



Livestock and Poultry Environmental Stewardship (LPES) curriculum

CAFO Fact Sheet series

Fact Sheet #12: CAFO Requirements for the Beef Production Area

Disclaimer

This fact sheet reflects the best professional judgment of the contributing authors and is based on information available as of the publication date. Also, your state may have additional, more stringent requirements than EPA's requirements. Contact your permitting authority for complete information on the regulations that apply to you.

Copyright © 2003.
MidWest Plan Service.
Iowa State University,
Ames, Iowa 50011-3080.

Copyright Permission

For copyright permission, call MidWest Plan Service (MWPS) at 515-294-4337. Organizations may reproduce this fact sheet for non-commercial use, provided they acknowledge MWPS as the copyright owner and include the following credit statement:

Reprinted from Livestock and Poultry Environmental Stewardship curriculum, fact sheet authored by Brent Auvermann, Texas A&M University, courtesy of MidWest Plan Service, Iowa State University, Ames, Iowa, 50011-3080 and your land-grant universities, Copyright © 2003.

By Brent Auvermann, Texas A&M University

Introduction

In December 2002, EPA released new rules defining and clarifying environmental regulations for concentrated animal feeding operations (CAFOs). The rules contain a new framework for determining what facilities are subject to the federal rules. Producers who in the past have not known about these rules will need to respond to them and may be required to make substantial changes in the ways manure, wastewater, and mortalities are handled on their operations. This fact sheet addresses only the federal requirements. To ensure full compliance with all applicable rules, be sure to contact your state permitting authority for the most up-to-date information and to identify any additional state requirements.

One of the two major sections of the CAFO rules is the Effluent Limitations Guidelines (ELG), the section that defines the minimum technology standards that large CAFO operators are required to meet. These guidelines vary slightly among different animal species. State permitting authorities use technology-based requirements for medium-sized and small CAFOs. More information on the applicability of the new CAFO regulations can be found in *Fact Sheet #2: Do I Need an NPDES Permit for My Livestock or Poultry Operation?*

This fact sheet summarizes the ELG provisions for new and existing beef CAFOs. The provisions discussed in the fact sheet apply to the production area, the area where animals are housed and raw materials and manure are stored. Provisions for land application and other aspects of the CAFO system are covered in *Fact Sheet #20: What is Required in a Nutrient Management Plan?*

Fact Sheet #12 (continued)

What is the Production Area?

The production area is that part of an AFO that includes the animal confinement area, the manure storage area, the raw materials storage area, and the waste containment areas. The animal confinement area includes but is not limited to open lots, housed lots, feedlots, confinement houses, stall barns, free stall barns, milkrooms, milking centers, cowyards, barnyards, medication pens, walkers, animal walkways, and stables. The manure storage area includes but is not limited to lagoons, runoff ponds, storage sheds, stock piles, under house or pit storages, liquid impoundments, static piles, and composting piles. The raw materials storage area includes but is not limited to feed silos, silage bunkers, and bedding materials. The waste containment area includes but is not limited to settling basins, and areas within berms and diversions that separate uncontaminated storm water. Also included in the definition of production area is any egg-washing or egg-processing facility, and any area used in the storage, handling, treatment, or disposal of mortalities.

Requirements for Beef Operations

- The federal ELG for large beef CAFOs apply only to those operations that have a one-time capacity of 1,000 cattle or greater.
- There must be no discharge of manure, litter, or process wastewater (henceforth, the term “manure” refers to any or all of those materials) from the production area. Discharges are only allowed if the following federal requirements are met:
 - The production area for NEW and EXISTING operations must be designed, constructed, operated, and maintained to contain all the manure, litter, and process wastewater, including storm water, plus runoff from the 25-year, 24-hour rainfall event.
 - The CAFO must comply with all of the inspection, monitoring, record-keeping, and mortality disposal provisions in the rule.

