Testimony of Tom Bonacquisti
Water Quality Program Manager
Loudoun County, Virginia Sanitation Authority

On Behalf of the
Association of Metropolitan Water Agencies

Before the
United States Senate
Committee on Environment and Public Works

Hearing on
An Examination of the Potential Human Health, Water Quality, and Other Impacts of the Confined Animal Feeding Operation Industry

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Good morning, Madam Chairwoman, Sen. Inhofe and distinguished members of the committee. My name is Tom Bonacquisti, and I am currently the Water Quality Program Manager with the Loudoun County Sanitation Authority, which serves drinking water and provides wastewater services to about 175,000 people in eastern Loudoun County, Virginia. Previously, I worked as the Director of Water Quality and Production for the Fairfax County Water Authority, also located in Northern Virginia. Today I am here on behalf of the Association of Metropolitan Water Agencies, or "AMWA," which is an organization of the largest publicly owned drinking water providers in the United States. AMWA's members provide clean and safe drinking water to more than 127 million Americans from Alaska to Puerto Rico.

AMWA commends you for taking the opportunity offered by this hearing to investigate the impact of concentrated animal feeding operations on regional water quality and safety, and appreciates the opportunity to present its view on this important and timely issue.

Thirty-five years ago this fall Congress passed the Clean Water Act, landmark legislation that has greatly reduced the discharge of harmful pollutants into the nation's waters and has helped make them safe for multiple uses, including as drinking water sources. With the subsequent passage in 1980 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as the Superfund law, Congress sought not only to strengthen environmental protections, but also to ensure that communities were able to recover from polluters the cost of cleaning up toxic and hazardous waste released into the environment. However, in recent years the owners and operators of large concentrated animal feeding operations (CAFOs) have increasingly advocated in favor of exempting themselves from this critical environmental law, by removing manure and its components from CERCLA's jurisdiction. Today, I will testify that providing a blanket exemption for manure from the requirements of CERCLA could damage the quality of drinking water sources that millions of Americans have come to depend upon.

What is a CAFO?

It is essential to first define what exactly is a "CAFO." Despite the arguments made by some, concentrated animal feeding operations are very different from small family farms. According to the Environmental Protection Agency's 2004 *Risk Management Evaluation for Concentrated Animal Feeding Operations*, a CAFO is a

large farm that generally holds more than 700 dairy cattle, 1,000 beef cattle, 55,000 turkeys, or 30,000 hens (with a liquid manure system) for a period of at least 45 days.[1] On an annual basis, these CAFOs can produce as much waste as a small-to-mid-size American city. Clearly, large operations of this size are not what one thinks of when envisioning a typical family farm.

It must also be clear that small family farms are unlikely to be impacted one way or another by efforts to redefine CERCLA's application to agricultural operations. While some have painted the absence of a CERCLA animal waste exemption as a threat to the existence of family farms in the United States, responsible small farming operations are unlikely to pollute to the extent to which they would be found in violation of the Superfund law. However, the sheer magnitude of animals densely held in CAFOs cause such operations to have a far more serious impact on the surrounding environment and water quality. It is estimated that 54 percent of U.S. livestock are held on CAFOs representing only 5 percent of livestock farms,[2] which generate approximately 575 billion pounds of animal waste every year.[3]

Contributing to this problem is the growing prevalence of these CAFOs. In 1982 there were more than 1.2 million small farms in America holding fewer than 150 animals, but by 1997 there were only about 920,000, a 26% reduction. During the same timeframe, large farms with more than 1,000 head of livestock increased 47%, from

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[1] EPA, *Risk Management Evaluation for Concentrated Animal Feeding Operations*, EPA/600/R-04/042 at 3-1 (May 2004) ("Risk Management Evaluation"), http://www.epa.gov/nrmrl/pubs/600r04042/600r04042.pdf.

[2] Gollehon N, Caswell M, Ribaudo M, Kellogg R, Lander C, Letson D (June 2001), *Confined Animal Production and Manure Nutrients*, Economic Research Service, U.S. Department of Agriculture, Agricultural Information Bulletin No. 771, http://www.ers.usda.gov/publications/aib771/.

[3] US Department of Agriculture, Agricultural Research Service, *Manure and Byproduct Utilization: National Program Annual Report: FY 2001*, www.nps.ars.usda.gov/programs/programs.htm?npnumber=206&docid=1076.

