

General Permit Requirements for Confined Animal Feeding Operations in Virginia

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Introduction

A new waste management permit for confined animal feeding operations was adopted by the Virginia State Water Control Board on September 19, 1994, and became effective on November 16, 1994. The new regulation is referred to as the Virginia Pollution Abatement (VPA) General Permit Regulation for Confined Animal Feeding Operations [VR-680-14-22]. The purpose of this publication is to help producers understand who must have a permit to manage animal waste, how to apply for a permit, and the basic requirements contained in the general permit.

Who Needs a Permit?

A “confined animal feeding operation” means a lot or facility, together with any associated treatment works, where both of the following conditions are met. One, animals have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period. And two, crops, vegetation, forage growth, or post-harvest residues are not sustained over any portion of the operation lot or facility.

A permit is required for any confined animal feeding operation (CAFO) having 300 or more animal units utilizing a liquid manure collection and storage system. Table 1 contains the actual number of various livestock and poultry species equivalent to 300 animal units. The permit requirement only applies to liquid manure handling systems. Broiler, turkey, and laying hen operations using a dry manure handling system are excluded. The permit allows CAFO to operate and maintain waste storage facilities and to apply waste to land. The Department of Environmental Quality (DEQ) may require producers smaller than those listed in Table 1 to obtain a permit if public complaints and subsequent

DEQ inspections indicate the producer is not following acceptable waste management practices. No producer, regardless of size, is permitted to have a point source discharge of waste into surface waters.

Table 1. Animal Numbers Requiring Permit

Animal Type	Number
Dairy cattle	> 200
Feeder & slaughter cattle	> 300
Horses	> 150
Swine (>55 lbs)	> 750
Sheep	> 2,000
Turkeys**	> 16,500
Broilers & laying hens**	> 30,000

* Number of animals equivalent to 300 animal units.

** Permit required only with liquid waste system.

Producers still have the opportunity to obtain an individual VPA permit which is good for 10 years. For individual permits, the permit conditions will be designed specifically for each operation. In general, the individual permit takes longer to obtain, may require more monitoring and reporting, and involves a public notice in a local newspaper before the permit is issued. Hence, many producers may find the new general permit a good alternative to an individual permit. In the rest of this publication, the word permit refers to the new general permit unless otherwise indicated.

So, producers who have more than the DEQ designated number of animals on a bare lot confined or confinement facility for more than 45 days, and use a liquid manure handling system, must have a general or individual VPA permit to legally manage animal waste.

Application Process

Producers must file a complete VPA General Permit Registration Statement with the regional office of the DEQ. The statement form can be obtained at any regional DEQ office. The counties and cities included in each region, regional office locations, and contact persons are contained in (Figure 1).

The registration form is one page. It requests the owner's name and address, the location of the CAFO, and the number of animals to be fed. The registration form also requires a signed statement by local county, town, or city officials indicating compliance with all local government zoning and ordinance requirements. This statement is called the local government ordinance form (LGOF). The LGOF can be obtained from the regional DEQ office. The DEQ permit registration form must also have attached a copy of a letter from the Department of Conservation and Recreation (DCR) certifying approval of a nutrient management plan (NMP). The DEQ will respond in less than a month to the request for a general permit if your registration statement is complete when submitted.

The requirement of a certified LGOF and NMP with the permit registration form means much work must be completed before the registration form can be completed and submitted. Thus, before a producer invests much time and money in planning a new or expanded animal feeding operation, the producer should arrange visits with local DEQ officials, county administrator or planner, and a DCR representative. At each of these meetings the producer should explain in general the proposed CAFO and ask each agency what information they will need to obtain their approval. In preparation for these meetings, a producer should know the size of the intended CAFO; the general type, size, and location of the facilities; the amount of waste to be generated; how the waste is to be stored; and where the waste will be applied. With this general information, the producer can determine what additional information will be required and the most logical sequence in which to proceed to obtain a permit.

