

CHAPTER 11-56 APPENDIX A

NONPOINT SOURCE POLLUTION CONTROL REQUIREMENTS FOR
AGRICULTURE

1. General Applicability

(a) Requirements defined in this chapter shall be implemented by persons identified in section 11-56-03, as follows:

- (1) The requirements of this Appendix apply to all publicly-owned agricultural lands or facilities comprising 1,000 or more contiguous acres under common ownership or purpose and with operations identified in the specific applicability paragraphs in section 3.
- (2) Other agricultural lands or activities may be subject to the requirements of this Appendix at the discretion of the director based on risk of harm to human or environmental health, as determined by the director. Other agricultural lands or activities determined by the director to be subject to the requirements of this Appendix will be provided written notice by the director.

(b) For all other agricultural lands not required to implement the best management practices or management measures identified in this Appendix, the director encourages voluntary development of a Water Pollution Prevention Plan to facilitate the implementation of the management measures contained in this Appendix.

2. Incorporation of Management Measures into Water Pollution Prevention Plans

(a) The owner or operator of an agricultural activity or facility subject to regulation shall incorporate water pollution reducing management measures into a Water Pollution Prevention Plan. At a minimum, Water Pollution Prevention Plans shall incorporate all appropriate management measures to prevent and control the specific sources of pollution identified in section 3 of this Appendix.

(b) The owner or operator of an agricultural activity or facility subject to this Appendix shall identify which management measures in section 3 are required based upon the specific applicability of each management measure and its subparts. Each management measure identified as being applicable shall be implemented as detailed in the Water Pollution Prevention Plan developed pursuant to this chapter.

(c) Authorized management practices that satisfy management measure requirements shall be identified in the Water Pollution Prevention Plan.

(d) For discharges identified in section 11-56-03 that result from activities identified in this Appendix, where such discharges or activities are subject to an alternative regulatory mechanism that accomplishes the objectives of one or more of the management measures in section 3 of this Appendix, the Water Pollution Prevention Plan may include a reference to the alternative regulatory mechanism in lieu of the specified management measure.

(e) For an owner or operator of an agricultural activity or facility subject to this Appendix who develops and implements a soil conservation plan approved by the local soil and water conservation district, the soil conservation plan shall be considered an equivalent of a Water Pollution Prevention Plan developed to address sediment control

under subsection 3(a) if the soil conservation plan requires implementation of sediment control management measures identified in subsection 3(a), and effectively controls discharges of sediment to State waters. To the extent that such a soil conservation plan approved by the local soil and water conservation district also effectively addresses activities subject to management measures for other potential pollutants identified in subsections 3(b) - 3(e), the soil conservation plan shall be considered an equivalent Water Pollution Prevention Plan for those management measures. Applicable management measures not addressed in the soil conservation plan must be addressed in a Water Pollution Prevention Plan, which shall be submitted to the department following the procedures in section 11-56-06.

3. Management Measures Required for Specific Sources of Pollution

(a) Erosion and Sediment Control Management Measure

(1) Specific Applicability. This management measure applies to agricultural activities that may cause erosion, including, but not limited to:

- (A) Crop production, including specialty crops and nursery crops;
- (B) Agricultural irrigation;
- (C) Grazing and pasturing;
- (D) Developing and/or maintaining orchards;
- (E) Permanent hayland maintenance; and
- (F) Agroforestry.

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Roads, drainage systems, and other infrastructure operated and maintained in support of the above agricultural activities and potentially affecting nearby streams, wetlands, or coastal areas are subject to the requirements of this management measure.

- (2) Purpose. The purpose of this management measure is to preserve soil and reduce the mass of sediment reaching a water body, protecting both agricultural land and water quality.
- (3) General Requirements
 - (A) Design and implement any combination of management practices in paragraph (4) to minimize the mobilization of sediment to surface waters, or
 - (B) Design and install a combination of management and structural practices to settle the settleable solids and associated pollutants in runoff delivered from the contributing area for storms of up to and including a 10-year, 24-hour frequency.
 - (C) All sources of sediment and other water pollutants associated with activities identified in paragraph 3(a)(1) (Specific Applicability) shall be accounted for and mitigated through identification and implementation of appropriate authorized management practices to prevent and abate water pollution to the maximum extent practicable.
- (4) Authorized Management Practices

- (A) Authorized management practices shall be implemented to meet management measure requirements and shall be identified in the Water Pollution Prevention Plan.
- (B) Authorized management practices include but are not limited to:
 - (i) Conservation practice standards pertaining to erosion and sediment control as described in the eFOTG; and
 - (ii) Erosion and sediment control practices identified in *National Management Measures to Control Nonpoint Source Pollution from Agriculture* (EPA, EPA-841-B-03-004, July 2003).

