

# Nutrient Management Regulations



Nutrient management in a general context is quite simple. Two elements of nutrient management are to 1) ensure adequate nutrients are available for the crop to be grown while 2) reducing the potential for surface and groundwater contamination. Where nutrient management planning becomes more complex is trying to understand the regulations at the federal, state, and local level. The regulations regarding nutrient management and specifically manure management are in place to protect environmentally sensitive areas from manure and nutrient runoff. Nutrient management is in the best interest of the farmer since it makes good economic sense as it helps reduce application of excess nutrients. It also gives the farmer a good public image as they are working to protect the environment.

## Federal Regulations

The 590 nutrient management (NM) standard is the criteria that all NM plans must meet. Through the United States Department of Agriculture (USDA), the 590 standard is a national Natural Resources Conservation Service (NRCS) standard that is modified by each state. The standard regulates the amount of nutrients that can be applied to cropland. It contains nutrient application limitations based on slope, soil type, distance to water, frozen and snow-covered ground and science-based fertilizer recommendations. The fertilizer recommendations are often based on land-grant university and extension research.

The purpose of the 590 NM Standard is to

- To budget, supply, and conserve nutrients for plant production.
- To minimize agricultural nonpoint source pollution of surface and groundwater resources.
- To properly utilize manure or organic by-products as a plant nutrient source.
- To protect air quality by reducing odors, nitrogen emissions (ammonia, oxides of nitrogen), and the formation of atmospheric particulates.
- To maintain or improve the physical, chemical, and biological condition of soil.

Individual states need to follow the requirement listed in the 590 NM standard but can also add additional regulations to meet their specific environmental goals.

## State agency involvement

State agencies in conjunction with NRCS often are involved in nutrient management regulations. The following section provides some instances where other state agencies would be involved in nutrient management.

### Special Permits:

Several states require special permits. Often these permits are required for livestock operations that have over 1,000 animal units. (An animal unit = 1,000 lbs. of animal. 1 cow = 1.4 au). In most cases the livestock operations need to work closely with state Departments of Natural Resources (DNR) to obtain the permits. Permits typically require a NM plan that meets the 590 standard and may have additional requirements based on the location and type of facility.

### CAFO/AFO Rules:

Confined Animal Feeding Operations / Animal Feeding Operations have a national set of rules created by the Environmental Protection Agency (EPA) to help address manure and nutrient management. National rules mandating NM plan development were adopted in March '99. Livestock operations must comply between 2003-2009 depending on the number of animal units of the livestock facility or farm. In most cases, a livestock operation will need to exceed 1,000 animal units to enter CAFO/AFO status. Individual states may have different definitions of a CAFO/AFO. If states don't develop a plan for adoption of CAFO/AFO, EPA can develop the rules for a state.

### Notice of Discharge

Should a livestock operation fail to properly manage manure, most states have a system in place to handle this issue. Commonly, a Notice of Discharge (NOD) would be filed against a livestock operation who fails to manage its manure. The NOD is a complaint-driven system where the state DNR inspects farms based on a reported complaint. These complaints could range from overtopping of manure storage, to misapplications, to manure runoff events. DNR and local Land Conservation Departments (LCD) work with livestock operations to correct the problem and may assist to provide funding to construct the necessary pollution prevention system. If the livestock operation does

not already have a 590 plan, one will be strongly suggested.

### **Local Ordinances:**

In addition to NRCS and state agency regulations, local regulations may also affect manure management and nutrient management planning. Several counties and townships implement manure management ordinances and tie nutrient management planning to them. Probably the most common ordinance on the books at the local level pertaining to manure management is related to manure storage. If livestock or dairy operations seek to construct or apply for cost sharing for manure storage, most likely a local ordinance or regulation will come into play. The ordinance usually spells out siting and construction parameters for the facility to be built.

Some local ordinances can also direct or restrict the time of year for manure applications. For example, on sloping land in close proximity to surface water, a local ordinance may prohibit manure application on snow or frozen soil to reduce the risk of manure runoff to the surface water. Or an ordinance could direct application of manure only during certain months of the year. A local ordinance may also direct the type of application such as injection instead of surface application.

Livestock operations are encouraged to check with their local LCD to see if any manure management ordinances are enacted.

### **Impaired Waters**

In the 1990's the EPA directed a mandate to the states to identify a list of impaired surface waters within its state. The list which is known as a 303d list is revised every two years and identifies water bodies in the state that do not meet water quality standards due to point, nonpoint (runoff), and other sources of pollution. The list prioritizes locations for water quality improvement actions. Total Maximum Daily Loads (TMDLs) for the main contaminant (nutrient, pesticide, metals, etc.) to a given 303(d) water body are set by the DNR. Implementation strategies (and potential regulations) for meeting TMDLs are developed by DNR and local units of government.

In agricultural watersheds with 303(d) waters, nutrients (phosphorus and nitrogen) and sediment are the main TMDLs which are monitored. For a complete list of 303d waters go to

<http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/index.cfm>

### **State Regulations**

Since individual states have different regulations regarding manure management, producers of livestock should be aware of manure management regulations in their area. EPA provides oversight of state manure and nutrient management regulations. The following website can provide access to individual state regulations

<http://www.extension.org/pages/14881/state-specific-manure-nutrient-management-information>