Recommended Best Management Practices (BMPs)

Keeping the Clean Water Clean

Keeping the clean water clean is vital to good management of the production area. A continuously leaking waterer with no capture system for the overflow will carry pollutants to a vegetated filter strip or wastewater retention structure. Vegetated filter strips will not maintain their vigor and will not function efficiently if they are constantly submerged or if their soils remain saturated. Maintaining waterers so that they do not overflow (unless overflow is directed to a drain and storage system designed for the purpose) is part of good production area management.

Roof water can be controlled by using rain gutters or drip trenches. Because barn roofs are much larger than most roofs, the rain gutters and downspouts need to have sufficient capacity to carry the runoff volumes that these large areas can generate. The size of the gutters, their slope, and the placement and size of the downspouts all depend on the amount of rain water to be carried. The gutters need to be protected against snow and ice damage. Hanging them lower than the projected roofline prevents snow and ice from sliding off barn roofs and knocking the gutters down. Extra hangers for the gutter, as closely spaced as 16 inches, or ice-breaking obstacles on the roof that stop sliding snow are often required to protect the gutters and keep them working properly.

Drip trenches that collect roof water and direct it to a ditch or tile to be carried safely away from the production area often last longer and are cheaper than roof gutters. A gravel trench with a tile line is placed under the drip line of the roof. To avoid contaminating the clean water with manure, the drip trench needs to be fenced out of the production area.

Diversions, berms, or land grading can prevent uphill surface runoff from flowing through the production area. Tile inlets with small storage structures can be used when the surface water cannot be easily moved around the production area. Subsurface drain-

Continued on next page

Fact Sheet #12 (continued)

age should be used to prevent groundwater from surfacing in the production area, adding to the load on the retention structures.

A competent conservation contractor, Soil and Water Conservation District (SWCD) or Natural Resources Conservation Service (NRCS) engineer, or licensed agricultural engineer should design these structures.

Inspection Requirements

The storage sites need to be maintained and monitored. Federal rules require the operators of all large CAFOs to perform weekly inspections of all storm water diversion devices, runoff collection structures, waste storage structures, and manure or runoff transporting systems. They need to conduct daily inspections of waterlines to prevent inadvertent overflows onto production areas or into storage areas. Depth markers or staff gauges need to be installed in the storage areas to determine the available storage capacity, ensuring that a 25-year, 24-hour storm will not overtop the structure. Any

deficiencies or discharges need to be recorded and then addressed as soon as possible.

Record-Keeping Requirements

Federal rules require the operators of all large CAFOs to keep a complete copy of design, inspection, problem correction, and mortality disposal records for the past five years (see *Fact Sheet #6: What CAFO Reports Must I Submit?*).

Compliance Checklist

The following checklist is designed to help you determine if your large CAFO is in compliance with the new federal CAFO regulations. If you answer “No” to any one of these questions, you may not be in compliance with the new rules and may need to take corrective action. States may have additional and/or more stringent requirements, so check with your state permitting authority to identify the requirements that apply to your facility.

<p>1. Is my operation a CAFO?</p> <p>Information to help you answer this question can be found in <i>Fact Sheet #2: Do I Need an NPDES Permit for My Livestock or Poultry Operation?</i></p> <p>If you circled “No,” the new federal regulations still do not apply to your operation. Your state may have special requirements that are more stringent than the federal regulations, so check with your state permitting authority.</p>	Yes	No
<p>2. I have identified all of my production areas.</p> <p>Production areas include open lots, freestall barns, winter feeding areas, cattle alleys, and any other areas where animals, manure, feed, or bedding may contact drinking water, process water, or precipitation. They also include lagoons, holding ponds, and conveyances used to transport or store liquid manure and wastewater. You need to be sure that all of your operation’s production areas meet the wastewater containment and visual inspection requirements in the federal rules.</p>	Yes	No
<p>3. All of my operation’s production areas and liquid manure or wastewater impoundments have been designed, built, maintained, and operated to contain all of the manure, litter, and process wastewater (including storm water), plus runoff and direct precipitation from the 25-year, 24-hour rainfall event.</p> <p>The 25-year, 24-hour precipitation event should be the minimum design storm used to size lagoons, runoff holding ponds, and any conveyances (ditches, berms, channels, terraces, or pipelines) whose failure could result in an illegal discharge of wastewater outside the containment area. The magnitude of these precipitation events varies by location.</p>	Yes	No

