



Livestock and Poultry Environmental Stewardship (LPES) curriculum

CAFO Fact Sheet series

Fact Sheet #26: What Records Must I Maintain for Land Application?

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.

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By Rick Koelsch, University of Nebraska

Introduction

Land application records perform the following two important functions in implementing the regulations associated with Concentrated Animal Feeding Operations (CAFOs): (1) They are critical to the producer's information needs for accurately crediting the nutrient value of manure, and (2) They provide regulatory authorities and the public some degree of assurance of the producer's efforts to comply with regulations. Good records are a critical tool documenting good stewardship of soil and water resources.

Summary of CAFO Regulations

New U.S. Environmental Protection Agency (EPA) regulations define the following minimum required records that must be in place no later than December 31, 2006:

- Results from manure, litter, and process water and soil sampling
- Test methods used to sample and analyze soil and manure, litter, or process wastewater
- Dates manure, litter, or process wastewater is applied to each field
- Weather conditions at the time of application and 24 hours before and after application
- Explanation of the basis for determining manure application rates
- Calculations showing the total nitrogen (N) and phosphorus (P) to be applied to each field, including sources other than manure, litter, or process water
- Total amount of N and P actually applied to each field, including documentation of calculations for the total amount applied
- Methods used to apply the manure, litter, or process water
- Dates of manure application equipment inspection
- Expected crop yields

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Producer Note: CAFO operators must maintain all records for a minimum of five years.

In addition, the EPA rules require:

- All CAFO operators to maintain on-site a copy of its site-specific nutrient management plan (NMP).
- Large CAFO operators only (see *CAFO Fact Sheet #2: Do I Need an NPDES Permit for My Livestock or Poultry Operation?*) to maintain records on the transfer of manure or process wastewater to other persons, providing them with current nutrient analysis and documenting recipient information in records.
- CAFO operators to annually submit a report to the permitting authority (see *CAFO Fact Sheet #6: What CAFO Reports Must I Submit?*)

Since most states have the authority for implementing these CAFO regulations, individual states will define the actual record-keeping requirements expected of livestock and poultry operations. The EPA rules establish a minimum requirement with states having the authority to exceed that minimum. Producers should become familiar with state regulations and the language of the NPDES permit issued by an individual

state when deciding what records are necessary.

The purpose of this fact sheet is to provide livestock and poultry producers with suggestions about the types of records that they might need to maintain to comply with the federal regulations. Use the checklist provided for each set of records to identify information currently collected. Missing checks will provide indications where records should be improved.

Below you will find a recommendation for appropriate records based upon the compliance language contained within the EPA rules (standard text) and *recommended, voluntary records for successfully managing manure resources (italicized text)*. As individual states with permitting authority write their own implementation rules for the CAFO regulations, better guidance may be available on record-keeping requirements to meet individual state needs. The information below is also designed to suggest key topic areas that might serve as file or notebook dividers. In a separate document titled *Sample Forms for Record*

Producer Note: Most states have authority to establish final record-keeping requirements. The NPDES permit issued by an individual state defines the final record requirements.

Soil Analysis Reports

A large CAFO operator must collect and analyze soil samples for P at least once every five years for all fields under the CAFO's control that receive manure. The required information for a soils report includes:

___ Soil P content ___ Date sample received ___ Farm and field ID

The soils report provide the basis for a crop nutrient recommendation. Depending upon the procedure for making crop nutrient recommendations, several additional types of information would be suggested:

___ *Soil nitrate content* ___ *Organic matter* ___ *Soil pH*
___ *Soil sample depth* ___ *Potassium, micro-nutrients, and soluble salts*
___ *Soil test method used*

Manure Sample Reports

All manure sources under the control of a large CAFO operator must be sampled at least once a year with records maintained for:

___ Total manure N content ___ Total manure P content ___ Date sample received

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Actual Nutrient Application Rates

The CAFO regulations require that one's records summarize "actual nutrient application rates" for both organic (manure, litter, and wastewater) and inorganic (commercial fertilizer) sources. A record sheet for actual manure application should include the following information:

- Field name
- Date of application
- Acres covered
- Application rate or total amount (manure)
 - Number of loads for solid manure spreader or slurry applicators and average capacity OR
 - Pump start and stop time and pumping rate for irrigation and towed hose applications OR
 - Depth of application for sprinkler irrigation
- Dilution water addition for irrigation applications
- Application method (*including timing of incorporation relative to application*)
- Weather conditions during application, 24 hours prior to application, and 24 hours after application.
- Setbacks maintained
- Operator initials

A record sheet for fertilizer application should include:

