

ROLE OF A STAKEHOLDER ADVISORY GROUP IN DEVELOPING C.A.F.O. REGULATIONS IN GEORGIA

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Abstract. In June, 1998 the State Environmental Protection Division (EPD) convened a group of approximately 90 stakeholders with an interest in regulations for concentrated animal feeding operations (CAFO's). The members represented public interest groups, producers, academia, and state and federal agencies. They were asked to consider revisions to the current requirements for National Pollution Discharge Elimination System (NPDES) permits for CAFO's and the creation of several size categories with escalating requirements. Currently permits are required for animal feeding operations with more than 1,000 animal units (AU) and a wet manure system. Four subcommittees were formed consisting of 12-14 members each: 1) size classification and regulatory system, 2) location restrictions, odors, and setbacks, 3) nutrient management and monitoring, and 4) design and administration. There was consensus to require nutrient management plans, training and certification of operators, and riparian buffers for operations larger than 300 AU. There was no consensus on whether a smaller size category starting at 100 AU should be required to register, or a large category starting at 2,000 AU should require more stringent measures. There was agreement for location restrictions for recharge areas, deep sands and wet soils, endangered species habitat, the 11 counties of Coastal Management Area, impaired streams, and wild and scenic rivers.

INTRODUCTION

Several developments in late 1997 and early 1998 brought public attention to state regulations for CAFO's in Georgia. A North Carolina swine producer applied to the State Environmental Protection Division (EPD) in November for a permit to build a 20,800 sow operation in Taylor County (Ball, 1997). In the same month, two swine producers from Candler County, applied for a permit to build a 10,000 sow farm in Tattall County (Ball, 1997). Several months earlier, the Sunbelt Pork Cooperative, a coalition of Georgia swine producers, was formed for the purpose of opening a new pig-processing plant in the state that could slaughter 8,000 pigs per

day (Ball, 1997). When the Georgia legislature convened in January, 1998, a bill was introduced (HB 1265, 1998) by Representative Denny Dobbs to regulate large swine operations but no action was taken on the bill.

These events raised concern that the current requirements for a land application permit might be inadequate for the size of operations proposed and led EPD to review their permit requirements for CAFO's.

Under the current regulations, new CAFO's in Georgia with 1,000 or more AU (Table 1) are required to apply for a NPDES permit. Currently there are 13 permitted agricultural operations in Georgia: ten dairies and three swine operations.

Among the requirements for permitted operations are: lagoons designed to handle runoff from a 24-hour, 25-year storm event without overflow and to ensure that seepage does not exceed 1/8 in per day; wastewater disposal system excluded from the flood plain unless protected from inundation; nitrate in the groundwater at the property line does not exceed 10 mg/L; a minimum buffer zone of 150 ft between lagoons and property lines, between spray fields and property lines, and between spray fields and public roads; a minimum buffer of zone of 300 ft between the edge of the spray field and any

TABLE 1. Size of Operation Currently Requiring an NPDES Permit (1,000 AU)

Type of Animal	Number of Animals
Slaughter steers and heifers	1,000
Mature dairy cows	700
Swine over 55 pounds	2,500
Laying hens or broilers with a continuous flow watering system	100,000
Laying hens or broilers with a liquid manure handling system	30,000

neighboring habitable structure; at least one up-gradient and two down-gradient groundwater monitoring wells around each drainage basin with a spray field; (usually quarterly) testing of the lagoon effluent and monitoring wells.

The objective of this paper is to describe the process followed by the stakeholder advisory group and the recommendations developed by this group.

STAKEHOLDER ADVISORY GROUP

Membership and Organization

As part of the review process, EPD convened a Stakeholders Advisory Group in June of 1998. The charge to the group was to consider a tiered regulatory approach for CAFO's based on the size of an operation. The advisory group was asked to provide recommendations on the appropriate size categories and regulatory requirements within each category. Representatives from four stakeholder groups were invited to join the committee which eventually consisted of over 90 members (based on a September mailing list). The four groups were: producers, public interests, state and federal agencies, and academia.

