

FINAL DRAFT

DENR's Two-Year Action Plan for Livestock Operations

Introduction

The current lagoon and sprayfield system of animal waste management has proven to be difficult to manage in North Carolina, particularly under conditions in North Carolina's central coastal plain. There are a number of factors that cause these systems to require intensive management to avoid environmental damage: the State's exposure to extreme weather events, such as hurricanes and northeasters; the proximity of many facilities to sensitive surface waters; location in an area with a high groundwater table; and the concentration of a large number of facilities in a relatively small area of the State.

While many livestock producers in North Carolina operate their facilities in compliance with state requirements, a significant number still are unable or unwilling to manage their facilities to the degree necessary to avoid discharges to surface waters and other environmental impacts. The Department of Environment and Natural Resources' (DENR) staff identified over 1,000 deficiencies and violations during 6,172 site visits in 2000. Although, the number of problems was down from more than 1,100 identified problems in 1999, year 2000 totals still indicate a real need for a continuous effort by DENR staff to improve management of these facilities and bring problem facilities into compliance. These problems included 152 discharges (41 of which reached surface waters), 285 occurrences of inadequate storage in the facilities' lagoons, 338 occurrences of over application on the facilities' spray fields, and 88 failures to have a certified operator to manage the facility's lagoon(s) and sprayfields.

Overarching principle:

DENR's 2001-2003 plan is built around Governor Easley's commitment to convert hog lagoons and sprayfields to new environmentally superior technologies. This plan provides a framework to identify and begin implementation of environmentally superior animal manure management technology and, in the interim, improving management of existing animal manure management systems, through monitoring, technical assistance and focused compliance inspections.

I. Attorney General/Producer Agreements:

The agreements between the N. C. Office of the Attorney General and Smithfield Foods, Inc. and Premium Standard Farms, Inc. represent a commitment by two of the largest integrators in the swine industry and the state to develop environmentally superior technologies for swine operations. Dr. Mike Williams and N.C. State University are directed, under the agreement, to work with stakeholders to identify technologies that are environmentally superior to the current lagoon/sprayfield system.

Under the agreement DENR is committed to help identify the environmentally superior technologies and to work with the Attorney General's office to implement the Enhanced Environmental Protection components of the agreement.

DENR supports efforts by the Attorney General's office to bring all producers under similar agreements.

A. Environmentally Superior Technologies

Staff in the Division of Water Quality (DWQ) are working very closely with Dr. Mike Williams, as part of the Technology Panel created by the agreements, to identify environmentally superior technologies and to provide expeditious review of individual permit applications for technologies to be installed for evaluation on swine facilities.

Two DWQ staff members have been appointed to the panel and other DWQ staff from both the Water Quality Section and the Groundwater Section have been assisting with system evaluations and system permitting.

Once these individual systems are installed at swine facilities, DWQ central office and regional office staff will assist with evaluating these technologies to insure the evaluations are comprehensive and the systems are permittable by DWQ.

If the new technologies are determined to be environmentally superior and are determined to be permittable by DWQ, DWQ staff will be responsible for an expeditious review of all permit applications that are received from the swine producers. This will insure that their commitment to convert all company owned facilities to the new technologies within three (3) years of the identification of the environmentally superior technologies is met. An even greater commitment of DWQ's resources will be required if contract farms also submit applications for permits to authorize conversion to the new technologies.

DENR supports extending the current moratorium on construction and expansion to allow time to identify and evaluate new manure management technologies.

- *Action item:* Legislation will be introduced extending the moratorium 26 months. *Office of Legislative Affairs*
- *Action item:* Permit and evaluate new technologies. DWQ is developing the review process to expedite such permit applications. *DWQ*

B. Environmental Enhancement Activity Funding

As part of the Smithfield Agreement, Smithfield has committed to contributing \$2 million a year for 25 years for environmental enhancement. DENR has an urgent funding need for positions to implement the AG/Producer agreements (permitting, monitoring and evaluation). This funding should also be used to complement existing programs to protect natural resources, protect water quality, provide information and education, and develop best management practices.

