

Agriculture Water Quality Plan¹

Instructions

1. There are two resources that can be used to create an Agriculture Water Quality Plan (AWQP): (1) the Producer Workbook (included), and (2) a web tool that can be accessed at www.bae.uky.edu/awqpt. If you choose to use the Producer Workbook, read the instructions below. NOTE: If you have more than one farm, you should complete an Agriculture Water Quality Plan for each farm.
2. Answer the nine questions on page one of the Producer Workbook to determine if an Agriculture Water Quality Plan is needed for the operation, and if so, which sections of the Producer Workbook to complete.
3. Answer the questions under the sections you were prompted to complete. If you answer yes to a question, refer to the Best Management Practices (BMPs) listed below the question. Use the State Ag Water Quality Plan, available at www.bae.uky.edu/awqpt or at the local conservation district or Extension office, to determine what aspects of the BMPs listed are required. Check the BMPs that you have already implemented. The selected BMPs represent your current AWQP. Take note of additional BMPs that could be installed to your operation, keeping in mind that research has shown that multiple BMPs are often necessary to trap, control, and prevent pollution from leaving your farm.
4. After completing the necessary sections, record all checked BMPs in the My Kentucky Agriculture Water Quality Plan worksheet on page 32. Any additional BMPs and the date they were implemented can be recorded in this worksheet to reflect an updated AWQP.
5. Fill out the Agriculture Water Quality Plan Self Certification Sheet on page 33 and mail or deliver it to your local county conservation district office.
6. Update your AWQP at least every five years, preferably sooner, when you update your KNDOP.

Cost Share & Technical Assistance

For assistance completing an AWQP, see your local county Conservation District office. Technical assistance with BMP implementation is available through the University of Kentucky Cooperative Extension Service and the Natural Resources Conservation Service (NRCS).

Financial assistance with BMPs may be available through the NRCS or the Kentucky Division of Conservation. In many cases, this assistance can offset the majority of the BMP's expense. For more information, contact the local offices of the NRCS or the local Conservation District.

¹Kentucky Agriculture Water Quality Act KRS 224.71-100 through 224.71-140

Nutrient Management Plan²

Instructions

1. If the Producer Workbook for the AWQP suggested Livestock BMP#11, Livestock BMP #15, or Crop BMP#6, you must develop and implement a Nutrient Management Plan (NMP). Use the Nutrient Management Plan Flow Chart to determine which kind is needed: a Kentucky Nutrient Management Plan (KyNMP) or a Comprehensive Nutrient Management Plan (CNMP).
 - If a CNMP is required, a technical service provider with the Natural Resources Conservation Service (NRCS) must prepare the plan.
 - If a KyNMP is required, there are three options for creating a plan: (1) Using the University of Kentucky Cooperative Extension publication ID-211 (included), which requires manually calculating values, (2) an Excel workbook that can be accessed at www.bae.uky.edu/awqpt, which performs the calculations automatically, and (3) hire a fee-for-service consultant to prepare the plan for you. If using option two, ID-211 is still a useful document for assisting with plan preparation and understanding nutrient management concepts.
2. For preparing a KyNMP, complete the necessary worksheets as prompted by ID-211 and follow the KyNMP requirements checklist (included).

NOTE: Producers who have permission to use fields that are not owned or controlled by the operation should develop a land control certification (page 50 of ID-211).

Cost Share & Technical Assistance

Technical assistance with nutrient management is available through the University of Kentucky Cooperative Extension Service, the NRCS, and the Division of Conservation. Cost share may be available to create a CNMP with the NRCS.

