

401 KAR 5:005. Permits to construct, modify, or operate a facility.

RELATES TO: KRS 224.10-100, 224.16-050, 224.16-060, 224.70-100, 224.70-110, 40 C.F.R. 144.26, 26 U.S.C. 501(c)(3), 42 U.S.C. 300f-300j

STATUTORY AUTHORITY: KRS 224.10-100(5), 224.10-110, 224.16-050, 224.16-060, 224.70-100, 224.70-110

NECESSITY, FUNCTION, AND CONFORMITY: KRS 224.10-100 requires the cabinet to develop and conduct a comprehensive program for the management of water resources, to issue permits for the construction, modification, or extension of water treatment systems, and to provide for the prevention, abatement, and control of water pollution. This administrative regulation establishes administrative procedures for the issuance of permits for the construction, modification, and operation of facilities authorized by KRS Chapter 224 and establishes conditions for construction of facilities under 401 KAR Chapter 5. This administrative regulation also establishes a schedule of fees to recover the costs of issuance for certain classes of permits.

Section 1. Applicability.

(1) This administrative regulation shall apply to an owner and an operator of a sewage system, except:

(a)

1. A septic tank with a subsurface discharge;
2. A pretreatment facility regulated by a pretreatment program or intermunicipal agreement, approved pursuant to 401 KAR 5:055; or
3. An authorization by permit or rule that is prepared to assure that underground injection will not endanger a drinking water supply, pursuant to the Safe Drinking Water Act, 42 U.S.C.300f-300j, and that are issued pursuant to a state or federal Underground Injection Control program; and

(b) An underground injection control well that is permitted pursuant to 40 C.F.R. 144 if the permit:

1. Is protective of public health and welfare; and
2. Prevents the pollution of ground and surface waters.

(2) Unless exempted pursuant to subsection (3)(b) of this section or paragraph (a) of this subsection, a person shall not construct, modify, or operate a facility without having received a permit from the cabinet.

(a) A construction or modification permit shall not be required for maintenance replacement for components of an existing facility or for changes that do not affect the treatment processes of the facility, but shall be required for replacement of an entire wastewater treatment plant (WWTP).

(b) The operational permit provisions of Section 27 of this administrative regulation shall be satisfied by those facilities that have a valid KPDES permit.

(3) This subsection shall apply to an agricultural waste handling system, industrial WWTP, or a stormwater WWTP.

(a) The following requirements shall apply to an agricultural waste handling system:

1. An agricultural waste handling system that conveys, stores, or treats manure from a concentrated animal feeding operation shall obtain a:
 - a. Permit to construct or modify the facility, pursuant to Sections 2 and 24 of this administrative regulation; and
 - b. KPDES permit; and
2. All other agricultural waste handling systems shall obtain a:
 - a. Permit to construct, modify, or operate the facility pursuant to Sections 2, 24, 25, 27, and 30(1) of this administrative regulation; and
 - b. Kentucky No Discharge Operational Permit (KNDOP).

- (b) The following shall apply to industrial wastewater treatment plants (IWWTPs):
1. An IWWTP with a closed loop system or a system that uses spray irrigation for disposal shall:
 - a. Obtain a KNDOP permit;
 - b. Comply with Sections 2, 25, 27, and 30(1)(e) through (h) of this administrative regulation; and
 - c. Not be required to obtain a permit to construct or modify the facility;
 2. An IWWTP with a discharge to the waters of the Commonwealth shall:
 - a. Comply with Section 4(2) of this administrative regulation;
 - b. Obtain a KPDES permit to discharge into the waters of the Commonwealth;
 - c. Comply with any other applicable standard or requirement of 401 KAR Chapter 5; and
 - d. Not be required to obtain a permit to construct or modify the facility; and
 3. A sewer line that conveys wastewater to an IWWTP shall not be required to obtain a construction permit.
- (c) The following requirements shall apply to a WWTP that collects, conveys, or treats only stormwater:
1. A permit to construct or modify the facility shall not be required for a WWTP that collects, conveys, or treats only stormwater and discharges into the waters of the Commonwealth.
 - a. These facilities shall comply with 401 KAR 5:037 through 5:080 and 401 KAR 10:026 through 10:031.
 - b. 401 KAR 5:060 establishes if these facilities shall obtain a KPDES permit.
 2. A WWTP that collects, conveys, or treats only stormwater and does not discharge into the waters of the Commonwealth shall obtain an operational permit pursuant to Sections 2, 25, 27, and 30(1)(e) through (h) of this administrative regulation.

Section 2. Application Submittal.

- (1) An application to construct, modify, or operate a facility, or renew the operational permit for a facility shall be submitted on the applicable forms established in this subsection and shall include the applicable supporting information pursuant to Section 3 of this administrative regulation, applicable construction permit fees pursuant to Section 5 of this administrative regulation, applicable modification or operating permit fees, and plans and specifications for the proposed construction or modification pursuant to Section 6 of this administrative regulation.
- (a) For construction of a sewer line extension, the applicant shall submit a completed Construction Permit Application for Clean Water Collection System, DEP No. 7071-S1 (4/2018).
- (b) For construction of a WWTP or WWTP with a sewer line with a direct discharge, the applicant shall submit or shall have submitted:
1. The completed KPDES applications pursuant to 401 KAR 5:060; and
 2. A completed Construction Permit Application for Wastewater Treatment Plant, DEP No. 7071-W1 (4/2018).
- (c) For a WWTP construction project without a discharge other than an agricultural waste handling system, the applicant shall submit:
1. A completed Construction Permit Application for Wastewater Treatment Plant, DEP No. 7071-W1 (4/2018); and
 2. A completed Kentucky No Discharge Operational Permit Application, DEP 7033-ND (3/2018).
- (d) For an operational permit or renewal of a Kentucky No Discharge Operational Permit (KNDOP) other than an agricultural waste handling system, the applicant shall

submit a completed Kentucky No Discharge Operational Permit for Closed Loop and Spray Irrigation Systems Application, DEP 7033-ND (3/2018).

(e) For construction, renewal, modification, or operation of agricultural waste handling systems that do not discharge and do not intend to discharge, the applicant shall submit a completed Kentucky No Discharge Operational Permit Application for Agricultural Wastes Handling Systems, Short Form B, DEP 7033-B-ND (3/2018).

(f) For construction of minor modifications to a WWTP, the applicant shall submit a completed Construction Permit Application for Wastewater Treatment Plant, DEP 7071-W1 (3/2018).

(g) For WWTP construction projects with a discharge for an individual residence, the applicant shall submit a completed notice of intent for coverage under a general permit issued pursuant to 401 KAR 5:055.

(h) For operational permits or renewals of operational permits for publicly owned sewer systems that have at least 5,000 linear feet of sewer line and that discharge to a sewer system or a WWTP that is owned by another person, the applicant shall submit a completed Kentucky Inter-System Operational Permit Application, DEP 7103 (3/2018).

(2) Signatures.

(a) An application and all reports required by the permit shall be signed as established in 40 C.F.R. 122.22(a) through (c)..

(b) Certification. A person signing a document in accordance with paragraph (a) of this subsection shall make the following certification: "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for known violations."