(b) Animal Feeding Operations Wastewater and Runoff Management Measure

(1) Specific Applicability

- (A) This management measure applies to all new animal feeding operations subject to this regulation regardless of size and to all existing animal feeding operations that contain the following number of head or more:

Animal Type	Head
Beef Feedlots	50
Stables (horses)	100
Dairies	20
Layers	5,000
Broilers	5,000
Turkeys	5,000

Animal Type	Head
Swine	100

Existing facilities containing fewer than the number of head listed above are not subject to the requirements of this management measure unless otherwise notified by the director.

- (B) Facilities that are required by Federal regulation 40 CFR 122.23 to apply for and receive discharge permits are excluded. That section applies to "concentrated animal feeding operations," which are defined in 40 CFR 122.23(b). In addition, 40 CFR 122.23(c) provides that the Director of a National Pollutant Discharge Elimination System (NPDES) discharge permit program may designate any animal feeding operation as a concentrated animal feeding operation upon determining that it is a significant contributor of water pollution. This has the effect of subjecting the operation to the NPDES permit program requirements. If an animal feeding operation has an NPDES permit, then the facility covered by the NPDES permit is exempt from this management measure.
- (2) Purpose. The goal of this management measure is to prevent the discharge of wastewater and contaminated runoff to State waters from animal feeding operations.
- (3) General Requirements
 - (A) Contain both the wastewater and contaminated runoff from animal feeding operations that is caused by storms up to and including an acute 25-year, 24-

hour frequency storm event. Storage structures must be of adequate capacity to allow for proper wastewater utilization and constructed so that they are impervious and prevent seepage to groundwater.

- (B) Provide for storage, treatment, and/or application methods such that the monthly volume of wastewater and contaminated runoff produced and stored is, at a minimum, 10% less than the monthly rate of wastewater and contaminated runoff use or disposal. The storage volume necessary to meet this requirement shall be determined using a technical evaluation that addresses the following elements:
 - (i) Information to be used in the design of the open manure storage structure including, but not limited to, the following: minimum storage periods for rainy seasons, additional minimum capacity for chronic/prevailing rainfalls, applicable technical standards that prohibit or otherwise limit land application during unsuitable soil conditions (e.g., saturated ground), planned emptying and dewatering schedules, additional storage capacity for manure intended to be transferred to another recipient at a later time, and any other factors that would affect the sizing of the open manure storage structure.
 - (ii) Climate data for the past 10 years at the area local to the regulated animal feeding operation,



including average monthly precipitation and evaporation rates.

(iii) The number and types of animals, anticipated animal sizes or weights, any added water and bedding, any other process wastewater, and the size and condition of outside areas exposed to rainfall and contributing runoff to the manure storage structure.

(C) Manage stored wastewater, contaminated runoff, and accumulated solids from the facility through an appropriate waste utilization system that is operated and maintained to prevent discharges of wastewater, contaminated runoff, and accumulated solids to State waters.

(4) Authorized Management Practices

(A) Authorized management practices shall be implemented to meet management measure requirements and shall be identified in the Water Pollution Prevention Plan.

(B) Authorized management practices include but are not limited to:

(i) Conservation practice standards pertaining to AFOs as described in the eFOTG; and

(ii) Animal Feeding Operation management practices identified in *National Management Measures to Control Nonpoint Source Pollution*

from Agriculture (EPA, EPA-841-B-03-004, July 2003).

(c) Nutrient Management Measure

(1) Specific Applicability

(A) This management measure applies to activities associated with the application of nutrients to agricultural lands, including manure, wastewater, contaminated runoff, and commercial fertilizers.

(B) Lands that receive manure, wastewater, or contaminated runoff and are subject to the requirements of an NPDES permit for concentrated animal feeding operations are excluded from this management measure.

(2) Purpose. The goal of this management measure is to reduce water pollution caused by nutrients (primarily nitrogen and phosphorous) by minimizing nutrient losses and waste from agricultural lands and activities.