²Kentucky Agriculture Water Quality Act KRS 224.71-100 through 224.71-140

KyNMP Requirements

- Follow the guidelines in the University of Kentucky's Extension publication ID-211 to develop your plan.
- Maintain an adopted sequence of crop rotations to utilize nutrients.
- Take soil tests to determine the pH (buffer), pH (water), phosphorous, potassium, zinc, magnesium, and calcium to optimize plant production.
- Analyze animal manure for total nitrogen, phosphate, potash, calcium, and magnesium prior to land application to establish nutrient credits and to formulate application rates.
- Phosphorous-based nutrient management plans require annual soil testing.
- Manage animal manure in a manner that prevents degradation of water, soil, air, and that protects public health and safety.
- Sufficient land must be available for a disposal area without overloading soils or exceeding crop requirements for nutrients.
- Minimize edge-of-field delivery of nutrients where no setbacks are required.
- Use soil tests or refer to University of Kentucky publication AGR-1 to determine annual nutrient and liming recommendations.
- Target realistic yield goals for each crop and forage grown.
- Utilize cover crops to maximize nutrient uptake, prevent groundwater contamination or leaching, and prevent soil erosion.
- Manure applications may take place in the spring, summer, and fall months, providing the appropriate conservation practices are followed (maintaining adequate residue, using cover crops, filter strips, etc.). Do not apply animal manure on frozen or snow-covered land unless conditions allow no other reasonable alternatives and special provisions are made to control runoff and pollution. NOTE: Permitted (KNDOPs) operations cannot apply manures to frozen or snow covered soil.
- Manure should not be applied within 48 hours following a rain or within 12 hours of a forecasted rain.
- Monitor manure levels in storage facilities to assure proper storage capacity, and allow adequate time for emptying and spreading during favorable weather conditions and at times for optimum crop uptake.
- Limit the rate of liquid application through irrigation to 1/2 inch per hour with the total application stopped when soil moisture in the surface six inches is brought to field capacity.
- Liquid applications to pasture and hay land should result in no more than 24% coverage of the plant leaf surface.
- Livestock should be withheld from animal manure application areas until either the plant has added three inches of growth or a rainfall of at least 1/2 inch has occurred since application to wash some of the material for the leaf surface.
- Update your KyNMP every two years.

Soil Test Records

Instructions

1. Collect and submit soil samples every year according to the guidelines in the University of Kentucky Cooperative Extension publication *Taking Soil Test Samples* AGR-16 (included).
2. Maintain records of soil sample results.

Technical Assistance

For assistance with soil sampling, contact the local county Extension office.

Manure Test Records

Instructions

1. Collect and submit manure samples every year according to the guidelines in the University of Kentucky Cooperative Extension publication *Sampling Animal Manure* ID-148 (included).
2. Maintain records of manure sample results.

Technical Assistance

For assistance with manure sampling, contact the local county Extension office.

Kentucky No Discharge Operational Permit³

Instructions

1. Fill out Short Form B if you have an existing agriculture waste handling system (included). If you are planning to construct an agriculture waste handling system, download the Site Survey Request Form from <http://water.ky.gov/permitting/Pages/WastewaterDischarge.aspx> or contact the Kentucky Division of Water at (502) 564-3410.
2. Read all the application instructions then fill out the application and submit as directed.
3. Once the KNDOP is received, read the entire permit, as it contains important information that is required of the operation. See the KNDOP Requirements for a summary (included).
4. Renew your KNDOP every five years.

Definitions

Agricultural Wastes Handling System means a structure or equipment that conveys, stores, or treats manure from an animal feeding operation prior to land application.

Animal Feeding Operation (AFO) Animal feeding operation or "AFO" means a lot or facility, other than an aquatic animal production facility, that meets one of the following descriptions:

- (1) "Large animal feeding operation"
- (2) "Medium animal feeding operation"
- (3) If:
 - (a) Animals other than aquatic animals, have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in a 12 month period; and
 - (b) Crops, vegetation forage growth, or postharvest residues are not sustained in the normal growing season over any portion of the lot or facility;
- (4) Two or more animal feeding operations under common ownership are considered to be a single animal feeding operation because they adjoin each other or if they use a common area or system for the disposal of wastes.

Concentrated Animal Feeding Operation (CAFO) means an AFO that is classified as either medium or large that discharges or intends to discharge pollutants into surface water. Any AFO can be designated as a CAFO upon determining that it is a significant contributor of pollutants to surface water regardless of the number or type of animals present. However, if an AFO does not discharge and does not intend to discharge, then the Cabinet shall not consider the AFO to be a CAFO in accordance with 401 KAR 5:005, Section 25(6).