Section 3. Application; Construction Permit Supporting Information. For those facilities required to submit a Construction Permit Application for Wastewater Treatment Plant or Construction Permit Application for Clean Water Collection System, the following information shall be submitted with the application pursuant to Section 2 of this administrative regulation:

(1)

(a) The applicant shall identify who will inspect and certify that the facility under construction conforms to the plans and specifications approved by the cabinet in accordance with this administrative regulation.

(b) Facilities designed by an engineer shall be inspected and certified by an engineer;

(2) The applicant shall provide:

(a) An estimate for the cost of the facility and the sources of project funding;

(b) A USGS 7.5 minute topographic map with the proposed project site identified;

(c) The North American Datum 1983 (NAD 83), degree, minutes, and seconds measurement of the proposed project's latitude and longitude; and

(d) An estimate, and the basis for the estimate, for the average daily flow added by the proposed project;

(3) Closure plan.

(a) If an existing facility or a portion of a facility will be taken out of service, the applicant shall submit a closure plan discussing the following items:

1. How the facility will be constructed and how the sewage will be diverted to the new construction without a bypass to a stream. If a bypass is unavoidable during construction, the applicant shall submit:

a. An explanation of why construction cannot occur without the bypass;

b. An estimate of the shortest duration for the construction to be completed;

- c. A description of all equipment, material, labor, and any other item necessary to complete the construction; and
 - d. An estimate of when the necessary items for the construction will be on-site;
 - 2. How the contents of the facility will be removed and properly disposed;
 - 3. How any remaining sludge will be removed and properly disposed;
 - 4. How the abandoned facility will be removed or filled and covered; and
 - 5. How the abandoned sewers will be plugged and manholes filled and covered.
- (b) If an existing WWTP discharge is eliminated, the owner of the WWTP shall submit a completed No Discharge Certification, DEP 7032-NDC (3/2018), within thirty (30) days after the elimination of the discharge;
- (4) Preliminary submittal. Applicants for WWTP construction permits may submit the following information prior to formal submittal of the construction application, to allow the applicant to receive a preliminary determination on the suitability of the proposed discharge location and preliminary effluent limits used in the design of the facility.
- (a) If the information in this subsection is not submitted prior to the formal submittal, the information shall be submitted with the construction application.
 - (b) The preliminary determination shall be valid for up to one (1) year after issuance of the preliminary determination or until the issuance of the KPDES permit, whichever occurs first.
 - (c) The preliminary determination shall not be a guarantee of final permit limits and may be changed as a result of information presented during the public notice phase of the KPDES permitting procedure.
 - (d) The preliminary effluent limits shall be contingent upon the validity, accuracy, and completeness of the following information that the applicant shall submit:
 - 1. A reproducible copy of a USGS 7.5 minute topographic map with the projected service area outlined, the proposed WWTP location, and the discharge point identified on the map;
 - 2. A letter from the regional planning agency stating whether the applicant's project is compatible with the regional facility plan or water quality management plan;
 - 3.
 - a. For a new or an expansion of an existing regional facility pursuant to 401 KAR 5:006, a regional facility plan or water quality management plan.
 - b. The planning requirements of Recommended Standards for Wastewater Facilities, 2014 Edition, A Report of the Wastewater Committee of the Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, 2014 (Ten States' Standards) shall be satisfied by the cabinet's approval of a regional facility plan or a water quality management plan;
 - 4. For a WWTP project, a demonstration that the users of the proposed WWTP cannot be served by an existing regional facility. The applicant shall provide a detailed evaluation of alternatives by conducting a twenty (20) year present worth cost analysis.
 - a. The distance criteria for determining availability shall not apply to a WWTP with an average daily design capacity less than or equal to 1,000 gpd.
 - b. The distance shall be measured along the most feasible route of connection to a point where the downstream sewer has capacity to carry the additional flow; and
 - 5. An estimate and the basis for the estimate of the average daily flow added by the proposed project;
- (5) For a WWTP project, the applicant shall submit the following influent design values:
- (a) Average daily flow;
 - (b) Peak daily flow;
 - (c) Peak hourly flow;
 - (d) Peak instantaneous flow;

- (e) BOD;
 - (f) Influent suspended solids;
 - (g) Phosphorus; and
 - (h) Ammonium nitrogen (NH₃-N);
- (6) For a WWTP project, if the discharge point of a proposed WWTP fails to coincide with a stream indicated as a blue line on a USGS 7.5 minute topographic map, the applicant shall demonstrate that the applicant has a recorded deed, recorded other right of ownership, or recorded right of easement to discharge the applicant's effluent across any land owner's property that comes between the point of discharge and a blue line stream;
- (7) For a WWTP project, the applicant shall submit a copy of the plat or survey clearly indicating the property boundaries, the position of the proposed facility, and the position of the dwellings within 200 feet of the WWTP;
- (8) For a WWTP project, the applicant shall provide a sludge management plan that includes the method of sludge processing and ultimate sludge disposal;
- (9) For a WWTP project, the applicant shall indicate that laboratory services shall be provided for self-monitoring and process control to ensure that the WWTP operation complies with the permit; and
- (10) For a WWTP project, the applicant shall submit:
- (a) A schematic drawing of the WWTP layout and detailed explanation of the proposed facility and its method of operation;
 - (b) The WWTP's reliability category and a demonstration of how the WWTP complies with the reliability requirements in Section 13 of this administrative regulation; and
 - (c) The design calculations used to size the unit processes.

Section 4. Application; Preliminary Considerations.

- (1) A permit shall not be granted to a facility that is not compatible with a regional facility plan or with a water quality management plan approved by the cabinet or the U.S. EPA.
- (2) A permit shall not be granted to construct a new or expanded wastewater treatment plant five (5) miles or less upstream of a surface water intake.
- (a) The cabinet may issue a variance to the five (5) mile limitation established in this subsection if the applicant demonstrates that the:
- 1. Proposed wastewater treatment plant incorporates design and reliability features necessary to protect water quality at surface water intakes located five (5) miles or less downstream of the proposed wastewater treatment plant; and
 - 2. Wastewater treatment plant discharge shall not significantly affect the quality of the water at the downstream source water intake.
- (b) An applicant for a variance on the five (5) mile limitation established in this subsection to construct a new or expanded wastewater treatment plant shall submit to the cabinet a plan of study describing in detail how the applicant plans to undertake the demonstration required by subparagraph (a) of this subsection. At a minimum the plan of study shall include the:
- 1. Methodologies to be used;
 - 2. Source and extent of existing data to establish quantitative and qualitative background conditions or tentative plan to generate a data base that will establish quantitative and qualitative background conditions;
 - 3. Parameters to be measured and equipment to be used for measurement and analysis;
 - 4. Means by which the discharge flow and resulting plume will be simulated to include estimates of maximum concentrations expected at the discharge point and the downstream surface water intake; and