- *Action item:* Coordination with the Attorney General on the distribution of this funding. *Office of the Secretary, DWQ, DEH, DSWC, DPPEA*

C. Enhanced Environmental Protection under the producer agreements

DENR staff are working closely with the Attorney General's Office and the producers to develop and implement the five (5) major components of the Smithfield and Premium Standard agreements that relate to enhancing environmental protection at company owned and controlled facilities during the term of the agreements.

The five (5) activities are:

- Identify company-owned buildings and lagoons located in the 100-year flood plain and propose measures to protect the waters of the state from the effects of flooding.
- Identify company-owned facilities that have the potential to adversely impact water quality due to deficient site conditions or operational practices and propose measures to correct the deficiencies or operating practices.
- Identify wetlands and natural areas on company-owned facilities that protect water quality and propose measures to protect such areas, including conservation easements for such areas.
- Identify all abandoned lagoons on company-owned facilities and propose measures for closure of these lagoons.
- Develop a plan for adoption of environmental management systems (EMS) for company-owned facilities sufficient to attest compliance with the ISO 14000 series of voluntary standards governing environmental management systems.

II. Economic Initiatives

The conversion of traditional lagoon systems to innovative technologies can be expensive. There are also costs associated with addressing the environmental impacts of current systems. The state must look at funding options for conversion costs and environmental remediation as well as the development of markets for animal by-products that will be produced as a result of the implementing innovative technology.

A. Legislative Study

Significant costs are associated with converting lagoon systems to new technologies and for environmental remediation. DENR recognizes that contract and independent farmers vary considerably in their ability to absorb these costs. DENR supports a legislative study of potential funding sources.

- *Action item:* Legislation to authorize a legislative study of funding sources and other legislative needs to assist operators with conversion, environmental remediation, closure of inactive lagoons, and alternative sources of drinking water where drinking water wells have been contaminated. *Office of Legislative Affairs*

B. State Nutrient Plan

The Soil and Water Conservation Commission is developing a plan for managing animal nutrients. In addition to land application, the plan will explore options including value-added alternatives for using animal manure. This plan is being developed through the work of stakeholders and will include recommendations for developing and sustaining these options.

- *Action item:* Develop markets for the nutrients in the manure generated by the animal operations. *Joint effort between DENR, Department of Agriculture and Consumer Services, Department of Commerce, the Soil and Water Conservation Commission & the Department of Transportation.*

C. Marketing and Distribution of Value Added Products

For environmentally superior technologies to be more economically feasible, we must meet the immediate need to identify, develop and market viable by-products from the management of manure. These products include, but are not limited to, fertilizers, compost, soil amendments, alternative crops, bio-gas, and electricity.

- *Action item:* Develop a plan to identify markets for by-products of the animal waste management systems to be completed and presented to the General Assembly by May 1, 2002. *DENR, Department of Commerce, Department of Agriculture and Consumer Services, Utilities Commission, and Department of Transportation.*

D. Analysis of Costs Associated With New Technologies

To adequately assess the cost attributable to new technologies, DENR supports a full and complete accounting of the cost associated with the current technologies. This should be an analysis comparing the current lagoon costs, including compliance monitoring, incremental and long-term environmental costs, to the new technologies.

- *Action item:* Develop a report outlining the necessary variables and methodologies that should be considered during the economic assessment of the technologies identified under the producer agreements. *Office of the Secretary and DENR internal economic panel*

III. Federal Initiatives

Over the past several years, the federal government's interest in the management of livestock operations has expanded, resulting in several federal initiatives that require North Carolina and other states to change the way they have permitted animal operations in the past.