Land Application means the uniform placement of animal waste on or in the soil by spraying or spreading on the surface, incorporation into the soil, or injection directly beneath the surface.

Large Animal Feeding Operation means an AFO that stables or confines as many as or more than the numbers of animals specified in any of the following categories:

- 700 mature dairy cows, whether milked or dry
- 1,000 veal calves
- 1,000 cattle, other than mature dairy cows or veal calves, includes heifers, steers, bulls, cows or calf pairs
- 2,500 swine, each weighing fifty-five (55) pounds or more
- 10,000 swine, each weighing less than fifty-five (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
- 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 Animal Feeding Operation means an AFO that stables or confines the type and number of animals within any of the following ranges:

- 200 to 699 mature dairy cows, whether milked or dry
- 300 to 999 veal calves
- 300 to 999 cattle, other than mature dairy cows or veal calves, includes heifers, steers, bulls, cows or calf pairs
- 750 to 2,499 swine, each weighing fifty-five (55) pounds or more
- 3,000 to 9,999 swine, each weighing less than fifty-five (55) pounds
- 150 to 499 horses
- 3,000 to 9,999 sheep or lambs
- 16,500 to 54,999 turkeys
- 9,000 to 29,999 laying hens or broilers, if the AFO uses a liquid manure handling system
- 37,500 to 124,999 chickens, other than laying hens, if the AFO uses other than a liquid manure handling system
- 25,000 to 81,999 laying hens, if the AFO uses other than a liquid manure handling system
- 10,000 to 29,999 ducks, if the AFO uses other than a liquid manure handling system
- 1,500 to 4,999 ducks, if the AFO uses a liquid manure handling system

Small Animal Feeding Operation means an AFO not classified as either medium or large AFO.

Water or Waters of the Commonwealth means and includes any and all rivers, streams, creeks, lakes, ponds, impounding reservoirs, springs, wells, marshes, and all other bodies of surface or underground water, natural or artificial, situated wholly or partly within or bordering upon the Commonwealth or within its jurisdiction.

KNDOP Requirements

General Requirements

- Must not have a point source discharge of wastewater from the facility.
- If applicable, the waste materials removed from the settling basin are required to be disposed of according to the requirements of the Division of Waste Management in 401 KAR Chapters 30 through 49.
- Land applications must not result in runoff to a stream.
- An open surface liquid impoundment is required to have a depth marker that clearly indicates the storage capacity.
- The closure of a lagoon must be in accordance with the requirements of 401 KAR 5:005, Section 3(3)(a)2 and 3.
- Any spill or discharge to the waters of the Commonwealth must be reported to the Department for Environmental Protection within 24 hours by calling the appropriate Division of Water Regional Office or if after hours the Cabinet's Environmental Response Line at 1-800-928-2380.

NMP Requirements

- Ensure adequate storage of manure and process wastewater (minimum of 180 days is recommended), including procedures to ensure proper operation and maintenance of the storage facilities.
- Ensure proper management of animal mortalities to ensure that they are not disposed of in liquid manure, stormwater, or process wastewater storage or treatment system. See the University of Kentucky Cooperative Extension publications *On-Farm Disposal of Animal Mortalities* (ID-167) and *On-Farm Composting of Animal Mortalities* (ID-166) for more information.
- Divert clean water away from the production area.
- Prevent direct contact of confined animals with waters of the Commonwealth.
- Ensure that chemicals and other contaminants handled on-site are not disposed of in manure, process wastewater, or storm water storage or treatment system, unless specifically designed to treat chemicals and other contaminants.
- Identify site-specific BMPs to be implemented to control runoff of pollutants to waters of the Commonwealth.
- Identify protocols for testing of manure, process wastewater, and soil.
- Establish protocols to land apply manure or process wastewater in accordance with site-specific nutrient management practices that ensure agricultural utilization of the nutrients in the manure or process wastewater.