5. Distribution of instream sampling points and the frequency at which samples will be taken.
- (c) An applicant for a permit to construct a new or expanded wastewater treatment plant shall not commence field work on the demonstration required by subparagraph (a) of this subsection until the plan of study has been reviewed and approved by the cabinet.
- (d) An applicant for a permit to construct new or expanded wastewater treatment plant greater than five (5) miles upstream of a surface water intake may be required to demonstrate that the proposed wastewater treatment plant discharge will not significantly affect the quality of the water at the downstream surface water intake.
- (3) A new open-top component of a WWTP shall not be located within 200 feet of an existing dwelling or property line; except:
- (a) A WWTP that serves an individual residence shall not be required to be at least 200 feet from the dwelling that it serves; and
- (b) An open-top component of a WWTP may be located within 200 feet of another dwelling that the WWTP does not serve or a property line if:
1. The WWTP or component is enclosed within a building that controls odors and dampens noise; or
 2. The applicant demonstrates that an equivalent method for noise and odor control shall be provided.
- (4) A discharge point or direct discharge into a wellhead protection area shall comply with Section 4(2) of this administrative regulation if that public drinking water well or spring is under the direct influence of surface water.
- (5) The initial suitability of a location for a proposed discharge point or spray irrigation field shall be determined by the cabinet after site inspection. In determining the suitability of the location, the cabinet shall consider the:
- (a) Distance to the nearest dwelling;
- (b) Distance to water intake used for a public water supply;
- (c) Downstream land use;
- (d) Physical characteristics and current use of the stream;
- (e) Physical characteristics of the proposed spray field including karst topography;
- (f) Need for easements;
- (g) Location of property boundaries; and
- (h) Other items consistent with this administrative regulation and KRS Chapter 224.
- (6) If the discharge from the WWTP enters a sinkhole directly or enters a disappearing stream, the applicant shall submit a proposal for a groundwater tracer study or results from a previously conducted study to the cabinet.
- (a) The cabinet shall accept a groundwater tracer study or a proposal for a groundwater tracer study if it is sufficiently scientifically rigorous to establish if a hydrologic connection exists with:
1. Surface waters that may result in additional or more stringent permit limitations;
 2. Domestic water supply intakes within five (5) miles; and
 3. Drinking water wells within five (5) miles.
- (b) The cabinet shall notify that applicant of the cabinet's acceptance or denial of a proposed groundwater tracer study.
- (c) If the cabinet accepts a proposal for a groundwater tracer study, the applicant shall conduct the groundwater tracer study and submit the completed groundwater tracer study to the cabinet.
- (d) The cabinet shall issue, deny, or modify the permit based upon the findings of a scientifically rigorous groundwater tracer study.
- (7) The cabinet may condition or deny a permit to construct or expand a facility based on its compatibility with a regional facility plan or the availability of a regional facility.

- (a) Permits to construct, expand, or operate a sewage system shall require connection to a regional facility if one (1) becomes available and shall not be renewed, reissued, or modified to remove that requirement unless a regional facility is no longer available.
- (b) The distance criteria to determine if a regional facility is available shall be measured along the most feasible route of connection to a point where the downstream sewer has capacity to carry the additional flow.
- (8) Pursuant to 401 KAR 5:075, the cabinet may coordinate issuance of a construction permit for WWTPs that require a new KPDES permit or modification to a KPDES permit with the issuance of the KPDES permit to ensure that public comments received as a result of the public notice requirements of 401 KAR 5:075 shall be considered in the issuance of the construction permit.
 - (a) The cabinet may also coordinate issuance of construction approval for the associated sewer lines with the issuance of the construction permit for the WWTP.
 - (b) The cabinet may condition or deny the construction permit based on those public comments.
- (9)
 - (a) The cabinet shall issue a notice of deficiency for the deficiencies in the application, fees, supporting information, or plans and specifications.
 - (b) Failure of the applicant to respond to a notice of deficiency within thirty (30) days shall result in the application being terminated without the issuance of a construction permit.

Section 5. Fees.

- (1) Except as specified in KRS 224.10-100, 224.16-050, and subsection (5) of this section, the applicant shall submit a construction permit fee as provided in subsection (4) of this section with the construction permit application and any applicable KPDES fee.
- (2) If the cabinet denies a construction permit for a WWTP or sewer line, the fee for the construction permit shall be retained by the cabinet, unless the fee is for a WWTP that serves only an individual residence.
- (3) The applicant shall make checks or money orders payable to the Kentucky State Treasurer.
- (4) Construction permit fees shall be as established in the table in this subsection, except as provided in subsection (5) of this section.

Facility Category	Construction Permit Fee
Large Facility: WWTP	\$1,800
Intermediate Facility: WWTP	\$900
Small Facility: WWTP	\$450
Minor Modification to a WWTP:	\$200
Small Facility for Nonprofit Organizations pursuant to KRS 224.16-050(5):	\$50
Large Facility: Sewer Lines	\$800
Intermediate Facility: Sewer Lines	\$400
Small Facility: Sewer Lines	\$200

- (5) Fees established in this section shall not apply to an agricultural waste handling system or to a renewal of a KNDOP permit.

(6) The WWTP fee shall apply to the WWTP project and sewers or pump stations located on the plant property.

(a) A sewer fee shall apply to all sewers, force mains, and pump stations that are bound together as one (1) set of plans.

(b) If a WWTP project includes sewers, force mains, or pump stations located off of the plant property, at least two (2) fees shall be submitted.

(7) To qualify for the reduced fee in subsection (4) of this section, nonprofit organizations shall submit proof that they are qualified pursuant to 26 U.S.C. 501(c)(3).

Section 6. Plans and Specifications.

(1) The applicant shall submit to the cabinet at least one (1) set of detailed plans and specifications for the facility and one (1) digital copy. Plans for gravity sewer lines and force mains shall include a plan view and a profile view.

(2) The cabinet may request additional information as is necessary to evaluate the facility to ensure compliance with this administrative regulation.

(3) If cabinet approval is obtained, changes shall not be made to the plans and specifications that would alter or affect the location, capacity, type of treatment process, discharge location, or quality of effluent without issuance of a modified permit from the cabinet.

(4) If a proposed facility will become a part of a sewer system served by a regional facility or has a projected average daily design capacity of 10,000 gpd or more, the plans and specifications shall be prepared, stamped, signed, and dated by a professional engineer.

(5) The plans shall be accompanied by engineering calculations necessary for the understanding of the basis and design of the facility.

(6) If a proposed facility's design capacity is less than 10,000 gpd, the cabinet may require the plans to be prepared, stamped, signed, and dated by a professional engineer if there is not sufficient operating data available from previous similar installations. Operation data shall demonstrate that water quality standards have not been violated and that there have not been significant operational problems.

Section 7. Design Considerations.

(1)

(a) Facilities, except an extended aeration package WWTP with an average daily design capacity less than 100,000 gpd, shall be designed in accordance with the Recommended Standards for Wastewater Facilities, 2014 Edition, A Report of the Wastewater Committee of the Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, 2014, commonly referred to as Ten States' Standards.

1. A deviation from the Ten States' Standards requirements may be approved if the applicant submits a written request for a deviation with the basis for the request pursuant to this paragraph.

2. The basis for the deviation request shall be supported by current engineering practice such as that found in Wastewater Engineering: Treatment and Reuse, Metcalfe and Eddy Inc., 5th Edition (2013).

3. Design calculations and other supporting documentation to support the deviation shall be submitted to the cabinet.

(b) Other practices may be required if necessary for the protection of public health and the environment.