- Field name
- Date of application
- Application amount
- Product applied
- Application method (*including incorporation/surface application*)
- Operator initials

Cropping Season Summary

At the conclusion of a cropping season, field-specific summaries should be prepared. This information provides feedback for altering the NMP for next year. This end-of-the-year summary should include:

- Actual crop yields. Since expected crop yields (required by CAFO regulations) are based upon cropping history, actual crop yields are needed. The method for validating these crop yields (e.g., yield monitor, FSA* validated record, crop consultant report) should also be noted.
- A summary of actual field-specific nutrient application rates should be assembled for each field based upon the above records. This summary may be a copy of the field-specific plan discussed in the "Planned Nutrient Application Rates" updated to include actual manure and nutrient application rates.

Manure Application Equipment Inspections

The EPA CAFO regulations require that a CAFO operator "periodically conduct leak inspections of equipment used for land application of manure, litter, or process wastewater." The required and recommended records supporting these inspections include:

- Date of manure application equipment inspection
- Type of equipment inspection
- Checklist of items reviewed in inspection for potential leaks
- Maintenance performed on land application equipment
- Dates of maintenance

The date of inspections is the only required record-keeping activity for land application equipment inspections. However, unless more detailed information is maintained, this lone requirement has little or no benefit to the producer or the general public.

*U.S. Department of Agriculture's Farm Service Agency

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Manure Transfer to Off-Farm Users

Livestock or poultry operations that import a significant portion of the animal feed or mineral requirements from off-farm sources have the greatest potential risk associated with nutrient accumulation on their farm. To balance the purchases of N (as protein) and P, export of manure is often essential to avoiding accumulations of nutrients within a livestock or poultry operation. Large CAFO operators transferring manure to off-farm users encounter only a few modest regulatory requirements. The end-user should not encounter any restrictions unless the manure is mismanaged. Large CAFO operators must record the transfer of manure to off-farm uses including:

- ___ Date of manure transfer
- ___ Amount of manure transfer
- ___ Name and address of recipient
- ___ Was recipient given copy of most recent manure nutrient analysis report?

A report of the quantity of manure transferred off-farm must be assembled and included with the annual report that is filed with permitting authority (see *CAFO Fact Sheet #6: What CAFO Reports Must I Submit?*).

Crop Nutrient Status Indicators, Operator Training and Certification Programs, and Discharges Associated with Land Application

A variety of other records may be considered that may not be required as part of a farm's records. However, some of these records can be beneficial in managing manure and documenting your farm's efforts to implement a good stewardship ethic. Some options that might be considered include:

- ___ *Records of any measure of crop N status. As producers apply manure at agronomic rates, the risk of reduced crop yield increases. Variation in manure nutrient content, ability to deliver uniform manure applications, and weather conditions (which influence the availability of manure N) all add to the risk of reduced yields. A growing number of tools are available for monitoring the N status of a crop and producing better NMPs that include manure.*
- ___ *Workshops, field days, staff trainings, and other education activities should be recorded for all farm employees. These activities demonstrate a farm's commitment to stewardship as well as contributes to a work force capable of implementing NMPs.*
- ___ *Discharges from equipment used in manure application typically must be reported to the regulatory authority within 24 hours with a follow-up written report prepared within seven days. Check state-specific regulations on reporting. Although a record of those reports is not listed in EPA rules, such documents should be included in a farm's record-keeping systems for nutrient management.*

Time Line for Compliance

The owner of a livestock or poultry operation defined as a CAFO must comply with all nutrient management requirements including the record-keeping requirements by December 31, 2006. ●

Definition of Terms

CAFO—Concentrated Animal Feeding Operation

CNMP—Comprehensive Nutrient Management Plan.

A plan defined by USDA for minimizing nutrient excretion, ensuring proper storage of manure and

manure-contaminated water, applying manure nutrients at agronomic rates, and maintaining appropriate records.

NMP—Nutrient Management Plan. Required for all CAFOs to receive their NPDES permit, includes Best Management Practices (BMPs) and procedures necessary to achieve effluent limitation guidelines (ELGs).

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Definition of Terms (continued)

NPDES–National Pollution Discharge Elimination System. Created by the Clean Water Act to authorize and regulate the discharges of pollutants to waters of the United States.

Permitting Authority–The environmental regulatory agency with responsibility for issuing NPDES permits. In 45 states, the state environmental regulatory agency has this responsibility. In the remaining five states (New Mexico, Idaho, Alaska, Massachusetts, and Oklahoma), the regional EPA office is the permitting authority.

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Reviewers

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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.



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