

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Manure Matters (newsletter)

Biological Systems Engineering

2004

Manure Matters, Volume 10, Number 1

John Sweeten

Texas A&M University

Ron Miner

Oregon State University

Carrie Tengman

National Pork Board

Follow this and additional works at: <https://digitalcommons.unl.edu/manurematters>



Part of the [Agronomy and Crop Sciences Commons](#)

Sweeten, John; Miner, Ron; and Tengman, Carrie, "Manure Matters, Volume 10, Number 1" (2004). *Manure Matters (newsletter)*. 28.

<https://digitalcommons.unl.edu/manurematters/28>

This Article is brought to you for free and open access by the Biological Systems Engineering at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Manure Matters (newsletter) by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

UNL's Livestock Environmental Issues Committee Includes representation from UNL, Nebraska Department of Environmental Quality, Natural Resources Conservation Service, Natural Resources Districts, Center for Rural Affairs, Nebraska Cattlemen, USDA Ag Research Services, and Nebraska Pork Producers Association.

Contact:
Chris Henry
217 LW Chase Hall
University of NE
Lincoln, NE 68583
(402) 472-6529
chenry@unl.edu



Manure Matters

Volume 10, Number 1

A Brief History and Background of the EPA CAFO Rule

*By John Sweeten, Texas A&M University; Ron Miner, * Oregon State University, and Carrie Tengman, National Pork Board*

**Dr. J. Ronald Miner was a faculty member at Oregon State University for 31 years. He passed away on Tuesday, February 10, 2004. Dr. Miner was an expert in livestock waste management, odor control strategies for animal production facilities, non-point source pollution control and water quality. He was highly regarded by producer groups, fellow research and extension engineers, animal scientists, lawyers and regulatory officials. Ron will be greatly missed by his friends, colleagues and family.*

Introduction

U.S. Environmental Protection Agency (EPA) rules affecting animal feeding operations (AFOs) have evolved from the 1972 Federal Clean Water Act (CWA). Section 502 of the CWA specifically defined “feedlots” as “point sources” along with dozens of other industries such as meat processing and fertilizer manufacturing. The goal of the 1972 CWA was to restore “fishable, swimmable” quality of lakes, streams, and estuaries in the United States.

A federal permit program termed the National Pollutant Discharge Elimination System (NPDES) was created for point sources that discharged into “waters of the United States.” The EPA regulations that ensued from the 1972 CWA were singularly focused on the main issue of surface water protection, and the rules developed for the “feedlots” point source category were no exception. This two-step, rule-making process addressed first, the design/operating criteria through industry-specific water quality protection rules (adopted in 1974) termed Effluent Limitations Guidelines (ELG) and New Source Performance Standards (NSPS) and second, (adopted in 1976) definitions as to which livestock and poultry operations constituted a point source (termed a concentrated animal feeding operation, or CAFO) and therefore became subject to

the NPDES permit program. Obviously, CAFOs have been regulated by federal rule through the NPDES or equivalent state permits since the mid-1970s.

CAFOs Requiring NPDES Permits

In 1976, EPA first defined exactly which livestock facilities constituted an AFO, and within this larger group, those operations that constituted a CAFO (point source) requiring NPDES permits in accordance with ELG/NSPS rules. Criteria for determining when a livestock operation was an AFO included animals fed or maintained for 45 or more days/year within a place of confinement that was marked by an absence of vegetation during a normal growing season. The criteria for determining when an AFO is a CAFO involved having sufficient numbers of animals to warrant regulation under NPDES. Size categories for different animal species that made operations subject to the CAFO rules included 1,000 head or more of beef cattle; 2,500 swine; 750 dairy cattle, etc. In terms of beef feeder-cattle equivalents (or so-called animal units [AU]), operations smaller than 300 AU were considered AFOs exempt from NPDES permits except by specific case-by-case designation and those between 300 and 1,000 AU were to be evaluated on a case-by-case basis depending on potential for discharge and other factors including types of wastewater conveyance structures or immediate proximity to a stream. The 1976 rules did grant an exemption from the federal permit program if the operation was designed and discharged only in the event of the 25-year, 24-hour storm. Exempted CAFOs still had to meet the no-discharge requirements for water pollution control but did not have to obtain a permit.

ELG

The ELG and NSPS established by the 1972 CWA required CAFOs to control manure-contaminated,

UNL's Livestock Environmental Issues Committee Includes representation from UNL, Nebraska Department of Environmental Quality, Natural Resources Conservation Service, Natural Resources Districts, Center for Rural Affairs, Nebraska Cattlemen, USDA Ag Research Services, and Nebraska Pork Producers Association.