(c) Other practices may be approved by the cabinet if sufficient operational experience is available from previous similar installations to indicate operational problems have not occurred, that water quality standards have not been violated, and design

calculations and documentation to support the other practice have been submitted to the cabinet.

- (2) The applicant shall demonstrate that the effluent from a proposed facility shall:
 - (a) Protect those minimum conditions listed in 401 KAR 10:031 that are applicable to all waters of the Commonwealth;
 - (b) Not cause those waters designated by 401 KAR 10:026 or categorized by 401 KAR 10:030 to be of lesser quality than the numeric criteria applicable to those waters in 401 KAR 10:031 or the requirements of 401 KAR 10:030; and
 - (c) Be in accordance with any facility requirement established in 401 KAR Chapter 5.
- (3) Each WWTP shall have a flow measuring device at the plant capable of measuring the anticipated flow, including variations, with an accuracy of \pm ten (10) percent.
 - (a) The flow measuring device shall measure all flow discharged by the WWTP including any bypasses.
 - (b) An indicating, recording, and totalizing flow measuring device shall be installed at each large WWTP.
 - (c) A flow measuring device for new large WWTPs shall meet the requirements of Section 12 of this administrative regulation.
- (4) A bypass or overflow structure of any type shall not be constructed in a sewer line or pump station or at a WWTP unless construction of the bypass or overflow structure is necessary to prevent loss of life, personal injury, or severe property damage and there is not an alternative.

Section 8. Requirements for Sewer Line Extensions.

- (1) If the applicant does not own all of the proposed sewer line extension, the applicant shall identify the owner and the portion of the sewer line extension owned by the other person.
- (2) The applicant shall submit letters from the owner of the:
 - (a) Sewer line extension stating that the owner shall accept operation and maintenance responsibilities for the sewer line extension as it is constructed;
 - (b) Sewer system stating that the owner approves the connection and accepts responsibility for the additional flow; and
 - (c) WWTP stating that the owner approves the connection and accepts responsibility for the additional flow.
- (3)
 - (a) The applicant shall demonstrate that the portion of the sewer system used by the connection has adequate capacity to transport the current and anticipated peak flow to the WWTP and that the portion of the sewer system used by the connection shall not be subject to excessive infiltration or excessive inflow.
 - (b) The cabinet may deny a sewer line extension for that portion of the sewer system if the portion of the system is subject to excessive infiltration or excessive inflow unless a plan for investigation and remediation that addresses these conditions has been submitted and is being implemented.
- (4)
 - (a) The applicant shall demonstrate that the WWTP that receives the waste has adequate capacity to treat the current and the anticipated flow and is not subject to excessive infiltration or excessive inflow.
 - (b) The cabinet may deny the sewer line extension if the WWTP does not have adequate capacity to treat the flow or is subject to excessive infiltration or excessive inflow unless a plan for investigation and remediation that addresses these conditions has been submitted and the plan is being implemented.
- (5) The entrance of groundwater into, or loss of waste from, a new gravity sewer line shall be limited to 200 gpd per inch of diameter per mile of the gravity sewer line and

shall include manholes, gravity sewer lines, and appurtenances.

(6)

(a) The integrity of a new gravity sewer line shall be verified by either the infiltration-exfiltration or low pressure air testing method.

1. An infiltration-exfiltration test shall be performed with a minimum positive head of two (2) feet.

2. A deflection test shall be performed for each new flexible pipe; pipe deflection shall not exceed five (5) percent.

3. Each new manhole shall be tested for watertightness.

(b) The integrity of a new force main shall be verified by leakage tests. The applicant shall describe the proposed testing methods and leakage limits in the specifications submitted with the permit application.

(7) The construction of a new combined sewer shall not be permitted unless it is a consolidation sewer, flood relief sewer, or a replacement of a combined sewer that:

(a) Conforms with the long-term CSO control plan that complies with the Combined Sewer Overflow (CSO) Control Policy, U.S. EPA, 59 Federal Register 18688, April 1994;

(b) Enhances water quality; and

(c) Protects public health and safety.

(8) A gravity sewer line and a force main shall be designed and constructed to give mean velocities, when flowing full, of not less than two and zero-tenths (2.0) feet per second.

(a) The roughness coefficient used in the Manning or Kutter's formula shall be 0.013, or the "C" factor used in the Hazen-Williams Formula shall be 100.

(b) If the specifications allow only plastic pipe, a roughness coefficient of 0.011 or a "C" factor of 120 may be used.

(c) A roughness coefficient between 0.013 and 0.011 may be used for other pipe materials if sufficient documentation of experimental testing is submitted to the cabinet and if the testing supports the use of the design roughness coefficient.

(9) A gravity sewer line and a force main shall have a minimum of thirty (30) inches of cover or provide comparable protection.

(10) If a gravity sewer line and a force main are to be constructed in fill areas, the fill areas shall be compacted to ninety-five (95) percent density as determined by the Standard Proctor Density test or to a minimum of ninety (90) percent density as determined by the Modified Proctor Density test prior to the installation of the sewer lines.

(11) The minimum diameter for a conventional gravity sewer line shall be eight (8) inches, except that:

(a) The minimum diameter for an extension to an eight (8) inch or larger sewer line if a future extension is not feasible shall be six (6) inches;

(b) The minimum diameter for an extension to a six (6) inch sewer line shall be six (6) inches; and

(c) A sewer line shall be sized based upon engineering calculations consistent with current engineering practices.

(12) A manhole shall be provided at the junction of two (2) building sewers. This subsection shall not apply to building sewers that serve a single-family residence.

(13) The following building sewers shall be exempt from the requirements of this administrative regulation:

(a) A gravity sewer that:

1. Discharges directly to the sewer main; and

2. Serves a single building; and

(b) A force main sewer, regardless of the location of the pump station that:

1. Discharges directly to a gravity sewer main; and

2. Serves a single building.

(14) Except as provided in paragraph (b) of this subsection, a sewer line shall be located at least fifty (50) feet away from an intermittent or perennial stream except where the sewer alignment crosses the stream.

(a) The distance shall be measured from the top of the stream bank.

(b) The applicant may request a variance from the requirement established in this subsection.

(15) A gravity sewer line and a force main that cross streams shall be constructed by a method that maintains normal stream flow and allows for a dry excavation.

(a) Water pumped from the excavation shall be contained and allowed to settle prior to reentering the stream.

(b) Excavation equipment and vehicles shall operate outside of the flowing portion of the stream.

(c) Spoil material from the sewer line excavation shall not be allowed to enter the flowing portion of the stream.

(16) A pump station wetwell shall be sized so that, based on the average flow, the time to fill the wetwell from the pump-off elevation to the pump-on elevation shall not exceed thirty (30) minutes.

(17) A pump station wetwell shall have a vent.

(18) A pump station shall provide a minimum of two (2) hours of detention, based on the average design flow, above the high level alarm elevation or provide an alternate source of power with wetwell storage providing sufficient time for the alternative power source to be activated.

(19) Each high point in the force main shall have an automatic air release valve.

(20) The applicant shall submit a performance curve for a proposed pump station.

(21) A simplex design shall be used only for a pump station that serves an individual residence or business, and a spare pump shall be available for immediate installation.

Section 9. Municipal Water Pollution Prevention Program. This section applies to owners of regional WWTPs, sewer systems served by regional WWTPs, and political subdivision facilities with KISOPs.

