Environmental Compliance for Hog Farms

Hog Farms

Animal Feeding Operation (AFO) or Concentrated Animal Feeding Operation (CAFO)

An Animal Feeding Operation (AFO) is a lot or facility where animals are kept confined and fed or maintained for at least 45 days during any 12-month period. Additionally, crops, vegetation or forage growth are not maintained over a normal growing season.

To be considered a Concentrated Animal Feeding Operation (CAFO) a facility must first be determined to be an AFO. CAFOs are classified by the type and number of animals they house and by how waste is discharged. If an AFO does not discharge or plan to discharge than it will not be considered a CAFO, regardless of size.

AFO Permitting Requirements

- Anyone planning to build a liquid manure waste handling system must get a construction permit before starting construction by submitting a completed Short Form B along with design criteria for the structure to the Kentucky Division of Water (DOW).
- AFOs with a liquid manure waste handling system must get a Kentucky No Discharge Operational Permit (KNDOP) to legally operate. To apply for the KNDOP a facility must submit a completed Short Form B to Kentucky DOW.
- A KYR10 stormwater construction permit is required for construction of holding ponds, barns, feeding areas or construction activities that disturb one acre or more.
- All farms of 10 acres or more must follow applicable Best Management Practices (BMPs) for farming activities and develop a site-specific Agricultural Water Quality Plan.
- All AFOs must develop a Nutrient Management Plan.
- Any fuel storage in above ground storage tanks could trigger Spill Prevention, Control, and Countermeasure Regulations (SPCC).

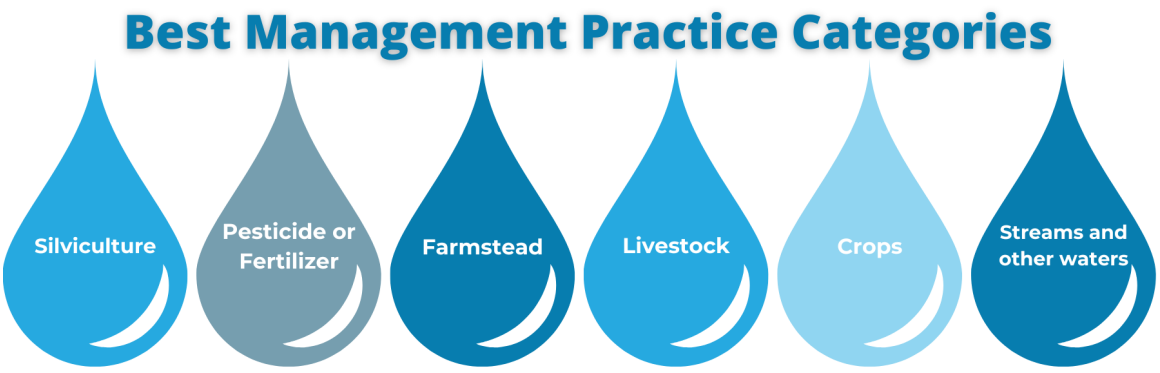
Note: Information Regarding Applicable Regulations and Requirements concerning AFOs can be located on the Kentucky Energy and Environment Cabinet Webpage:

Kentucky Pollutant Discharge Elimination System

Depending on the type and size of hog farm, manure production can range between 2,800 and 1.6 million tons a year. A feeding operation with 800,000 pigs could produce over 1.6 million tons of waste a year. Estimations indicate that livestock animals in the U.S. produce between 3 and 20 times more manure annually than people, as much as 1.2 –1.37 billion tons of waste, making manure management a very important area of hog farms.

Kentucky Agriculture Water Quality Plan

Kentucky's Agriculture Water Quality Authority has approved BMPs, which are acceptable practices that can be used to help protect water quality and promote soil conservation during agricultural and silvicultural activities. These BMPs can be broken down into the following categories:



Each of these six categories is further broken down to a listing of related BMPs that can be found and explained in greater detail from the Kentucky Agriculture Water Quality Authority.

The Kentucky Agriculture Water Quality Act requires all landowners with 10 or more acres that are being used for agriculture or forestry operations that involve the growing and harvesting of trees to follow all applicable BMPs and create and follow a site-specific Agricultural Water Quality Plan.

Visit Agriculture Water Quality Act - Kentucky Energy and Environment Cabinet for guidance documents and tools for developing a site specific Ag Water Quality Plan.

Is a Water Quality Plan required?

1. Is the site made up of 10 contiguous acres or more of land in Kentucky?

   No: An agriculture water quality plan is not needed.

   Yes: Go to question 2.

2. Is the property being used for agriculture and/or silviculture operations?

   No: An agriculture water quality plan is not needed.

   Yes: Go to question 3.