Contact:
Chris Henry
217 LW Chase Hall
University of NE
Lincoln, NE 68583
(402) 472-6529
chenry@unl.edu

process-generated wastewater by preventing its discharge into waters of the United States (or a state) except in the event of a 24-hour duration rainfall event that had an expected recurrence interval of 25 years (the 25-year, 24-hour storm event). These so-called “no-discharge” requirements were adopted in 1974 and applied to any CAFO regardless of species, size, or configuration. Notably, land application practices for manure and wastewater (assuming normal agricultural use) were to be managed as nonpoint sources, not addressed in the ELG/NSPS framework.

Evolution: The Technology/Policy Nexus

Through the 1970s, 1980s, and 1990s, several major livestock feeding states set higher or more restrictive standards for CAFOs as a result of local issues or information. Some states developed more inclusive individual permit programs and/or required design criteria for protection of both surface water and groundwater, or for land application of manure/wastewater in accordance with sound agricultural practice, e.g., agronomic rates. Largely, these efforts have been led by state regulatory officials working in concert with the nation’s livestock and poultry industries together with engineering consultants, research and extension faculty at state land-grant universities, USDA personnel involved in research or technical/financial assistance, and soil and water conservation districts. For instance, scientists have supplied research-based guidance regarding appropriate manure utilization and land application practices for surface and groundwater quality protection. Some states have specified additional surface water protection based on water balance approaches for sizing containment structure capacities; nutrient management planning for land application; mortality management; or groundwater protection using claylined lagoons/holding ponds or the equivalent.

The last decade has produced industry shifts as well. Animal feeding operations have become increasingly consolidated, specialized, and regionally concentrated. Large operations may not have sufficient land for use of manure as fertilizer. Other environmental issues such as air quality concerns have emerged also. Consequently, to catch up with industry changes, present technology, state regulatory requirements, and public expectations, it became increasingly obvious that the intent of the EPA’s 25-year-old CAFO rules needed re-evaluation, clarification, and updating to provide environmental protection of the nation’s waters.

Summary

Congress passed the Clean Water Act (CWA) in 1972 to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” The CWA established a comprehensive program for protecting and restoring our nation’s waters. Among its core provisions, it prohibits the discharge of pollutants from a point source to waters of the United

States except as authorized by an NPDES permit.

EPA’s regulation of CAFOs dates to the 1970s. EPA established effluent guidelines for feedlots in 1974 based on the best available technology that was economically achievable for the industry. CAFO regulations issued in 1976 determined which AFOs were defined or could be designated as CAFOs under the CWA and therefore subject to NPDES permit regulations. However, many changes have occurred in the U.S. animal production industry since the development of the original regulations. The continued trend toward fewer but larger operations, coupled with greater emphasis on more intensive production methods and specialization, is concentrating more manure nutrients and other animal waste constituents in some geographic areas.

The new CAFO rules published February 12, 2003, in the *Federal Register* were adopted within the authority of the 1972 CWA as amended to address changes in the animal production industries and their developments. These new rules are the result of more than 3 years of high-profile study and input from the animal feeding industry, academia, environmental groups, and the general public through which EPA considered a wide range of potential options that were evaluated technically and economically.

EPA’s revisions to the original regulations make the regulations more effective for the purpose of protecting or restoring water quality. The revisions also make the regulations easier to understand and better clarify the conditions under which an AFO is a CAFO, and therefore, subject to the regulatory requirements. They are more inclusive of certain sectors of the CAFO industries, removed several registration exemptions, reflect a greater focus on land application of manure and wastewater, and emphasize accountability, inspections, and recordkeeping while retaining appropriate state flexibility.

This newsletter was taken from fact sheet #1 of the “CAFO Fact Sheet series” materials distributed through the Livestock and Poultry Stewardship Curriculum, developed with support from the USDA-CSREES, the US EPA’s National Agricultural Compliance Assistance Center, and the University of Nebraska Cooperative Extension at Lincoln, under cooperative agreement number 97-EXCA-3-0642. These materials can be accessed through the web at www.lpes.org.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperative with the U.S. Department of Agriculture. Elbert Dickey, Director of Cooperative Extension, University of Nebraska, Institute of Agriculture and Natural Resources. University of Nebraska Cooperative Extension educational programs abide with the non-discrimination policies of the University of Nebraska Lincoln and the United States Department of Agriculture.