The importance of these initial contacts with the various agencies cannot be over-emphasized. Some producers have spent considerable amounts of money purchasing land and designing facilities and waste management systems only to find later that the proposed operation did not meet local zoning ordinances or that not enough land was available to develop a satisfactory NMP. Therefore, producers need to contact these agencies early in the formative stages of a planned CAFO.

Once it has been determined that the operation appears feasible, detailed planning should begin. The producer should learn from local and state officials exactly what informa-

tion will be required to get a certified LGOF and NMP. The local offices of DEQ, DCR, Farm Service Agency, and Virginia Cooperative Extension can help provide information. The producer will also need to obtain private assistance in designing the facilities and waste management system. These two steps will take the most time in getting a VPA permit.

The LGOF and the NMP are the heart of the new general permit regulation. The LGOF assures that a producer is in compliance with local county, town, or city planning and zoning ordinances. These ordinances are developed through carefully monitored public meetings and hearings, and as a result, they are a reflection of the local land use desires of the community. Compliance with these regulations will help producers to be viewed as good citizens in the local community.

The NMP is designed to assure that no waste or potentially water impacting nutrients from the waste reach either ground or surface water supplies. The plan accounts for the production and utilization of all surplus (or waste) nutrients associated with the animal feeding operation. If the NMP is followed by the producer, the water supply in the local community and the state will be protected. Because the NMP is critical to the protection of the environment, the NMP is enforceable by law by the DEQ once a permit is granted. The NMP is the major tool in the general permit used to protect the environment, so most of the management and reporting requirements in the permit are related to monitoring and enforcing the NMP.

Nutrient Management Plan

According to the general permit regulation, each NMP shall contain at a minimum the following information:

Site map indicating the location of the waste storage facilities and the fields where waste will be applied;

Site evaluation and assessment of soil types and potential productivity;

Soil, water, and waste sampling and monitoring plans;

Storage and land area requirements;

Calculation of waste application rates; and

Waste application schedules.

Waste Storage. A critical component of any waste management system is the collection and storage system. The permit contains several requirements for storage facilities. Frequently, earthen lagoons are the type of waste storage

system used, but the regulation applies to all liquid waste storage facilities. Storage facilities must be designed to prevent point source discharges of pollutants to state waters except in the case of a storm event greater than a 25-year, 24-hour storm.* The facility must provide adequate waste storage capacity to accommodate periods when the ground is frozen or saturated, periods when land application of nutrients should not occur due to limited or nonexistent crop nutrient uptake, and periods when physical limitations prohibit the land application of waste.

New waste storage facilities cannot be built on 100-year floodplains except under special circumstances. Lagoons shall include either a synthetic liner of at least 20 mils. thickness or a compacted soil liner of at least 1 foot thickness with a maximum permeability rating of 0.0014 inches per hour. After installation, the liner must be certified by a liner manufacturer, or by an approved professional engineer, Natural Resource Conservation Service employee, or soil and water conservation district employee. The certification of the lagoon liner must be maintained on site.

Lagoons installed to an elevation below the seasonal high water table (SHWT) or within one foot of the SHWT must have groundwater monitoring wells. A minimum of one up-gradient and one down-gradient well should be installed for monitoring when they are required. When lagoons are installed below the SHWT, the top surface of the waste must be maintained at least 2 feet above the water table. The lagoon shall maintain 1 foot of freeboard at all times, up to and including a 25-year, 24-hour storm.

[*This is the maximum amount of rainfall predicted to occur within 24 hours once within any 25-year period. This is only a probability statement-such storms might occur more or less than once in 25 years.]

Monitoring. Each nutrient management plan requires soil and waste monitoring. Groundwater monitoring is required at some sites. Tables 2, 3, and 4 show the parameters monitored and the testing frequency required for each.

Table 2. Soil Monitoring Requirements

Parameters	Frequency
pH	once in 3 years
Phosphorus	once in 3 years
Potash	once in 3 years
Calcium	once in 3 years
Magnesium	once in 3 years
Nitrate	once in 3 years

Table 3. Waste Monitoring Requirements

Parameters	Frequency
Total Kjeldahl Nitrogen	once per year
Ammonia Nitrogen	once per year
Total Phosphorus	once per year
Total Potassium	once per year
Calcium	once per year
Magnesium	once per year
Moisture content	once per year.

