National Pollutant Discharge Elimination System (NPDES)

Concentrated Animal Feeding Operation (CAFO)

Animal Feeding Operations (AFOs) are agricultural operations where animals are kept and raised in confined situations. An AFO is a lot or facility where the following conditions are met:

- **Animals have been, are, or will be confined and fed or maintained for a total of 45 days or more in any 12-month period (EPA interprets *maintained* to mean that the animals are confined in the same area where waste is generated or concentrated), and**
- **Crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility.**

If not managed appropriately, AFOs may release large amounts of pollutants into nearby waterways. Of particular concern are concentrated animal feeding operations (CAFOs). CAFOs are a subset of AFOs that house large amounts of animals that generate waste or are otherwise a significant risk to water quality.

One of the largest challenges for a CAFO is managing the large volume of manure produced at the site. Manure and wastewaters generated at CAFOs may have high concentrations of nutrients, organic matter, sediments, pathogens, ammonia, and other pollutants that may be harmful to aquatic life and human health. Proper management of wastes is necessary to reduce the potential impacts to surface waters. As such, CAFOs must obtain an NPDES permit.

> **Animal Unit:** Based on an approximate weight of 1,000 lbs of live animal weight.

AFOs may be classified as a CAFO based on the number of animal units **kept at the site and the potential for discharging animal waste or related wastewater to a Water of the U.S. The CAFO regulations define a Large CAFO on the basis of the number of animals confined (1,000 animal units), and Medium CAFOs are defined as meeting specific discharge criteria in addition to the number of animal units at the site. The animal types with specific threshold numbers for CAFOs identified in the regulations are cattle, dairy cows, veal calves, swine, chickens, turkeys, ducks, horses, and sheep. Operations confining other animal types may be classified as a CAFO if it meets the definition of an AFO and is otherwise classified as a CAFO by the permitting authority.**

Large CAFOs are classified solely based on the number of animals confined at the site. The table below provides the thresholds for various animals specified within the federal regulations for Large CAFOs:

Large CAFOs Thresholds

Number of Animals	Type of Animal
700	Mature dairy cows
1,000	Veal cows
1,000	Cattle, other than mature dairy cows or veal cows
2,500	Swine weighing 55 pounds or more
10,000	Swine, weighing less than 55 pounds
500	Horses
10,000	Sheep or lambs
55,000	Turkeys
30,000	Laying hens or broilers, if the AFO uses a liquid-manure handling system
125,000	Chickens (other than laying hens), if the AFO uses other than a liquid-manure handling system
82,000	Laying hens, if the AFO uses other than a liquid-manure handling system
30,000	Ducks, if the AFO uses other than a liquid-manure handling system
5,000	Ducks, if the AFO uses a liquid-manure handling system

Medium CAFOs must meet discharge criteria in addition to animal threshold values. Medium CAFOs must discharge into Waters of the U.S. through a man-made ditch, flushing system, or other similar man-made device, or; directly into Waters of the US that originate outside the facility and pass over, across, or through the facility or otherwise come into direct contact with the confined animals.

The table below provides the thresholds for various animals specified within the federal regulations for Medium CAFOs:

Medium CAFOs Thresholds

Number of Animals	Type of Animal
200-699	Mature dairy cows
300-999	Veal cows
300-999	Cattle, other than mature dairy cows or veal cows
750-2,499	Swine weighing 55 pounds or more
3,000-9,999	Swine, weighing less than 55 pounds
150-499	Horses
3,000-9,999	Sheep or lambs
16,500-54,999	Turkeys
9,000-29,999	Laying hens or broilers, if the AFO uses a liquid-manure handling system
37,500-124,999	Chickens (other than laying hens), if the AFO uses other than a liquid-manure handling system
25,000-81,999	Laying hens, if the AFO uses other than a liquid-manure handling system
10,000-29,999	Ducks, if the AFO uses other than a liquid-manure handling system
1,500-4,999	Ducks, if the AFO uses a liquid-manure handling system

Multiple types of animals are not counted together to determine the type and size of a CAFO. However, once an operation is defined as a CAFO on the basis of a single animal type, all the manure generated by all animals confined at the operation are subject to NPDES requirements. However, the

permitting authority may designate other AFOs as a CAFO if the AFO is determined to be a significant contributor of pollutants to Waters of the US. Note that some authorized states have adopted regulatory definitions for CAFOs that are more inclusive and, therefore, broader in scope than EPA's regulations. Those facilities are subject to requirements under state law but not under federal law.

CAFOs are permitted using either general or individual permits. General permits offer a cost-effective approach because they can cover a large number of facilities under one permit. States may prefer to use individual permits when a site-specific permit that has been tailored for an individual facility is beneficial or otherwise necessary to protect water quality. Some states may use individual permits for all their CAFOs, while others may prefer to limit the use of individual permits for CAFOs where the facility has unique circumstances that might not otherwise be addressed in a general permit, if the facility is exceptionally large, if the facility has had a history of compliance issues or there are other site-specific environmental concerns, the facility is subject to additional regulations based on other operations on-site, or other pertinent reasons.

In general, CAFO permits will regulate process wastewater discharges from the CAFO's production area and land application sites. The production area includes the animal confinement areas and other parts of the facility, including manure storage areas, raw materials storage areas, and waste containment areas. The land application area includes all land under the control of the CAFO owner or operator, including where the CAFO owns, rents, or leases the land to which manure from the production area is applied.

CAFO permits contain the same main elements as any other permit: effluent limits, monitoring and reporting requirements, record keeping requirements, special conditions, and standard conditions. The regulations at 40 CFR 412 contains technology-based requirements for select CAFOs, where case-by-case technology-based requirements will need to be developed by the permitting authority for other CAFOs. As a part of these technology-based requirements, numeric effluent limitations may be applicable. In some instances, certain discharges are prohibited under typical operations and may only be allowable under severe wet weather events (i.e., a 25-year, 24-hour rainfall event). In general, the technology-based requirements ensure that adequate storage or treatment structures capable of containing all manure, litter, and process wastewater are implemented. Additionally, CAFOs that apply manure are required to do so in accordance with certain practices that minimize runoff and discharge into nearby surface waters. In order to ensure manure is applied at rates that are protective of water quality, CAFO owners/operators must develop a nutrient management plan (NMP).

An NMP that is part of a CAFO permit must include, at a minimum, BMPs necessary to achieve the nine minimum requirements of 40 CFR parts 122.42(e)(1)(i)-(ix) (minimum measures) and other effluent limitations and standards, to the extent applicable, which are described in greater detail in Chapters 5 and 6. 40 CFR § 122.42(e)(1). The minimum measures include requirements applicable to both the production area and the land application area. NMPs detail how the discharge will manage land application of manure at ergonomic rates, including periodic analysis of soil and manure quality for nitrogen and phosphorus content, inspections of equipment used for land application, implementation of setbacks for manure application, and maintenance of on-site records documenting implementation of all required best management practices (BMPs).

In addition to the technology-based standards, the NPDES permit must also be protective of water quality, and contain any necessary water quality-based effluent limitations or best management practices to be compliant with the State's water quality standards.

For more information regarding CAFOs, please visit: https://www.epa.gov/npdes/animal-feeding-operations-afos

Additional information regarding NPDES permit conditions may be found at: https://www.epa.gov/npdes/npdes-permit-writers-manual-concentrated-animal-feeding-operations