Inspection Requirements

- Weekly inspections of all storm water diversion devices, runoff diversion structures, and devices channeling contaminated storm water to the wastewater and manure storage and containment structure.
- Daily inspections of drinking water or cooling water lines.
- Weekly inspections of the manure, litter, and process wastewater impoundments. The inspection must note the level in liquid impoundments as indicated by the depth marker.

Corrective Action Requirement

- A deficiency found as a result of an inspection must be corrected.

Mortality Requirement

- A mortality cannot be disposed of in liquid manure or process wastewater system and must be handled in a way that prevents the discharge of pollutants to surface water.

Land Application Requirements

- Do not make land application to a field that has a slope greater than 25% on any portion of the field.
- Effluent from the spray irrigation field must be contained on the owner's property.
- Land applications cannot be made on snow covered, frozen, or saturated ground, or during precipitation events. Land application cannot be made in a state or national park or forest or nature preserve or in a wellhead protection area approved by the Cabinet, pursuant to 401 KAR 4:220.

Setback Requirements for New Barns, Existing Agriculture Waste Handling System, and Land Application Areas

SETBACK FEATURE ⁽¹⁾	BARN OR LAGOON	LAND APPLICATION AREA	
		Injection	Other Method
Dwelling not owned by applicant, church, school, schoolyard, business, park or other structure to which the general public has access ⁽²⁾	1,500 feet	500 feet	1,000 feet
Incorporated city limit ⁽²⁾⁽³⁾	3,000 feet	1,000 feet	2,000 feet
Lake, river, blue-line stream or karst feature	150 feet	75 feet	150 feet
Water well not owned by applicant ⁽²⁾	300 feet	150 feet	150 feet
Downstream ⁽⁴⁾ water listed as Outstanding State Resource Water, Outstanding National Resource Water or Exceptional Water ⁽⁵⁾	1 mile	750 feet	1,500 feet
Downstream ⁽⁴⁾ public water supply surface water intake	5 miles	1 mile	1 mile
Roadways, primary (state and federal) ⁽²⁾	150 feet	75 feet	150 feet
Roadways, secondary (county) ⁽²⁾	150 feet	75 feet	150 feet
⁽¹⁾ Measured from the edge of the barn, lagoon, or land application area to the nearest edge of the setback feature. ⁽²⁾ Existing at the time the first animal feeding operation permit is issued. ⁽³⁾ For existing operations, land application setbacks do not apply to city limits. ⁽⁴⁾ Measured along gradient. ⁽⁵⁾ Designated Outstanding State Resource Waters (OSRWs) are listed in 401 KAR 10:026, Section 5. Outstanding National Resource Waters (ONRWs) and Exceptional Waters (EWs) are listed in 10:030, Section 1.			

A new barn or lagoon must not be located in:

1. A state or national park or forest or nature preserve.
2. A wellhead protection area approved by the Cabinet, pursuant to 401 KAR 4:220.
3. A 100-year floodplain, unless permitted pursuant to 401 KAR 4:060.
4. A jurisdictional wetland as determined by the Natural Resources Conservation Service (NRCS).
5. A sinkhole or other enclosed depression where subsidence is evident.

Record Keeping Requirements

Maintain the following records on-site for five years from the date they are created:

- Maintain records of the NMP and all the information required by the NMP requirements mentioned above.
- Maintain records of the information required by the permit application (Short Form B).
- Records documenting the inspections required.
- Records documenting an action taken to correct deficiencies. Deficiencies not corrected within 30 days must be accompanied by an explanation of the factors preventing immediate correction.
- Records of mortalities management and practices used by the AFO to prevent the discharge of pollutants to surface water.
- Records documenting the current design of manure or litter storage structures, including volume for solids accumulation, design treatment volume, total design volume, and approximate number of days of storage capacity.
- Records of the date, time, and estimated volume of any overflow.