Continued on next page

Fact Sheet #12 (continued)

<p>4. I ensure that a responsible employee conducts an inspection of all of the wastewater and runoff conveyances (see Checklist Item #3 above).</p> <p>This weekly inspection will help identify structural problems, leaks or other evidence that the conveyances may fail, and discharge wastewater or rainfall runoff from the production area.</p>	Yes	No
<p>5. I have at least one depth marker in each of the lagoons, holding ponds, or other wastewater storage structures associated with my production area to indicate design volume and minimum capacity necessary to contain the 25-year, 24-hour rainfall event.</p> <p>Depth markers make it easy to determine if liquid levels in these impoundments are within regulatory limits. Reasons to monitor depth markers include maintaining the minimum treatment volume in an aerobic lagoon, ensuring adequate storage capacity for the next precipitation event, or ensuring that an ongoing rainfall event does not overtop an earthen embankment. For more information on installation and use of depth markers, see <i>Fact Sheet #15: Liquid Level Markers for Uncovered Manure Storages and Lagoons</i>.</p>	Yes	No
<p>6. I ensure that a responsible employee inspects all of the depth markers at least once a week.</p> <p>Weekly inspections are the minimum requirement. Electronic instrumentation, available to automate depth measurements, operate emergency signals, and notify key employees, is not a substitute for this weekly visual inspection.</p>	Yes	No
<p>7. I ensure that a responsible employee inspects all wastewater holding ponds, lagoons, and other retention structures at least once a week.</p>	Yes	No
<p>8. I ensure that a responsible employee inspects all water lines in the production areas at least daily.</p> <p>This inspection includes water lines used for both drinking water and cooling. Leaks in these water lines put an extra load on wastewater conveyances and retention structures that were not designed to receive, and store this normally uncontaminated water.</p>	Yes	No
<p>9. Animal mortalities are removed promptly from the production area and are disposed in an acceptable way. They are NOT placed in wastewater impoundments, other liquid manure storage facilities, or process wastewater systems (unless designed specifically to treat mortalities).</p> <p>Proper mortality disposal is vitally important both to protecting water quality and to preserving good community and neighbor relations.</p>	Yes	No
<p>10. I respond quickly to any deficiencies noted in any of the daily and weekly inspections of the production area, water lines, and wastewater impoundments and conveyances.</p> <p>The federal rules do not specify a fixed time interval within which deficiencies must be corrected; the rule's standard is "as soon as possible." Deficiencies in any of these systems represent an increased risk of illegal discharge and should have a high priority relative to other CAFO activities or responsibilities.</p>	Yes	No
<p>11. On the CAFO property, I maintain an active record of all inspections, pond depth measurements, mortalities, and corrective actions pertaining to the production area.</p> <p>According to the federal rules, you are required to keep these records onsite for at least five years from the time they are created.</p>	Yes	No

Continued on next page

Fact Sheet #12 (continued)

12. I also maintain records documenting the design of all manure, wastewater storage, and conveyance systems, including volumes of solids accumulation, treatment and storm water capacity; number of days of storage capacity; and records of any overflows that occur from any of the wastewater storage structures or conveyances, including the date, time, and estimated volume of wastewater released.	Yes	No
13. Where appropriate, my operation's facilities divert clean water away from the production area. This includes rainwater and snowmelt from roofs, parking lots, and other areas outside where the animals are produced, fed, or processed and where manure and wastewater are stored or conveyed. Runoff from outside the production area should be diverted away from the runoff control system unless that system has been specifically designed with a capacity sufficient to handle, store, and dispose of it.	Yes	No

Is Cost Sharing Available?