(1) For each regional WWTP, the cabinet shall review the WWTP's reported monthly flows and organic loads for the most recent twelve (12) months. If the annual average flow or organic load, or for systems with combined sewer lines the lowest monthly flow and associated organic load, exceed the following values, the cabinet shall advise the owner of the WWTP of the need to address the potential overload condition pursuant to subsections (2) and (3) of this section:

(a) For a regional WWTP with a design capacity of ten (10) mgd or less, ninety (90) percent of the WWTP's average daily design capacity; or

(b) For a regional WWTP with a design capacity of more than ten (10) mgd, ninety-five (95) percent of the WWTP's average daily design capacity.

(2) The cabinet shall give written notice to the owner of the WWTP that the wastewater collection system shall not accept any additional flow until the owner of the WWTP:

(a) Agrees to address the potential overload condition established in subsection (1) of this section in accordance with subsection (3) of this section; or

(b) Demonstrates to the cabinet that the additional flow shall not result in an increase in monthly flows at the WWTP and receives cabinet approval to accept the additional flow.

(3) The cabinet shall deny the approval of a sewer line extension until the owner of the WWTP agrees to address the potential overload condition identified in subsection (1) of this section. The owner shall address the condition by:

(a)

1. Demonstrating, with supporting documentation, that the average daily design capacity of the plant is greater than the permitted amount.
2. The cabinet shall review the request and if justified, shall issue a revised average daily design capacity for the WWTP by issuing a modification to the KPDES permit;
- (b) Expanding the WWTP to a size sufficient to handle the anticipated flows and loads; or
- (c) Performing other remedial measures that address the condition.
- (4) The cabinet shall deny a sewer line extension that is of sufficient flow or adds load sufficient to exceed the remaining design capacity of the WWTP or exacerbate water quality problems until the owner of the WWTP agrees to address the design capacity or water quality problem.
- (5) The owners of the following facilities shall conduct a study of the sewer system or the affected portion of the sewer system that complies with subsections (5) and (6) of this section:
 - (a) A regional WWTP with a reported average flow or organic load that exceeds the percent identified in subsection (1)(a) or (b) of this section, as applicable, or a political subdivision KISOP facility that either:
 1. Receives more than 275 gallons per capita per day of sewage flow based on the maximum flow received during a twenty-four (24) hour period exclusive of industrial flow; or
 2. Receives more than 120 gallons per capita per day of sewage flow based on the annual average of daily flows exclusive of industrial flow; or
 - (b) If subject to excessive infiltration or excessive inflow, a regional WWTP, sewer system served by a regional WWTP, or a political subdivision facility with a KISOP.
- (6) The study shall determine if the infiltration-inflow can be removed in a cost-effective manner by using a twenty (20) year present worth cost analysis and if it cannot be, shall identify the modifications to the sewer system, affected portion of the sewer system, or affected portion of the WWTP necessary to transport and treat the infiltration-inflow.
 - (a) A schedule for completion of the necessary modifications shall also be prepared.
 - (b)
 1. The study and schedule shall be submitted to the cabinet for review and approval.
 2. Approval shall be based on cost and length of time required to correct the infiltration-inflow.
- (7) For the infiltration-inflow study of the sewer system or the affected portion of the sewer system, the owner shall:
 - (a) Use a map of the sewer system or the affected portion of the sewer system to select manholes for the installation of flow monitoring equipment;
 - (b) Install equipment to monitor flow at the key manholes, groundwater levels, and rainfall volume and duration for a period of thirty (30) to ninety (90) days;
 - (c) Conduct physical surveys, smoke tests, and dye water studies of the affected portion of the sewer system;
 - (d) Evaluate the cost-effectiveness of transportation and treatment versus correction of the infiltration-inflow sources by using a twenty (20) year present worth cost analysis;
 - (e) Internally inspect the sewer lines in the affected portion of the sewer system to determine the rehabilitation locations and methods if the rehabilitation locations and methods cannot be established by other analysis;
 - (f) Develop plans for rehabilitation of the affected portion of the sewer system or modifications to the affected portion of the facility necessary to transport and treat all flows; and
 - (g) Develop a schedule for completion of the rehabilitation or modifications.
- (8)

- (a) The owner of the facility shall complete the necessary rehabilitation or modifications in accordance with the schedule to which the applicant and cabinet agree.
- (b) The cabinet may deny a further sewer line extension if the owner is not meeting the schedule or is not making progress that follows the schedule.

Section 10. Extended Aeration Package WWTP Requirements. This section shall apply to an extended aeration package WWTP intended to treat only domestic sewage but shall not apply to an extended aeration package WWTP that serves an individual residence.

- (1) A bar screen shall be provided for each plant, except those with trash traps pursuant to Section 14 of this administrative regulation.
- (2) The aeration chamber shall have a minimum detention time of twenty-four (24) hours based on the average design flow.
- (3) A minimum of 2,050 cubic feet of air shall be provided per pound of BOD.
- (4) The clarifier shall have:
 - (a) A minimum detention time of four (4) hours based on the average design flow;
 - (b) A surface overflow rate of less than 1,000 GPD/ft²; and
 - (c) A solids loading of less than thirty-five (35) lb/ft² based on the peak daily design flow rate.
- (5) A positive sludge return shall be provided.
- (6)
 - (a) A source of water shall be provided for cleanup.
 - (b) If a potable source is provided, backflow preventers shall be installed to protect the water supply.
- (7) Fencing with a lockable gate shall be installed around the plant site.
- (8) An all-weather access road to the plant shall be provided.
- (9) A sludge holding system shall be provided for each large WWTP. The sludge holding system shall:
 - (a) Provide two (2) cubic feet of volume per 100 gallons of WWTP design treatment capacity;
 - (b) Provide thirty (30) cubic feet per minute (cfm) of air per 1,000 cubic feet of tank volume;
 - (c) Be designed to prevent overflows; and
 - (d) Transport supernatant to the aeration chamber.
- (10) For a large WWTP, motors and blowers shall be installed sufficient to handle the load if the largest unit is taken out of service.
- (11) Post aeration, if required by effluent limits, shall be designed to raise the effluent dissolved oxygen from two (2) mg/l to the required effluent concentration.
 - (a) If a diffused air system is used, a minimum blower capacity of 0.154 cubic feet per minute (cfm) per 1,000 gallons of average daily design capacity shall be provided.
 - (b) If a step aeration ladder is used, a minimum drop of nineteen (19) feet shall be provided.
- (12) A WWTP with a monthly average permit limit for CBOD of twenty (20) mg/l or less shall provide additional treatment.
- (13) A WWTP that serves a restaurant or other similar establishment where food is prepared and served and a food grinder is used shall be designed to treat the additional BOD loading.
- (14) Effluent discharge piping for a new WWTP, except a regional facility, shall be designed to transport sewage to facilitate a future connection to a regional facility.
- (15) A used package extended aeration WWTP may be used if the manufacturer or a professional engineer certifies that the tank is structurally sound and all mechanical equipment has been reconditioned.

Section 11. Disinfection.