5,442 to 8,021. Viewed a different way, over that fifteen-year period the total number of animals on small farms decreased from 45.8 million to 34 million, while the animal population of large farms increased by 58% from 15.7 million to 24.9 million.[4] The consequences of this shift are twofold: not only are large corporate-run animal feeding operations rapidly supplanting traditional family farms, but the typical manure disposal practices of CAFOs – which commonly involve holding waste in huge leak-prone cesspools and field application techniques that lead to increased runoff – pose serious dangers to the quality of nearby drinking water supplies. Waste from family farms, on the other hand, is usually generated and released in much smaller volumes, so it is more readily controlled.

Current Manure Regulation Under CERCLA

As the number of CAFOs in the United States continues to grow, industry representatives have increasingly argued that they deserve an exemption from pollution cleanup liability under CERCLA. Legislation has been introduced in both houses of Congress that would specifically exclude manure and its components from the law's definition of a "hazardous substance" under section 101(14) and from the definition of a "pollutant or contaminant" under section 101(33). These proposals ignore the facts about CAFOs, CERCLA and animal manure in favor of giving large industrial farms the freedom to release regulated contaminants into the environment without consequence.

Most importantly, it must be noted that under current law, animal manure itself is not considered a hazardous substance, pollutant or contaminant under CERCLA. Arguments from the farm industry that environmentalists are seeking to place animal

[4] Risk Management Evaluation at 3-1.

manure in the same broad category as industrial waste are simply false. However, several toxins frequently found in waste emissions from CAFOs are regulated as hazardous substances under CERCLA, including phosphorus, nitrates, ammonia and even arsenic. Because a dangerous toxin remains a dangerous toxin whether it is released into the environment alone or as a component of another substance, it would be a mistake for Congress to relieve CAFOs of Superfund liability for each and every chemical and substance that may be found in animal manure. When deposited into the drinking water supply, community water systems must take additional treatment steps to remove these toxins and keep the water potable, regardless of their original source. If water systems were unable to recover excessive costs from polluters, all the citizens of the community would see their water rates increase just to maintain their previous level of drinking water quality, an outcome that is unfair and in direct conflict with the Superfund law's "polluter pays" philosophy.

Furthermore, some have argued that the Superfund law could enable the government to prohibit farms from spreading manure-based fertilizers on their fields. This is plainly false. In fact, CERCLA already excludes liability for pollution related to the "normal application of fertilizer." However, cost recovery is permitted against a CAFO that wrongly uses fertilizer as a way to dispose of waste in an attempt to avoid the law. This is a fair, common sense approach that prevents CAFOs from abusing the law, and therefore should not be tampered with.

The Impact of CAFOs on Water Quality

For a number of years there have been cases of components of untreated manure from CAFOs having harmful effects on public drinking water supplies across the country.

For example, in 2000 EPA's National Water Quality Report to Congress identified agriculture as the leading contributor to state-reported water quality impairments, with twenty-nine states identifying livestock feeding operations as a major source of water impairments.[5] EPA has also reported that the sources of drinking water for 43% of the U.S. population have suffered some level of pathogen contamination related to CAFOs.[6]

As I previously mentioned, CAFOs typically dispose of their animal manure first by storing it in large lagoons, usually close by where the animals are kept. But because such a large volume of waste is generated each day at CAFOs, it is rarely economically feasible for a CAFO to have animal manure hauled away. As a result, the waste usually stays stored in on-site lagoons until it is applied to fields as fertilizer. There are several problems with this process. First, many manure lagoons are poorly maintained, and allow the waste to leach into the ground and surrounding water supply. For example, a study in Iowa found that more than half of the state's 5,600 agricultural manure storage facilities consistently leaked in excess of legal limits.[7] Even when applied to fields as fertilizer, many CAFOs are not large enough to absorb the massive amounts of nutrients contained in the manure. As a result, CERCLA-regulated contaminants included in manure, such as nitrogen and phosphorus, often runoff into the watershed and adversely impact the water supply.

One of the most common drinking water quality problems related to animal manure is the increasing levels of algae that grow in water supplies when phosphorus – a common manure component and a CERCLA-regulated hazardous substance – enters the

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[5] EPA, "National Water Quality Inventory, 2000 Report" (August 2002) EPA-841-R-02-001, http://www.epa.gov/305b/2000report/

[6] Risk Management Evaluation at 4-2.

[7] Simpkins WW, Burkart MR, Helmke MF, et al. (2002) Potential impact of waste storage structures on water resources in Iowa. *J Am Water Resources Assoc.* 38:759–771.

water supply. When too much of a nutrient such as phosphorus is present in a reservoir, it stimulates plant, algae, and bacterial growth. If left untreated this increased algae causes serious taste and odor problems with the water, making it unfit for human consumption. To counter this problem water utilities must undertake additional treatments to combat the algae, but the effectiveness of these treatments tend to diminish over a long period of time if nutrients continue to be added to drinking water sources. What's more, increased treatment made necessary by high levels of nutrients in water sources also contribute to the formation of disinfection byproducts that result from the reaction of natural organic matter with disinfectants such as chlorine, ozone, chlorine dioxide and chloramines. The entry of these disinfection byproducts into the water supply can be largely avoided if excessive nutrients are not deposited into drinking water sources in the first place.