3. Does the site have a conservation plan, compliance plan, or a forest stewardship plan for your operation?

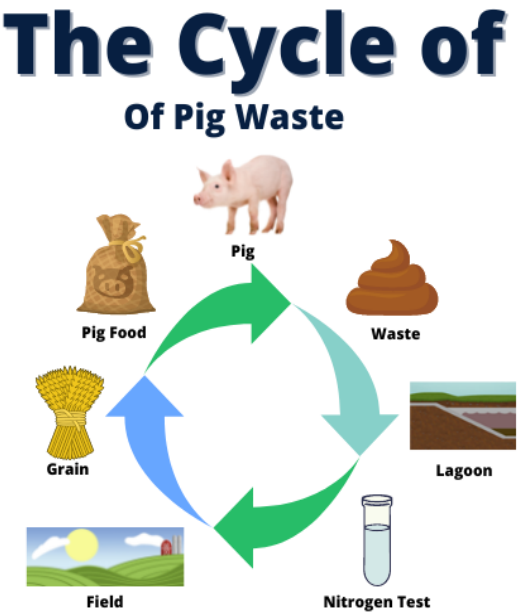
   No: The site will need to develop an agriculture water quality plan.

   Yes: The site will need to develop an agriculture water quality plan or update the conservation plan, compliance plan, or forest stewardship plan ground and surface water is protected from pollution from activities conducted on your property.

Nutrient Management Plans and Options

A good nutrient management plan, includes information regarding crops, livestock and manure handling. Having a thorough but simple plan can help realize the best long-term plan for maximizing the value of swine manure. A complete nutrient management plan will include such things as:

- Field slope and soil type along with soil testing results.
- Crop nutrient requirements.
- Type, number, and size of animals.
- Storage type, capacity and time requirements that will be needed.
- Manure analysis.
- Application Methods.



The following are just a few examples of hog farm manure management options:

1. On-Pasture Pig Manure Management is a simple choice for hog farms that includes monitoring of the soil and then using the manure in a fashion that will help the health of the soil.
2. Farms that keep their hogs indoors or on concrete can use composting as the manure can be easily handled and transported to the composting area. Pig manure should be composted before being used to fertilize garden soil or on young plants as germs and odor can be concerns associated with manure.
3. Stockpiling is another option for farms that keep pigs indoors or on concrete. The manure can be held in large holding tanks or lagoons broken down with bacteria and then sold as fuel sources or fertilizers.

Hog Health

Healthy hogs are a vital part of any successful hog farm, and most farmers and livestock owners consider the health of their animals to be of top importance. Hog farmers know that unhealthy pigs do not provide quality meat which can have a negative effect on the price of livestock products. The Kentucky agricultural community has worked to improve animal handling facilities, health care, feed quality, genetics, and producer knowledge.

The Kentucky Livestock Care Standards Commission was created in 2012 to create on-farm standards that would protect the health of livestock without putting unnecessary regulatory restrictions on farmers. The commission created a multi-species draft that was approved by the Kentucky State Board of Agriculture and adopted in March 2013. The Kentucky Livestock Care Standards cover such areas as, feed and water, space, health care, handling and transport, euthanasia, and biosecurity.

Kentucky Regulation 302 KAR states what is required by law for adequate care of swine.

Odor Standard

Kentucky has an odor standard that applies to outdoor or ambient air (401 KAR 53:010). When an odor complaint is received, Division for Air Quality (DAQ) staff will visit the site to investigate. An inspector will sample the air using a device that mixes the outdoor air with odorless (filtered) air and a violation is documented if an inspector detects an odor with the device. Strong and steady odors are often required to document a violation of the Kentucky odor standard. Many odors not rising to the level of a violation are, nevertheless, corrected through cooperative efforts between the inspector and responsible party.

Particulate matter (PM) is the most common currently regulated pollutants emitted by animal feeding operations. Raising pigs generates dust and confinement buildings may have increased concentrations of particulates that can have a harmful effect on indoor air quality, especially when operating at minimum ventilation rates. However, particulate emissions from swine facilities are relatively low, when compared to many other industrial operations. Recent emission monitoring studies suggest that swine operations generally do not exceed particulate matter emission thresholds within attainment areas.

Tips for avoiding environmental and health related issues

- Make sure manure pits are not surrounded by tall vegetation that could prevent air from circulating.
- Develop a pasture management plan to ensure proper vegetation is maintained.
- Create a concise straight forward plan covering the disposal of any solid, dry waste in an environmental responsible manner.
- Keep operations at least 100 feet from wells or waters of the commonwealth to help prevent waste runoff into water bodies.
- By aware of any local ordinance that prevents having hogs inside city limits or near residential housing.
- Provide enough space per pig to avoid overcrowding, which can have damaging effects on the overall production of the farm such as, tail biting or cannibalism, reduced weight gain, increased feed requirements and stress factors that can cause increased disease or cause a lack of reproduction.
- Remove dead animal remains from farm within 24 hours.

Why It Matters

Kentucky ranks 18th in the nation for total swine production, with more than 1,400 swine operations across the commonwealth. The value of swine production was 2.4% of total cash receipts for Kentucky agriculture at $128 million in 2020. In 2021, Kentucky had approximately 435,000 total head of swine. Most of Kentucky's hogs are raised in western Kentucky, which is near production of their primary food source of corn and soybeans.

Source: National Agriculture Statistics Service and Economic Research Commission