The producer group included representatives from the American Proteins, Cal-Motive Foods, Claxton Poultry, Continental Grain Company, Fieldale Farms, Georgia Agribusiness Council, Georgia Cattlemans Association, Georgia Farm Bureau Federation, Georgia Pork Producers Association, Gold Kist, Hudson Farms, North Georgia Farm Credit, and Tyson Foods. The public interests group included representatives from the Upper Chattahoochee Riverkeeper, Coastal Georgia Center for Sustainable Development, Georgia Conservancy, Georgia Waterman's Association, Ohoopce River Preservation Corporation, Sierra Club, and Southern Environmental Law Center. The state and federal agencies group included representatives from Department of Agriculture, EPD, Georgia Geologic Survey, Georgia Soil and Water Conservation Commission, House Agriculture Committee, House Natural Resources Committee, Pollution Prevention Assistance Division, Senate Agriculture Committee, Senate Natural Resources Committee, USDA Natural Resource Conservation Service, US Fish and Wildlife Service, and US EPA. The academic group included faculty from Georgia Tech Research Institute and the Departments of Biological and Agricultural Engineering, Crop and Soil Sciences, Geology, and Poultry Science.

The full committee formed four subcommittees to deal with the principal issues: 1) Classification and Regulatory Size, 2) Location Restrictions, Odor, Buffers, and Setbacks, 3) Nutrient Management and Soil and Water Quality Monitoring, and 4) Design and Administration. Each subcommittee consisted of approximately four representatives each from the producer and public interests groups and two representatives each from the agency and academic groups. The subcommittees were asked to develop recommendations that

were then presented at the meetings of the full committee which met on June 4, June 19, July 24, September 23, and October 27, 1998. The subcommittees were asked to find areas of consensus or, on issues where there was not a consensus, present the views of the groups that could not agree. No issues were to be decided by votes. Each subcommittee met several times between the meetings of the full committee.

Classification and Regulatory Size

The Classification and Regulatory Size Subcommittee considered a four-tiered classification system for operations using a wet manure system, similar to that described in the USDA/EPA Draft Unified National Strategy for Animal Feeding Operations (USDA, 1997)

Class I operation	100-299 AU
Class II operation	300-999 AU
Class III operation	1,000-1,999 AU
Class IV operation	≥2,000 AU

There was considerable disagreement about what should be required at each level. The public interest group wanted Class I operations to register with EPD, Class II operations to obtain a general permit and have a nutrient management plan and a trained operator, Class III operations to obtain an individual permit with site specific requirements, and Class IV operations to have public meetings, no lagoons, additional buffer requirements, and additional compliance assurance and enforcement measures. The producer group wanted no requirements for Class I, a nutrient management plan and trained operator but no permit for Class II, and one class above 1,000 AU that would require a nutrient management plan, a trained operator, and an individual permit.

There was also disagreement over the extent to which dry manure operations were to be included. These systems use dry bedding material in houses, do not use water to flush manure from the houses, and therefore do not require lagoons. Dry manure systems are used primarily by broiler operations in Georgia. The public interest group wanted a four-tiered classification system similar to that for wet-manure operations:

Class I operation	10,000-19,999 birds
Class II operation	20,000-79,999 birds
Class III operation	80,000-159,999 birds
Class IV operation	≥160,000 birds

The producer group agreed to include dry manure operations only if they contained more than 450,000 birds (1,000 AU).

The groups agreed that these regulations should be phased in over a three (public interest group) or five (producer group) year period and existing operations should be grand fathered in.