- (1) All WWTPs shall have a disinfection process that meets the following requirements:
 - (a) An ultraviolet disinfection system designed to treat the anticipated peak hourly flow with two (2) banks in series;
 - (b) A chlorination system with a flow or demand proportional feed system.
 1. The chlorine contact tank shall have a minimum detention time of thirty (30) minutes based on the average flow, or fifteen (15) minutes based on the peak hourly flow, whichever requires the larger tank size.
 2. A WWTP shall also have a dechlorination system with a flow or demand proportional feed system if necessary to meet the effluent limits;
 - (c) A chlorination system with a manually controlled feed system and a flow equalization basin designed to eliminate the diurnal flow variations.
 1. The flow equalization basin shall meet the requirements of Section 17 of this administrative regulation.
 2. The chlorine contact tank shall have a minimum detention time of thirty (30) minutes based on the average design flow or fifteen (15) minutes based on peak hourly flow.
 3. A WWTP shall also have a dechlorination system if necessary to meet the effluent limits;
 - (d) A peracetic acid system for a WWTP with a capacity that is greater than 10,000 gpd in flow.
 1. If a pilot test is to be conducted, the WWTP shall submit written notice of the intent to begin pilot testing.
 2. Pilot testing shall not exceed twelve (12) months.
 3. For final approval of a peracetic acid system, the WWTP shall submit:
 - a. A W-1 application;
 - b. A detailed plan showing:
 - (i) The treatment train that shall include peracetic acid;
 - (ii) The basin that will serve as a chamber for feeding peracetic acid; and
 - (iii) Secondary containment of peracetic acid storage;
 - c. The type of pump used to deliver peracetic acid;
 - d. The type of material used in the feed line; and
 - e. The contact time calculations.
 4. If basin construction is required, construction plans and specifications shall be signed, stamped, and dated by a Professional Engineer; or
 - (e) Another disinfection process approved based on a demonstration that the process provides equivalent treatment.
- (2) Tablet type chlorination equipment shall not be used in an intermediate or large WWTP.

Section 12. Requirements for Flow Measuring Devices. This section shall apply to a new large WWTP.

- (1)
 - (a) Each flow measuring device shall be capable of measuring the anticipated flow, including variations, with an accuracy of \pm ten (10) percent.
 - (b) The flow measuring device shall measure all flow received at the WWTP.
 - (c) An indicating, recording, and totalizing flow measuring device shall be installed at each large WWTP.
- (2)
 - (a) If the influent and effluent flow are expected to be significantly different, flow measuring devices shall be provided for both the influent and the effluent flow.
 - (b) Multiple flow measuring devices shall be provided for a WWTP:

1. That stores and hydrographically controls the release of effluent;
2. With flow equalization facilities that are designed to store more than the volume required to dampen the diurnal flow variations;
3. With a lagoon that has a detention time of greater than twenty-four (24) hours;
4. With the capability to bypass a treatment process; and
5. With more than one (1) discharge point.

(3) Sharp crested weirs shall be used for measuring effluent flow only and shall have the following characteristics:

- (a) The weir shall be installed perpendicular to the axis of flow, and there shall not be leakage at the weir edges or bottom;
- (b) The weir plate shall be level and adjustable;
- (c) The sides of a rectangular contracted weir shall be vertical;
- (d) The angles of a V-notch weir shall be cut precisely;
- (e) The thickness of the weir crest shall be less than one-tenth (0.1) of an inch;
- (f) The distance from the weir crest to the bottom of the approach channel shall be more than one (1) foot or two (2) times the maximum weir head, whichever is greater;
- (g) For a weir other than a suppressed, rectangular weir, the distance from the sides of the weir to the sides of the approach channel shall be more than one (1) foot or two (2) times the maximum weir head, whichever is greater;
- (h) Air shall circulate freely under, and on both sides of, the nappe;
- (i) The measurement of head on the weir shall be made at least four (4) times the maximum weir head upstream from the weir crest;
- (j)
 1. The cross-sectional area of the approach channel shall be at least eight (8) times the area of the nappe.
 2. The approach channel shall be straight and uniform upstream from the weir for a distance of fifteen (15) times the maximum weir head;
- (k) The minimum acceptable weir head shall be two-tenths (0.2) foot;
- (l) The maximum downstream pool level shall be at least two-tenths (0.2) foot below the crest elevation;
- (m) The weir length for a rectangular, suppressed, or cipolletti weir shall be at least three (3) times the maximum weir head; and
- (n) A reference staff gauge shall be provided.

(4) Parshall flumes may be used to measure influent or effluent flows and shall have the following characteristics:

- (a) The approach channel upstream of the flume shall be straight and have a width uniform for the length required by the following:
 1. If the flume throat width is less than one-half ($1/2$) the width of the approach channel, the straight upstream channel length shall be twenty (20) times the throat width;
 2. If the flume throat width is equal to or larger than one-half ($1/2$) the width of the approach channel, the straight upstream length shall be greater than ten (10) times the approach channel width; and
 3. If the cross-sectional area of the inlet to the approach channel is smaller than the cross-sectional area of the approach channel, additional straight upstream channel length may be required to dissipate the velocity if necessary to maintain laminar flow;
- (b) The throat section walls shall be vertical;
- (c) The head measuring point shall be at two-thirds ($2/3$) the length of the converging sidewall;
- (d) The flow shall be evenly distributed across the channel, shall be free of turbulence or waves, and shall not be located after transition sections;

- (e) The longitudinal and lateral axes of the converging crest floor shall be level;
 - (f) Free flow conditions shall be maintained; and
 - (g) A reference staff gauge shall be provided for H_a and H_b to determine if submergence occurs.
- (5) Other types of flow measuring devices shall be approved if the device reasonably and accurately measures the flow.

Section 13. Reliability Categories.

- (1) A WWTP design shall:
 - (a) Provide sufficient treatment units to allow for cleaning and repair without causing a violation of effluent limitations or a bypass from the sewer system or WWTP; and
 - (b) Provide storage or treatment capability sufficient to contain or treat the:
 - 1. Volume of the largest tank if that tank is out of service; and
 - 2. Flow received during the time needed to drain, complete cleaning, and accomplish an anticipated repair without causing a permit violation or bypass of a treatment process.
- (2) The cabinet shall determine the reliability grade of a WWTP based on the water quality use designation of the receiving stream, pursuant to 401 KAR 10:031.
 - (a) A Grade A WWTP shall have:
 - 1. Treatment units and alternate power sufficient for the continuous use of all treatment processes and disinfection, with the exception of alternate power for the aeration equipment used in an activated sludge process; and
 - 2. Full alternate power capacity for a discharge to a stream segment within five (5) miles of a public water supply intake.
 - (b) A Grade B WWTP shall have:
 - 1.
 - a. Treatment units sufficient for the continuous use of the preliminary, primary, and secondary treatment processes and disinfection; and
 - b. If an intermediate or large facility, alternate power sufficient for the continuous use of the preliminary, primary, secondary treatment, and disinfection processes, with the exception of alternate power for the aeration equipment used in an activated sludge process; or
 - 2. If a small facility, a design that enables the small facility to connect to an emergency generator.
 - (c) A Grade C WWTP shall have:
 - 1.
 - a. Treatment units sufficient for the continuous use of the preliminary treatment, primary treatment, and disinfection processes; and
 - b. If an intermediate or large facility, alternate power sufficient for the continuous use of the preliminary treatment, primary treatment, and disinfection processes; or
 - 2. If a small facility, a design that enables the small facility to connect to an emergency generator.
 - (d) If alternate power is required pursuant to this subsection:
 - 1. Alternative power shall be provided from the connection to at least two (2) independent power sources or an emergency generator; or
 - 2. The cabinet may approve alternative measures for an intermediate or small facility if:
 - a. The applicant can demonstrate that those measures provide protection comparable to alternative power; and
 - b. The receiving stream is not an OSRW, within five (5) miles of a public water supply intake, or within five (5) miles of a wellhead protection area.
- (3) Grade A WWTP requirements shall be met by a WWTP approved to discharge:

- (a) To a water body designated as an Outstanding State Resource Water pursuant to 401 KAR 10:031.
- (b) Into a sinkhole or disappearing stream; and
- (c) Within five (5) miles of a public water supply intake or discharge directly into a wellhead protection area.
- (4) A WWTP shall meet the requirements for a Grade B WWTP if it discharges within five (5) miles upstream of the head of an embayment if the lake is at normal elevation.
- (5) Except as provided in subsection (6) of this section, a WWTP shall, at minimum, meet the requirements for a Grade C WWTP.
- (6) The cabinet shall not assign a grade to a WWTP:
 - (a) Treating less than or equal to 1,000 gallons per day; or
 - (b) Serving an individual family residence.

Section 14. Requirements for Trash Traps. A trash trap shall not be used on a WWTP with a design capacity of larger than 100,000 gpd. A trash trap shall have an outlet baffle, be accessible to cleaning equipment, have air-tight access openings for cleaning, allow for cleaning in front of baffles, and have a volume required by this section.

- (1) For a small WWTP, the trash trap volume shall be fifteen (15) percent of the average daily design flow; and
- (2) For an intermediate or large WWTP with a design capacity of less than or equal to 100,000 gpd, the trash trap volume shall be as indicated in the table established in this subsection for the appropriate WWTP capacity. For capacities not included, the volume shall be interpolated.

WWTP Capacity (GPD)	Trash Trap Volume (Gallons)
10,000	1,500
20,000	2,400
30,000	2,900
40,000	3,200
50,000	3,430
60,000	3,600
70,000	3,740
80,000	3,840
90,000	3,920
100,000	4,000

Section 15. Requirements for Slow Sand Filters.

- (1) Wastewater loading shall not exceed five (5) GPD per square foot of filter surface area.
- (2) Filter areas larger than 900 square feet shall have multiple beds.
- (3) The discharge piping on the filter bed shall be located so that the maximum lateral travel over the sand is less than twenty (20) feet.
- (4) Each discharge point shall serve a maximum of 300 square feet of filter surface.
- (5) Each discharge point shall have a splash block with a minimum surface area of nine (9) square feet and a square or circular shape.
- (6) Distribution piping shall be designed to drain properly.
- (7) An underdrain shall be spaced on ten (10) foot centers or less.
- (8) Gravel shall be placed around the underdrain and to a depth of six (6) inches over the top of the underdrain.

- (9) The filter bed shall have at least thirty (30) inches of sand with an effective size between three-tenths (0.3) and five-tenths (0.5) millimeter.
- (10) The dosing chamber shall have a volume sufficient to provide a depth of two (2) inches over the entire filter bed.

Section 16. Requirements for Rapid Sand or Mixed Media Filters.

- (1) Rapid sand or mixed media filter loadings shall not exceed one (1) gallon per minute per square foot of filter surface area.
- (2) If flow equalization is provided, the allowable loading may be increased to two (2) gallons per minute per square foot.
- (3) A backwash system shall be provided.

Section 17. Requirements for Flow Equalization Basins.

- (1) A flow equalization basin shall have:
 - (a) A variable flow weir box set to deliver flow at a treatable rate;
 - (b) A minimum of 1.25 cfm of diffused air per 1,000 gallons of flow equalization volume;
 - (c) An emergency overflow to an appropriate point in the treatment scheme; and
 - (d) Sufficient volume to dampen the diurnal flow variations.
- (2) A flow equalization basin with earth embankments shall be constructed with a slope not steeper than 1:3 (one to three) unless a steeper slope is supported by geotechnical and slope stability studies.
- (3) For a flow equalization basin constructed in material other than earth, the applicant shall indicate how the basin will be properly sealed.
- (4) The flow equalization basin volume calculation and justification shall be provided to the cabinet.

Section 18. Requirements for Wastewater Treatment Lagoons.

- (1) BOD loading shall be less than:
 - (a) Thirty-five (35) pounds per day per acre of lagoon surface for a nonaerated primary lagoon system;
 - (b) Fifty (50) pounds per day per acre of lagoon surface for a nonaerated polishing lagoon; and
 - (c) 150 pounds per day per acre of lagoon surface for an aerated lagoon.
- (2)
 - (a) The lagoon design submittal shall provide details on the aeration system proposed including:
 1. The type, location, and capacity of the aeration units;
 2. The operating depth;
 3. The area of the lagoon at the operating depth;
 4. Permeability and thickness of the lagoon liner;
 5. Anticipated ultimate wastewater flow; and
 6. Influent wastewater characteristics.
 - (b) A new lagoon system shall be designed to treat a raw wastewater BOD of at least 240 mg/l.
 - (c) Except as established in subsection (5) of this section, the lagoon design shall be evaluated by the method established in Ten States' Standards and the predicted BOD remaining shall be less than the required effluent concentration.
- (3) A lagoon shall be at least 200 feet from any present residence or adjacent property line.
- (4) A nonaerated primary lagoon shall have a minimum detention time of ninety (90) days.

- (5) The Ten States' Standards requirement for vegetation to be established prior to filling the lagoon shall not apply.
- (6) An applicant proposing a lagoon with an embankment slope steeper than one to three (1:3) shall provide geotechnical and slope stability studies to support the design.
- (7) The applicant shall indicate how a basin constructed in material other than earth will be properly sealed.

Section 19. Additional Requirements for WWTPs That Serve Schools. In addition to the requirements of Sections 10 through 18 of this administrative regulation, the requirements established in this section shall apply to a WWTP that serves a school.

- (1) If a flow equalization basin is provided it shall meet the requirements of Section 17 of this administrative regulation.
- (2) The aeration tank shall have at least ten (10) gallons of capacity per day per student for elementary and middle schools, or at least twenty (20) gallons of capacity per day per student for an elementary or middle school, and a high school.
- (3) The secondary clarifier shall be sized to provide a maximum surface loading, at the average design flow, of 300 GPD per square foot of clarifier surface area. If a flow equalization basin is not provided, the secondary clarifier shall be sized to provide a maximum surface loading of 100 GPD per square foot at average daily design flow.

Section 20. Additional Requirements for WWTPs That Serve Multifamily Residential Developments. In addition to the requirements of Sections 10 through 18 of this administrative regulation, a WWTP that serves a multifamily residential development, including subdivisions, condominiums, apartments, and mobile home parks shall comply with at least one (1) of the requirements established in subsections

- (1) through (3) of this section. (1) Blowers and motors shall be installed sufficient to handle the organic load if the largest unit is not available for service.
- (2) An alternate source of power.
- (3) Additional treatment units or processes.