Maintain the following records on-site for the current year's activity (all of these requirements should be met by keeping an updated KyNMP):

- Expected crop yields.
- The date manure, litter, or process waste water is applied to each field.
- Weather conditions at time of application and for 24 hours prior to and following application.
- Test methods used to sample and analyze manure, litter, process waste water, and soil.
- Results from manure, litter, process waste water, and soil sampling.
- Explanation of the basis for determining manure application rates, as provided in the NRCS Conservation Standard Practice Code 590 for Kentucky or KYNMP.
- Calculations showing the total nitrogen and phosphorus to be applied to each field, including sources other than manure, litter, or process wastewater.
- Total amount of nitrogen and phosphorus applied to each field, including documentation of calculations for the total amount applied.
- The method used to apply the manure, litter, or process wastewater.
- Each date of manure application equipment inspection.

Records

Instructions

1. Use the included forms to make daily and weekly inspections.
2. Note any deficiencies and the corresponding corrective actions taken.
3. Maintain records of mortalities and how they were managed.

If a spill or discharge occurs, call the Environmental Response Line at 1-800-928-2380

<p>Bowling Green Regional Office 1508 Westen Ave. Bowling Green, Kentucky 42104 (270) 746-7475 Fax (270) 746-7865 Attn: Bill Baker</p> <p>Allen Edmonson Logan Warren Barren Grayson Ohio Butler Hart Simpson</p>	<p>London Regional Office 875 South Main St. London, Kentucky 40741 (606) 330-2080 Fax (606) 330-2097 Attn: Robert Miller</p> <p>Bell Jackson Leslie Rockcastle Clay Knox McCreary Whitley Harlan Laurel Owsley</p>
<p>Columbia Regional Office 2751 Campbellsville Rd. Columbia, Kentucky 42728 (270) 384-4734 Fax (270) 384-5199 Attn: Sara Sproles</p> <p>Adair Green Metcalfe Russell Boyle LaRue Monroe Taylor Casey Lincoln Nelson Washington Clinton Marion Pulaski Wayne Cumberland</p>	<p>Louisville Regional Office 9116 Leesgate Rd. Louisville, Kentucky 40222-5084 (502) 429-7122 Fax (502) 429-7125 Attn: Charlie Roth</p> <p>Breckinridge Meade Bullitt Oldham Hardin Shelby Jefferson Spencer</p>
<p>Florence Regional Office 8020 Veterans Memorial Dr., Suite 110 Florence, Kentucky 41042 (859) 525-4923 Fax (859) 525-4157 Attn: Todd Giles</p> <p>Boone Gallatin Owen Bracken Grant Pendleton Campbell Henry Trimble Carroll Kenton</p>	<p>Madisonville Regional Office Madisonville State Office Building 625 Hospital Dr. Madisonville, Kentucky 42431-4683 (270) 824-7529 Fax (270) 824-7070 Attn: Randy Thomas</p> <p>Caldwell Daviess Hopkins Todd Christian Hancock McLean Union Crittenden Henderson Muhlenberg Webster</p>
<p>Frankfort Regional Office 200 Fair Oaks Ln., 3rd Floor Frankfort, Kentucky 40601 (502) 564-3358 Fax (502) 564-5043 Attn: Massoud Shoa</p> <p>Anderson Fayette Jessamine Powell Bourbon Franklin Madison Scott Clark Garrard Mercer Woodford Estill Harrison Nicholas</p>	<p>Morehead Regional Office 525 Hecks Plaza Dr. Morehead, Kentucky 40351 (606) 783-8655 Fax (606) 783-8659 Attn: Danny Fraley</p> <p>Bath Fleming Mason Robertson Boyd Greenup Menifee Rowan Carter Lawrence Morgan Elliott Lewis Montgomery</p>
<p>Hazard Regional Office 233 Birch St., Suite 1 Hazard, Kentucky 41701 (606) 435-6022 Fax (606) 435-6025 Attn: Damon White</p> <p>Breathitt Knott Magoffin Pike Floyd Lee Martin Wolfe Johnson Letcher Perry</p>	<p>Paducah Regional Office 130 Eagle Nest Dr. Paducah, Kentucky 42003 (270) 898-8468 Fax (270) 898-8640 Attn: Jennifer Burnett</p> <p>Ballard Fulton Livingston McCracken Calloway Graves Lyon Trigg Carlisle Hickman Marshall</p>