Location Restrictions, Odor, Buffers, and Setbacks

The Location Restrictions, Odors, Buffers, and Setbacks Subcommittee explored a number of issues relating to water quality and odor. To protect surface water quality, the subcommittee agreed that Class II and larger operations using wet or dry manure systems should maintain a vegetated buffer

zone of at least 100 feet from all application fields to any perennial or intermittent stream or wetland (as shown on US quad sheets). This distance was based on research that has shown that riparian buffers reach maximum effectiveness for protecting stream water quality at about this distance (Castelle et al., 1994). For wet manure systems, the 100-foot buffer should also be required between any confinement buildings and perennial or intermittent stream or wetland. The subcommittee could not agree on the details of this buffer. Some members thought the buffer should consist of at least 20 feet of grass, 40 feet of non-grazed forest, and 15 feet of uncut forest immediately adjacent to the stream, based on the design proposed by the US Forest Service (Welsch, 1991). Others thought this requirement was too complex.

The subcommittee agreed that lagoons should not be located within the 100-year flood plain to protect against inundation, but could not agree on what the setback distance should be between lagoons and streams to protect streams from dam failure and seepage plumes. Some members wanted a setback of 500 ft and others thought the distance should be ¼ mile. Research in North Carolina on lagoons that were not designed to meet the current NRCS standard has documented plumes extending as far as 175 ft (Westerman et al., 1995). The subcommittee did not agree on the setback required from lagoons and confinement buildings to wells to protect drinking water. The Georgia Wellhead Protection Act (Georgia House Bill No. 32, 1985) requires 150 feet, but some members thought this was inadequate.

The subcommittee found that there were fewer scientific studies on which to base odor control measures, compared to water quality measures. For Class III or larger wet manure operations, it was agreed that a setback should be required from the lagoon and confinement buildings to the property line or any off-property occupied residence. This distance should be computed using scientific methods that would provide specific location distances in different compass directions from the facility, considering such factors as prevailing wind direction and frequency, land topography, number, age, and type of animals, type of feed, manure management practices (including ventilation systems), and odor control technologies used. EPD could allow for reduced distances with the written consent of all property owners affected by the reduced setback requirement. The subcommittee could not agree if the setback distance for odor control should be measured to the property line or to off-property occupied residences. If the distances are measured to residences, they require less property but "reverse setback" issues can occur if a new residence is constructed within the setback zone. The subcommittee could not agree on any specific distances to control odor. Setbacks from any lagoon or confinement building to the property line of ¼ mile for Class III operations and ½ mile for Class IV operations were proposed by some based on what other states in the region have considered. Other members objected that there was little scientific evidence to indicate that a minimum distance can be specified to control odor.

The subcommittee agreed on a number of location restrictions. Wet manure operations in recharge areas should be subject to a stricter permitting standard, i.e., the requirements of the next higher class. There was no agreement on whether to allow the largest category operation in recharge areas.

The subcommittee agreed that watershed general permits, as described in the Draft Unified National Strategy for Animal Feeding Operations (USDA and EPA, 1998), should be required for all wet manure operations in areas around federally designated critical habitats for endangered species. The 11 counties of the Coastal Management Area and designated portions of the Conusaga and Jacks River areas also should require watershed general permits. Wild and scenic river watersheds (state or federally designated) should also require watershed general permits. The subcommittee did not agree on whether or not Class IV operations should be allowed in these areas. Some thought they should be excluded, or lagoons and land applications sites prohibited, and others thought that they were acceptable if they were properly designed and operated. Watershed general permits should also be required for all wet manure operations located along stretches of streams declared by EPD to have impaired water quality due to agricultural sources. The subcommittee could not agree on whether special restrictions should be applied to watersheds of black water streams. These streams are slow moving and especially sensitive to nutrient overload. On the other hand, it was thought that black water streams were not well defined and the definition might include many of the streams in the Coastal Plain.

Nutrient Management, Soil and Water Quality Monitoring

The Nutrient Management and Soil and Water Quality Monitoring Subcommittee agreed that nutrient management plans must consider the infiltration rate and water holding capacity of the soil, feed alternatives, and an "increased focus on phosphorus". Essentially, the subcommittee's consensus was that a nutrient management plan, when appropriately developed and applied, represents a good process for controlling nutrients on agricultural fields.