Table 4. Groundwater Monitoring Requirements

Parameters	Frequency
Static Water Level	once in 3 years
Ammonia Nitrogen	once in 3 years
Nitrate Nitrogen	once in 3 years
pH	once in 3 years
Conductivity	once in 3 years

Each type of monitoring has specific rules for how to collect the sample. It is the producers' responsibility to properly collect the sample and to have the samples analyzed. DEQ, DCR, and Virginia Cooperative Extension agents can help producers locate reputable laboratories. The DEQ requires that all monitoring dates and analyses results be retained on site for two years.

Buffer Zone. The general permit mandates buffer zones for land application of waste. Table 5 gives these requirements. Local zoning ordinances may include greater distances or additional buffer requirements. Producers are required to keep records of when, where, at what rate, and to what crops the animal waste was applied. These records must be kept on site and made available to DEQ personnel upon request.

Table 5. Buffer Zones for Land Application of Waste*

Object	Distance (ft)
Occupied dwellings **	200
Water supply wells	100
Surface water courses	
Surface application	50
Subsurface injection	25
Rock outcroppings (except limestone)	25
Limestone outcroppings	50

* Waste shall not be applied in such a manner that it would discharge to sinkholes.

** Unless the occupant signs a waiver of the buffer zone.

Additional Permit Provisions

If, for any reason, the producer does not or cannot comply with any of the permit provisions, the producer is required to report to DEQ within 24 hours. This provision is designed primarily to report accidents or when weather conditions cause an unexpected discharge of wastes. It is to the producers' benefit to report as soon as possible to minimize damages to the environment and possible legal damages. Producers must take all reasonable steps to minimize, correct, or prevent any discharge that has a likelihood of adversely affecting human health or the environment. DEQ can require producers to halt or reduce permitted activity in order to maintain compliance with the conditions of this permit.

DEQ personnel have the right of entry to the CAFO to inspect for compliance with the permit during regular business hours or whenever the facility is discharging waste. If producers decide to expand the CAFO, they must request a permit modification. If the CAFO is sold, the permit can be transferred to the new owner, but DEQ requires a 30-day written request for transfer. DEQ can terminate a permit after public notice and an opportunity for a hearing if the CAFO does not comply with the provisions of the general permit and of the NMP that is part of the permit.

Duration of General Permit

There is only one general VPA permit regulation for CAFOs. The permit became effective on November 16, 1994, and is good for 10 years. Each producer who registers under the general permit must meet the requirements of the general permit, including a site specific NMP. The general permit will expire on November 16, 2004. All producers who have registered under this permit will have their permit expire when the general permit expires. Hence, any producer who registers under this permit in 1996 will have the permit for approximately eight years. If a producer's registration under this general permit was accepted on November 16, 1998, that permit would be good until November 16, 2004, or six years.

When the current general permit nears expiration, DEQ will most likely write a new general permit. The new general permit would reflect any new environmental concerns and contain improvements based on experience gained under the current permit. The proposed new general permit would have to go through the public

hearing process and be approved by the SWCB. Then producers could register under the new general permit for another 10 years.

Summary

Compared to the previous individual permit, the new general permit requires less time to obtain, is longer in duration, and may contain fewer mandatory monitoring and reporting requirements. With the NMP as an enforceable part of the permit, the general permit should continue to protect the environment. The LGOF requirement should ensure that new confined animal feeding operations are consistent with the local communities' land use plans for the future. If producers comply with the requirements of the permit, the environment will be protected, communities will achieve their land use plans, and producers can operate animal feeding operations without unnecessary costs and regulations.

The most important suggestion in this article is to meet with personnel from your regional office of DEQ, the local county administrator responsible for zoning, and your local Department of Conservation and Recreation official before making extensive plans or buying and developing land. At these initial meetings, producers need to make sure they understand all the requirements for a CAFO and to determine whether the planned operation can meet these requirements. The personnel from these agencies can be the most helpful if they are contacted early in the process when they can have considerable input in helping design an acceptable animal feeding operation.

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