A. NPDES –

Since 1996, DENR has worked to issue state Non-Discharge Permits to over 2,500 swine, poultry (with liquid manure treatment systems) and cattle facilities. The Environmental Protection Agency's *2000 Inspector General Report* recommends withholding Clean Water Act Section 106 Water Grant funding for state permitting activities if the State does not require all facilities meeting the definition of a confined animal feeding operation (CAFO) to be covered by a National Pollutant Discharge Elimination System (NPDES) permit. To avoid the duplicative permit requirement (state Non-Discharge permit and a federal NPDES permit), DENR will develop and issue NPDES permits that meet both state and federal requirements.

- *Action item:* Finalize and implement general NPDES permits for swine, wet system poultry and dairy operations by the end of 2001. *DWQ*
- *Action item:* Technical amendment to the statute clarifying DWQ authority to issue general NPDES permits for animal facilities. *Office of Legislative Affairs*
- *Action item:* For informational purposes, present the NPDES permit program to the Environmental Management Commission (EMC) and the Soil and Water Conservation Commission. *DWQ, DSWC*

B. Phosphorus –

New federal initiatives from the U.S. Department of Agriculture (USDA) and the federal EPA are being developed to increase requirements for nutrient management by agriculture operations. While existing programs focus primarily on nitrogen, these new initiatives will address phosphorus loss to the environment.

The federal initiatives impact state programs, such as animal facility permitting and river basin water quality rules, because in adopting these rules, the EMC adopted by reference the federal USDA Natural Resources Conservation Service (NRCS) nutrient management standard. As the NRCS standard is applied to federal and state programs, DENR must work with other agencies and interest groups to consider the complexities of phosphorus and nutrient management. DENR will apply this nutrient management tool through a combination of regulatory and non-regulatory programs that can best manage the impacts of new requirements on agricultural producers.

- *Action item:* Review once NRCS standard is approved.

C. Dry-litter Poultry Operations

North Carolina is one of the largest poultry producing states in the country with an annual production of over 650 million chickens and 50 million turkeys. Since most of these birds are raised on dry litter systems, they do not receive the same level of permitting and compliance oversight as the animal facilities using liquid manure management systems. Because of the tremendous amounts of manure produced by these facilities each year, questions are being raised at both the state and federal level as to the need for these facilities to be permitted and inspected more like the animal facilities that use liquid manure systems.

EPA has proposed new permitting criteria that, if finalized, would require all dry-litter poultry facilities with more than 30,000 birds to apply for and receive coverage under a NPDES permit.

- *Action item:* Begin discussions with the poultry industry. *DWQ, DSWC*
- *Action item:* Verify compliance with SB 1217 requiring dry-litter poultry operations to develop animal waste management plans and keep required records. *DWQ.*
- *Action item:* If the new EPA permitting criteria are adopted, develop a NPDES general permit for dry-litter poultry operations. *DWQ*

IV. State Initiatives

While the state and industry are working diligently to provide innovative technologies for animal waste operations, it is critically important that existing facilities using the lagoon and sprayfield system be managed effectively to protect the state's natural resources and human health.

A. Groundwater/ Drinking water protection

The state is responsible for protecting North Carolina's public health. A safe water supply is essential to good public health. Drinking water supplies include large and small systems that regularly test for contaminants and are inspected by state officials, and private wells that receive little or no

monitoring. The state must develop and maintain a database of information to enhance our knowledge of groundwater for better protection of human health.

- *Action item:* Develop a comprehensive approach to protect groundwater and drinking water.
 - Part 1 – Analyze data to develop a statewide plan to evaluate and address documented groundwater contamination. Gather and analyze existing groundwater testing data from state agencies and local health departments to identify likely sources of contamination, whether agricultural or non-agricultural. Add to this database well testing data received directly from animal operations. Develop a plan to target areas with a high incidence of groundwater standard violations for additional study. *DWQ, DEH, DHHS, Local Governments*
 - Part 2 – Review the animal operation files for chronic violations, as well as potential groundwater impacts associated with sprayfield application and infiltration due to excessive leakage from older/unlined lagoons. Conduct site visits to evaluate issues of concern. Test the public/private wells within close proximity to the operations with chronic violations. Re-open permits as necessary to require groundwater monitoring. *DWQ, DEH*

