justice, Swine Production and Farm Loss in North Carolina*, 20 SOC. SPECTRUM 263 (1999).
- 47 *Supra* note 2, at 7195.
- 48 Michelle Nowlin, *CWA Law and Regulations: NPDES Wet Weather Issues: regulation of Animal Feedlots*, SH041 ALI-ABA 79, 82 (2002).
- 49 *Supra* note 2, at 7182.
- 50 *Id.* The only exemption is if the feedlot operator can demonstrate that the CAFO has no potential to discharge, but the burden to prove this rests with the feedlot operator.
- 51 *Id.* at 7209.
- 52 *Id.*
- 53 *Id.*
- 54 *Id.* at 7196. The CAFO Rule's expansion of the definition of CAFO to include adjacent application fields is consistent with the ninth circuit's holding that fields that are used to apply manure generated by CAFOs fall within the definition of CAFO and are not subject to the agricultural exemption. See Cmty. Ass'n for Restoration of the Env't v. Henry Bosma Dairy, 305 F.3d 943 (9th Cir. 2002).
- 55 *Supra* note 6, §1362(14).
- 56 *Supra* note 2, at 7197.
- 57 *Id.* at 7213.
- 58 *Id.* at 7206. The EPA originally proposed to require applicants for individual permits to submit Permit Nutrient Plan (the term "Permit Nutrient Plan" was subsequently replaced with "Nutrient Management Plan") if it was a new source.
- 59 *Id.*
- 60 *Id.* at 7209.
- 61 *Supra* note 11, at 27.
- 62 Scott Jerger, *EPA's New CAFO Land Application Requirements: An Exercise in Unsupervised Self-Monitoring*, 23 STAN. ENVTL. L.J. 91 (2004).
- 63 *Supra* note 6, §1342(j).
- 64 *Supra* note 11, at 41 – 42.
- 65 Env'tl. Def. Ctr., Inc. v. United States Env'tl. Prot. Agency, 344 F.3d 832, 842 (9th Cir. 2003).
- 66 *Id.* at 855.
- 67 *Id.* at 856.
- 68 *Supra* note 11, at 41.
- 69 Robert W. Collin & Robin Morris Collin, *The Role of Communities in Environmental Decisions: Communities Speaking for Themselves*, 13 J. ENVTL. L. & LITIG. 37, 45 (1998).
- 70 *Id.* at 46.
- 71 PA. STAT. ANN. tit. 3, §1706 (West 1993).
- 72 See Nancy A. Welsh & Barbara Gray, *Searching for a Sense of Control: The Challenge Presented by Community Conflicts Over Concentrated Animal Feeding Operations*, 10 PENN ST. ENVTL. L. REV. 295 (2002) [hereinafter Welsh]. See also, Charles W. Abdalla, et al., *Community Conflicts Over Intensive Livestock Operations: How and Why Do Such Conflicts Escalate?*, 7 DRAKE J. AGRIC. L. 7 (2002).
- 73 Welsh, *supra* note 72, at 301.
- 74 *Id.* at 302.
- 75 *Id.* at 302.
- 76 The EPA's definition of environmental justice is "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies." According to the EPA, "fair treatment means that no group of people, including a racial, ethnic, or a socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies. Meaningful involvement means that: (1) potentially affected community residents have an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health; (2) the public's contribution can influence the regulatory agency's decision; (3) the concerns of all participants involved will be considered in the decision making process; and (4) the decision makers seek out and facilitate the involvement of those potentially affected." See EPA's Office of Environmental Justice Web-site at <http://www.epa.gov/compliance/environmentaljustice/index.html>.
- 77 The National Academy of Public Administration, *Environmental Justice in EPA Permitting: Reducing Pollution in High-Risk Communities is Integral to the Agency's Mission*, 63 (December 2001).
- 78 The NEJAC is a Federal Advisory Committee to the EPA which provides extramural policy information and advice to the EPA and other EPA officials.
- 79 U.S. Environmental Protection Agency, *The Model Plan for Public Participation*, 8 (September 2000).
- 80 Exec. Order No. 12898 §2-2 (1994).
- 81 Memorandum from the President to the Heads of Departments and Agencies. Comprehensive Presidential Documents No. 279 (February 11, 1994).
- 82 *Id.*