Finally, these additional disinfection measures are a sustained cost that water systems and ratepayers should be entitled to recoup from polluters – for the dual purpose of keeping costs under control and encouraging responsible environmental stewardship on the part of agricultural producers.

Some recent examples of CAFO-related drinking water pollution include:

- **Des Moines, Iowa**

  The Des Moines Water Works supplies drinking water to approximately 350,000 people in 4 counties and 23 communities in Central Iowa. In 1991 it constructed the world's largest nitrate removal system (at a cost of $3.7 million to the utility) to clean water from the Raccoon and Des Moines Rivers. The plant costs approximately $3,000 a day when in use, and on average must operate between 45

and 60 days per year in response to upriver manure releases. Nitrate is a common component of animal manure and is also on the list of contaminants regulated by CERCLA.

- **Oshkosh, Wisconsin**

  The City of Oshkosh spends an extra $30,000 a year on copper sulfate treatment to kill algae in drinking water supplies from Lake Winnebago, which are attributed to excess nutrients like phosphorus from manure and other sources. In 2004, there were 59 reported incidents of manure polluting water in Wisconsin, although the state says that the actual number was likely greater.

- **Illinois River, Oklahoma**

  The Illinois River, which flows through Arkansas and into Oklahoma, is the source of 22 public drinking water systems. But Arkansas's Illinois River watershed has one of the nation's densest poultry operations, producing waste equal to 10.7 million people, greater than the combined populations of Arkansas, Kansas and Oklahoma. After four years of attempted negotiations and mediation with the industry, the State of Oklahoma sued 14 corporate poultry operations for polluting the Illinois River and the Tenkiller Lake.

- **Chino Basin, CA**

  The Chino Basin is the supply of drinking water for Orange County. In 1988, 40% of the wells in the basin had nitrate levels above drinking water standards. EPA found that dairies were a major cause of the nitrogen, which is a CERCLA-regulated hazardous substance. Removing these nitrates costs more than $1

million per year. Chino also removes more than 1,500 tons of salt per year, which comes from local dairies, at a cost of $320 to $690 for every ton.

- **Waco, Texas**

  Lake Waco supplies drinking water to 150,000 people. Dairy cows in CAFOs upstream from Lake Waco created 5.7 million pounds of manure per day that was over-applied to land and made its way into the lake. The state found that nearly 90% of the controllable phosphorus in the river came from CAFOs in the watershed, and an independent researcher who conducted much of the state's analysis found that dairy waste applied to fields supplied up to 44% of the lake's phosphorus. From 1995 to 2005, the city spent $3.5 million on phosphorus-related water pollution, and has spent a total of approximately $70 million to improve water treatment. To recoup costs the city filed suit against 14 large industrial dairies in 2003 and eventually reached a settlement with the defendants.

- **Tulsa, Oklahoma**

  The City of Tulsa supplies drinking water to 500,000 people in its metropolitan area, but pollution from poultry farms in Arkansas led to excessive algae growth in Lake Eucha, one of its main water sources. As a result the city spent more than $4 million on increased drinking water treatments to address the problem, and unsuccessfully attempted to negotiate with poultry operations to reduce their manure applications. In 2002, the city sued six major poultry operations and the case was eventually settled, agreeing to a temporary moratorium on the application of litter and the installation of a new drinking water treatment system.

Conclusion

When properly managed, the animal waste from agricultural operations can have a minimal impact on their region's water quality. However, this outcome is dependent upon farm operators – particularly those overseeing CAFOs – implementing strong environmental management practices that adequately treat animal waste before releasing it into the surrounding environment. Unfortunately, too many large, corporate-run CAFOs have not implemented these practices on their own, which is why it is so essential for the communities and the public to continue to have recourses available through the Superfund law.

Public drinking water systems have a duty to do all that they can to ensure that the water they deliver to their customers is clean and safe. Likewise, CERCLA, with its "polluter pays" principle offers assistance to communities forced to clean up the mess when CAFOs ignore their responsibility to minimize harmful discharges into the environment. However, providing an entire industry with a waiver to discharge regulated hazardous substances such as phosphorus and nitrates into their region's watershed would result in a more polluted environment and higher costs for community water system ratepayers. As Congress celebrates the thirty-fifth anniversary of the Clean Water Act, such a waiver would turn back the clock to the days of unchecked pollution and declining water quality.