B. Management of Existing Facilities

1. Technical Assistance and Compliance Initiative

In accordance with current state statutes, DENR staff are required to visit each of the over 2,500 large swine, poultry (with liquid manure treatment systems) and cattle facilities located in the state at least twice each year. The Division of Soil and Water Conservation (DSWC) is required to conduct at least one operational review each year and the Division of Water Quality (DWQ) is required to conduct at least one compliance inspection annually. In order to meet these requirements, the divisions' limited staff have been unable to spend the time needed with facilities that are experiencing compliance problems.

Based on experience gained through the pilot program for animal facility inspections, the department is proposing to allocate its technical assistance (DSWC) and regulatory (DWQ) resources for animal operations where they will be most effective. This focus, together with modified regulatory attention to facilities that are well managed, will provide an incentive for animal operators to work with technical assistance providers (DSWC and partners) to remain in compliance, and allow DWQ staff to focus on non-compliance situations including active enforcement.

- *Action item:* Target resources of DWQ and DSWC to increase overall compliance among animal operations.
 - The Division of Soil and Water Conservation will focus technical assistance resources on animal operations that demonstrate the ability to achieve and maintain compliance if provided technical assistance.

- The Division of Water Quality will reallocate compliance/enforcement resources to increase emphasis on regulatory inspections and enforcement actions at facilities with compliance problems. The frequency of DWQ inspections will be based on level of compliance; facilities that meet or exceed environmental standards will be inspected less frequently, while those that do not will have more frequent inspections. To make it possible for DWQ to put inspection and enforcement resources where they are most needed, legislation will be introduced to allow DWQ to inspect animal operations as often as needed, but no less than every three years. *DSWC, DWQ, Office of Legislative Affairs*

2. Model Environmental Management Systems (EMS)

“Environmental management system” (EMS) means a continuous cycle of planning, implementing, reviewing and improving the actions a facility takes to meet its environmental obligations under federal, state and local requirements, and to improve environmental performance. DENR will offer technical assistance to operators so they can develop an on-going EMS system for self-monitoring.

- *Action item:* Pilot the use of EMS at swine facilities. Develop educational and training materials for use by contract, independent, and company-owned producers. Investigate the use of EMS to help farms achieve and maintain compliance. *DPPEA, DEH, DWQ*

3. Nutrient Management and Reduction

Management of current facilities is necessary to insure the current lagoon and sprayfield systems are not releasing excess nitrogen into the environment.

- *Action item:* Develop best management practices (BMPs) that minimize nitrogen loss from existing swine facilities.
 - Develop BMPs to meet the goal of reducing nitrogen loss from animal operations. The BMPs should address losses in the form of ammonia emissions, groundwater infiltration and surface runoff. The BMPs will complement the new technologies identified under the Smithfield Agreement for more efficient use of nitrogen at swine facilities. *Nutrient Efficiency Work Group.*
 - Continue research on ammonia emissions from animal operations.

4. Odor Abatement

Odor complaints from livestock operations are prevalent throughout North Carolina. DENR is required under the recently adopted odor rules to insure compliance with odor standards.

- *Action item:* Reassess the odor rule to determine whether the current system allows for complaints to be verified or whether performance standards are necessary for implementation. *DAQ, DWQ*

Conclusion:

DENR will continue to work toward conversion from the lagoon/sprayfield system to environmentally superior technologies and to manage existing facilities so as to minimize environmental harm. Over the next two years, DENR will assist in the identification of new environmentally superior technologies for swine operations; implement federal requirements, including issuance of NPDES permits; and take actions to improve management of existing facilities through a concentrated compliance and enforcement program. DENR will address the problems associated with existing facilities through the new initiatives outlined in this document, such as development of best management practices to minimize nitrogen loss, and the use of all existing statutory and regulatory authority.