The subcommittee agreed to require groundwater monitoring wells around sprayfields (required under the 1991 MOU) as well as lagoons for Class III and larger operations. There was a consensus among the subcommittee members that testing frequency should be quarterly, with the exception of total phosphorus. The public interest group wanted to extend this requirement to Class II operations. In addition, the public interest group wanted soil and lagoon tests to be submitted to EPD and include total nitrogen, ammonium, nitrate, total phosphorus, soluble phosphorus, potassium, calcium, magnesium, copper, zinc, and manganese. The producer group felt that testing for copper was not warranted, that total phosphorus should only be monitored if nitrate indicated problems existed. Producer group representatives also wanted tests to be used for crop management and not to be reported to EPD.

With respect to surface water and runoff monitoring, the public interest group expressed concern that all fields receiving animal wastes were not monitored for runoff. After considerable discussions, the subcommittee agreed that EPD should develop a baseline surface water monitoring methodology, and give all stakeholder an opportunity for input.

Both sides agreed that lagoon designs should meet NRCS standards (USDA, 1997), but the public interest group wanted lagoon designs and construction to be certified by a professional engineer while the producer group wanted lagoon designs to be certified by a professional engineer and construction to be certified by the contractor. There was considerable discussion of atmospheric emissions of ammonia from lagoons. The public interest group wanted to limit emissions by requiring covers or use of lagoon alternative technologies. Other members thought that alternative technologies were unproven or not economic.

Design and Administration

The Design and Administration subcommittee agreed that Georgia needed a training and certification program for Class II and larger operations. The training of these operators would be conducted by the Cooperative Extension Service and it would be specific to size and type of operation. There would also be a continuing education requirement but there was disagreement on the amount required.

The subcommittee also agreed that all Class II and larger operations should be required to keep on-farm records for the past three years that included nutrient management plans, annual waste and soil tests, application amounts and locations, lagoon freeboard, emergency plans, inventory numbers, and mortality. For Class III and larger operations, pollution prevention plans would also be required. These records would be available for inspections that the EPD would require annually for Class III and larger operations. Class II and larger operations should be required to prepare a closure plan that meets NRCS standards for decommissioning a waste storage facility (USDA, 1997) prior to abandoning a lagoon and these operations must demonstrate financial responsibility for closure through bonds, secured accounts, or some industry developed instrument.

The subcommittee felt strongly that none of the recommended changes were possible without funding and they addressed that issue as well. In general, the recommended plan would require 10 inspectors and four permit writers for the EPD, one specialist and eight district agents for the Cooperative Extension Service, a state cost-share program for small existing operations, and additional funds for research on the effects of animal operations on water quality, lagoon alternatives, and odor control.

CONCLUSIONS

The final recommendations of the four subcommittees were presented at the last meeting of the full committee on

October 27, 1998. A draft of the new rule was released by EPD on December 23, 1998. At the January, 1999 meeting of the Board of Natural Resources (a 12-member group appointed by the state governor to oversee EPD in policy matters), they imposed a moratorium on awarding any new permits to swine operations with over 1,000 AU. This was done because some members felt the draft revised rule that EPD released in December was not strict enough. At the February, 1999 meeting, the Board heard presentations by representatives from the four groups that participated in the Stakeholder Advisory Group. After the presentations, the Board passed a motion directing EPD to develop a stricter rule and submit it to the Board within two weeks.

The Stakeholder Advisory Group brought together a very large and diverse group of individuals who shared an interest in CAFO's. In general, there was agreement on regulations related to training of operators, record-keeping, and nutrient management plans (based largely on nitrogen). Setbacks from streams to control water quality were less controversial than setbacks from facilities/lagoons to property lines or residences to control odor or groundwater quality. There was agreement to require a nutrient management plan and trained operator for operations with 300 to 1,000 AU, but no agreement to create a larger category above 2,000 AU with more stringent requirements.

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