(3) General Requirements

(A) Prevent the discharge of excess nutrients and contaminated storm water to State waters through:

(i) Containment of wastewater and waste products;

(ii) Isolation of wastewater, waste products, or materials from contact with storm water; and

- (iii) Recycling of nutrients through environmentally beneficial methods.
- (B) Nutrient management plans. A site-specific nutrient management plan shall be developed, implemented, and updated as often as necessary to reflect current operational conditions to:
- (i) Apply nutrients at rates necessary to achieve realistic crop yields;
 - (ii) Improve the timing of nutrient application; and
 - (iii) Use agronomic crop production technology to increase nutrient use efficiency.
- (C) Nutrient management plans must contain the following core components:
- (i) Farm and field maps showing acreage, crops, soils, and waterbodies.
 - (ii) Realistic yield expectations for the crop to be grown, based on achievable yields for the crop. Individual producer constraints and yield records for nearby operations may be considered in determining achievable yields.
 - (iii) A summary of the nutrient resources available to the producer, which at a minimum must include: soil test results for pH, phosphorous, nitrogen, and potassium; an appropriate mix of soil (pH, nitrogen, phosphorous,

potassium) and/or plant tissue testing or historic yield response data for a particular crop; nutrient analysis, including the nutrient value and the rate of availability, of fertilizer, manure, sludge, mortality compost, effluent (if applicable), or other source of nutrients; and other significant nutrient sources, such as irrigation water.

- (iv) An evaluation of field limitations based on environmental hazards or concerns, such as lava tubes, shallow soils over fractured bedrock, soils with high leaching or runoff potential, lands near surface water, highly erodible soils, and shallow aquifers.
- (v) Land application setbacks appropriate to prevent the discharge of nutrients based on identified field limitations and other site specific conditions, including practices such as field diversions or other structures that intercept and direct runoff to State waters.
- (vi) Best available information must be used to establish the appropriate mix of nutrient sources and requirements for the crop. The limiting nutrient concept may be used to establish the mix of nutrient sources and requirements for the crop based on a realistic yield expectation.

- (vii) Identification of timing and application methods for nutrients to provide nutrients at rates necessary to achieve realistic crop yields, to reduce nutrient losses to the environment, and to avoid nutrient applications as much as possible during periods of leaching or runoff.
 - (viii) Provisions for the proper calibration and operation of nutrient application equipment.
 - (ix) Schedule for soil testing and/or plant tissue testing to estimate phosphorous, nitrogen, and potassium concentrations.
- (4) Authorized Management Practices
- (A) Authorized management practices shall be implemented to meet management measure requirements and shall be identified in the Water Pollution Prevention Plan.
 - (B) Authorized management practices include but are not limited to:
 - (i) Conservation practice standards pertaining to nutrient management as described in the eFOTG;
 - (ii) Nutrient management practices identified in *National Management Measures to Control Nonpoint Source Pollution from Agriculture* (EPA, EPA-841-B-03-004, July 2003); and

- (iii) Nutrient management methods and practices identified in *Plant Nutrient Management in Hawaii's Soils: Approaches for Tropical and Subtropical Agriculture* (James A. Silva and Raymond S. Uchida (Eds.), University of Hawaii at Manoa, College of Tropical Agriculture and Human Resources, 2000).
- (d) Grazing Management Measure
 - (1) Specific Applicability. The management measure applies to activities on range, irrigated and non-irrigated pasture, and other grazing lands used by domestic livestock. Other grazing lands include woodlands, native pastures, and croplands producing forages.
 - (2) Purpose. The purpose of this management measure is to prevent improper livestock grazing and equipment use that may damage streambanks and shores, riparian vegetation, channels, and the water column. Application of this management measure will reduce the physical disturbance to sensitive areas and reduce the discharge of sediment, animal waste, nutrients, and chemicals to surface waters.
 - (3) General Requirements
 - (A) Implement one or more of the following, as necessary to protect sensitive areas (such as streambanks, wetlands, estuaries, ponds, lake shores, near coastal waters/shorelines, and riparian zones):

- (i) Exclude livestock, including exclusion from diversion ditches, grassed waterways, swales, and similar structures that concentrate and direct runoff from agricultural lands to sensitive areas;
 - (ii) Provide stream crossings or hardened watering access for drinking;
 - (iii) Provide alternative drinking water locations;
 - (iv) Locate salt and additional shade, if needed, away from sensitive areas; and/or
 - (v) Use improved grazing management (e.g., herding) to reduce the physical disturbance and reduce direct loading of animal waste and sediment caused by livestock.
- (B) Achieve either of the following on all range, pasture, and other grazing lands not addressed under subparagraph (A):
- (i) Range and pasture conservation and management practices that apply the progressive planning approach of USDA-NRCS following the standards and specifications contained in the eFOTG that achieve an acceptable level of treatment to reduce erosion; or
 - (ii) Maintenance of the range, pasture, and other grazing lands in accordance with activity plans

established by the Land Division of DLNR, federal agencies managing grazing land, or other designated land management agencies.