Through government programs, USDA-NRCS has allocated some money that may be used to cost share the BMPs needed to correctly handle animal manure. Check with your local NRCS or SWCD to see what funds are available and to determine if you qualify. *Fact Sheet #30: Financial and Technical Assistance Available to CAFO Owners/Operators* will help you identify cost share programs for which you may be eligible.

Time Line for Compliance with Production Area Provisions of the New CAFO Rule

The time line for compliance with the new rules is fairly complex. Some provisions take effect upon adoption of the rule on April 14, 2003; others do not take effect until the year 2006. *Fact Sheet #3: How Soon Must I Apply for an NPDES Permit?* details these compliance deadlines and helps you determine what deadlines your CAFO faces. Be sure to contact your state permitting authority for the most up-to-date CAFO permitting information.

Supporting Sections

40 CFR Part 412.30-47 Effluent Limitations Guidelines—Concentrated Animal Feeding Operations (CAFO) Point Source Category.

- Subpart C: Dairy Cows and Cattle Other Than Veal Calves

Summary

CAFO production areas have previously been regulated under the federal CAFO rules and continue to be regulated, with a small number of changes having

been adopted in April 2003. Existing farms that fall under the CAFO rules (see *Fact Sheet #2*) need to implement a nutrient management plan, controlling the runoff from the production area and storing it appropriately. All CAFOs covered by the new rule must comply with its inspection, monitoring, record-keeping, and mortality disposal provisions. States may have additional, more stringent requirements. •

Definition of Terms

Drip trench—A system of channels and berms that collects roof water at the base of the roof, preventing clean water from entering a production area and preventing polluted water from the production area from mixing with the clean roof runoff.

Pasture—An area where living vegetation is maintained for cattle feed. Pastures are not generally considered part of a CAFO.

Vegetated filter strip—A system designed to remove sediment and nutrients from diluted wastewater via overland flow through living vegetation.

Author

Brent Auvermann, Associate Professor of Biological and Agricultural Engineering at Texas A&M University, can be reached at b-auvermann@tamu.edu.

Reviewer

The author wishes to thank Ben Weinheimer, Texas Cattle Feeders Association, for his helpful review of this fact sheet. Any errors or inaccuracies in the fact sheet are the responsibility of the author.

For More Information

Environmental Regulations Related Resources

EPA CAFO Phone Line–202-564-0766

<http://www.epa.gov/npdes/caforule/>–To obtain copy of regulations

<http://www.epa.gov/npdes/afo/statecontacts/>–To obtain state environmental agency contacts

<http://www.epa.gov/agriculture/animals.html/>–To obtain compliance assistance information from EPA

http://cfpub.epa.gov/npdes/contacts.cfm?program_id=7&type=REGION/–To obtain EPA Region Animal Feeding Operation contacts

Land-Grant University Resources

The local contact for your land-grant university Cooperative Extension program is listed in the phone book under “Cooperative Extension” or “(county name) County Cooperative Extension.”

<http://www.reeusda.gov/1700/statepartners/usa.htm/>–To obtain state Cooperative Extension contacts

<http://www.lpes.org/>–To view the Livestock and Poultry Environmental Stewardship (LPES) curriculum resources

USDA Farm Bill Resources

To obtain more information about the Farm Bill 2002, see the USDA-NRCS website at <http://www.nrcs.usda.gov/programs/farmbill/2002/>. You can also contact your local USDA Service Center, listed in the phone book under “U.S. Department of Agriculture,” or your local conservation district.



The LPES educational materials were developed with support from the USDA-CSREES, the U.S. EPA's National Agriculture Compliance Assistance Center, and the University of Nebraska Cooperative Extension at Lincoln, under Cooperative Agreement Number 97-EXCA-3-0642.



MidWest Plan Service
122 Davidson Hall, ISU
Ames, IA 50011-3080

MWPS (MidWest Plan Service), headquartered at Iowa State University, is the primary distributor of LPES curriculum materials. To order the materials online, access their website at <http://www.mwpsHQ.org> and visit the catalog section.

Discounts are offered on LPES materials purchased as package deals or in bulk.