- (4) Authorized Management Practices
 - (A) Authorized management practices shall be implemented to meet management measure requirements and shall be identified in the Water Pollution Prevention Plan.
 - (B) Authorized management practices include but are not limited to:
 - (i) Conservation practice standards pertaining to grazing as described in the eFOTG; and
 - (ii) Grazing management practices identified in National Management Measures to Control Nonpoint Source Pollution from Agriculture (EPA, EPA-841-B-03-004, July 2003).
 - (e) Irrigation Water Management Measure
 - (1) Specific Applicability. This management measure applies to activities on irrigated agricultural land, including agricultural crop and pasture land (except for isolated fields of less than 10 acres in size that are not contiguous to other irrigated lands), orchard land, specialty cropland, and nursery cropland.
 - (2) Purpose
 - (A) The goal of this management measure is to reduce nonpoint source pollution of

surface waters caused by irrigation. Application of this management measure will reduce the waste of irrigation water, improve the water use efficiency, and reduce the total pollutant discharge from an irrigation system.

- (B) It is not the intent of this management measure to require the replacement of major components of an irrigation system. Instead, the expectation is that components to manage the timing and amount of water applied will be provided where needed, and that special precautions will be taken to reduce the potential for pollutant transport and discharge.

(3) General Requirements

- (A) To minimize runoff and excessive leaching, operate the irrigation system so that the timing and amount of irrigation water applied match crop water needs. This will require, as a minimum:
 - (i) The measurement of soil-water depletion volume and the volume of irrigation water applied; and
 - (ii) Uniform application of water.
- (B) When chemigation is used, include backflow preventers for wells, prevent chemigated waters from discharging from the edge of the field, and control deep percolation. In cases where chemigation is performed with furrow irrigation systems, Tailwater discharges are prohibited.

- (C) Where limitations or special conditions apply, they must be clearly identified in the facility's Water Pollution Prevention Plan.
- (4) Authorized Management Practices
 - (A) Authorized management practices shall be implemented to meet management measure requirements and shall be identified in the Water Pollution Prevention Plan.
 - (B) Authorized management practices include but are not limited to:
 - (i) Conservation practice standards pertaining to irrigation as described in the eFOTG; and
 - (ii) Irrigation water management practices identified in *National Management Measures to Control Nonpoint Source Pollution from Agriculture* (EPA, EPA-841-B-03-004, July 2003).
- (f) Pesticide Management Measure
 - (1) Specific Applicability
 - (A) This management measure applies to activities associated with the application of pesticides to publicly-owned agricultural lands, including lands subject to the requirements of an NPDES permit for concentrated animal feeding operations, to the extent that such permit requirements do not address pesticide application.

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- (B) Pesticide applications subject to the requirements of an NPDES permit for application of pesticides, including chapter 11-55, Appendix M, are excluded.
- (2) Purpose. The goal of this management measure is to reduce contamination of surface water and groundwater from pesticides and to foster effective and safe use of pesticides without causing degradation to the environment.
- (3) General Requirements
- (A) Use alternative methods for pest control, to the extent practicable.
 - (B) Apply pesticides only when an economic benefit to the producer will be achieved (i.e., applications based on economic thresholds);
 - (C) Apply pesticides efficiently and at times when runoff losses are unlikely;
 - (D) When pesticide application is necessary and a choice of registered materials exists, consider the persistence, toxicity, runoff potential, and leaching potential of products in making a selection;
 - (E) Use appropriate pesticides for the given situation and environment; and
 - (F) Minimize the movement of pesticides from the target area.
- (4) Authorized Management Practices

- (A) Authorized management practices shall be implemented to meet management measure requirements and shall be identified in the Water Pollution Prevention Plan.
- (B) Authorized management practices include but are not limited to:
 - (i) Conservation practice standards pertaining to pest management as described in the eFOTG; and
 - (ii) Pesticide management practices identified in National Management Measures to Control Nonpoint Source Pollution from Agriculture (EPA, EPA-841-B-03-004, July 2003).