Section 21. Additional Requirements for WWTPs That Propose Effluent Disposal by Spray Irrigation. In addition to the requirements of Sections 10 through 18 of this administrative regulation, the requirements in this section shall apply to a WWTP that proposes effluent disposal by spray irrigation.

- (1) One (1) acre of spray field shall be provided for each 1,000 GPD of treated wastewater. An applicant proposing higher application rates shall provide detailed design based on site-specified information.
- (2) The following plans and specifications shall be signed, sealed, and dated by a professional engineer licensed in Kentucky:
 - (a) Plans for a WWTP with a design capacity of more than 1,000 gallons per day that propose an application rate greater than 1,000 gallons per acre per day; and
 - (b) Plans that propose a final slope equal to or greater than ten (10) percent.
- (3) A spray field that has a slope greater than twenty-five (25) percent on any portion of the spray field shall not be permitted.
- (4) The soil of a spray irrigation field shall have an average saturated hydraulic conductivity of not less than six-tenths (0.6) inch per hour, as established by:
 - (a) The saturated hydraulic conductivity value provided by an NRCS soil survey; or
 - (b) A saturated soil test of the spray field.
- (5) The spray field shall have less than a six (6) percent slope unless:
 - (a) The average saturated hydraulic conductivity for the spray field is more than six (6) inches per hour; and
 - (b) The average soil depth of the spray field is at least twenty-four (24) inches.

- (6) The spray irrigation field shall have sufficient vegetative growth to promote absorption, evaporation, and transpiration.
 - (a) Vegetative growth shall be perennial.
 - (b) Vegetative growth shall cover not less than ninety-five (95) percent of the spray field area.
- (7) A twenty (20) foot buffer zone shall be provided between the outer boundary of the spray field and the property boundary or the applicant shall provide screening to inhibit the transport of aerosols and windborne spray across property boundaries.
- (8) A spray irrigation field for an individual residence shall have a temporal or physical barrier that inhibits human contact with the airborne spray.
- (9) Effluent from the spray irrigation field shall be contained on the owner's property.
- (10) Setbacks.
 - (a) A construction permit shall not be issued if a portion of the spray field is closer than 200 feet from an existing dwelling.
 - (b) A portion of a spray field shall not be closer than the minimum setback requirements for a leach bed as established in 902 KAR 10:085, Section 8.
 - (c) If a setback provision of 902 KAR 10:085, Section 8, is less stringent than the setback requirements of this subsection, the more stringent setback shall apply.
- (11) Effluent derived from a wastewater that contained human waste shall not be applied to an area in active production of food for human consumption.
- (12) A spray irrigation field for an individual residence shall also have:
 - (a) At least three (3) sprinkler heads;
 - (b) A spray area larger than 0.19 acre; and
 - (c) A spray area larger than 0.38 acres if the slope is equal to or greater than six (6) percent.

Section 22. Requirements for WWTPs that Serve an Individual Residence.

- (1) A wastewater plant intended to serve an individual residence and eligible for a general KPDES permit pursuant to 401 KAR 5:055 shall have, at minimum, the following treatment processes:
 - (a) Extended aeration;
 - (b) Filtration; and
 - (c) Disinfection.
- (2) The WWTP shall be capable of meeting the final effluent limitations of the general permit.
- (3) The WWTP shall be capable of meeting secondary treatment requirements of 401 KAR 5:045 prior to filtration.
- (4) The cabinet may allow an alternative or additional treatment process to extended aeration if an alternative process is necessary to meet the requirements of a general permit issued pursuant to 401 KAR 5:055.
- (5) A minimum lot size of one (1) acre shall be provided for WWTPs. The cabinet may grant a variance to the one (1) acre limitation established in this subsection if the WWTP owner demonstrates that the WWTP shall not adversely affect water quality.
- (6) A WWTP serving an individual residence and proposing effluent disposal by spray irrigation shall also comply with Section 21 of this administrative regulation.
- (7) Setback restrictions for a treatment system serving an individual residence shall not be less than the setback restrictions established by 902 KAR 10:085, Section 8, Table 7.
- (8) An applicant may submit to the cabinet only one (1) of the two (2) copies of the plans and specifications required pursuant to Section 6 of this administrative regulation.

Section 23. Additional Requirements for extended aeration WWTPs that Serve Car Washes or Laundries. An extended aeration WWTP that serves a commercial or fleet car wash, commercial laundry, or laundry serving commercial or institutional establishment, shall

have an average daily flow from other biochemically degradable sources that is at least four (4) times greater than the anticipated flow of the car wash, commercial laundry, or laundry serving a commercial or institutional establishment.

Section 24. The Construction Permit.

- (1)
 - (a) A permit to construct a facility shall be effective upon issuance unless otherwise conditioned.
 - (b) If construction is not commenced within the twenty-four (24) months following a permit's issuance, a new permit shall be obtained before construction may begin.
- (2)
 - (a) The permittee shall submit the certification from an engineer that the facility was constructed in conformity with the plans and specifications approved by the cabinet in accordance with this administrative regulation within thirty (30) days from the completion of construction.
 - (b) The permittee shall certify the completion of construction for a project not designed by an engineer.
 - (c) If construction has not been completed within five (5) years of the permit issuance date, the permit shall expire and a new permit shall be required.
- (3) Permit conditions.
 - (a) Permits may contain special conditions that are necessary to comply with KRS Chapter 224 and 401 KAR Chapters 4 through 11. The conditions shall be in writing and treated as a part of the permit.
 - (b) The following conditions shall apply to all construction permits:
 1. There shall not be deviations from the plans and specifications submitted with the application or the conditions specified in this subsection, unless authorized in writing by the cabinet; and
 2. The permittee shall ensure that the effluent is of satisfactory quality to prevent violations of the standards in 401 KAR Chapter 5 and 401 KAR Chapter 10.
 - (c) The following conditions shall also apply to a construction permit issued to a WWTP that discharges to waters of the Commonwealth:
 1. If a sewer system served by a regional facility becomes available, the WWTP shall be abandoned and the influent flow shall be diverted to the regional facility; and
 2. Issuance of this permit shall not relieve the permittee from the responsibility of obtaining other permits or licenses required by this cabinet and other state, federal, or local agencies.
- (4) The construction permit for agricultural waste handling system may be used as an interim operational permit until the operational permit is issued or denied.
- (5) The issuance of a permit by the cabinet shall not convey any property rights of any kind or any exclusive privilege.

Section 25. Kentucky No Discharge Operational Permits (KNDOPs). A Kentucky No Discharge Operational Permit (KNDOP) shall only be issued to a facility that does not discharge and does not intend to discharge to waters of the Commonwealth, including agricultural waste handling systems and facilities that dispose of effluent by spray irrigation.

- (1) Nutrient Management Plans. An animal feeding operation shall have a nutrient management plan that:
 - (a) Contains the information required by subsection (2) of this section; and
 - (b) Is consistent with:
 1. The Agriculture Water Quality Act, KRS 224.71-100 through 224.71-145; or
 2. NRCS Conservation Practice Standard Nutrient Management Code 590 for Kentucky, NRCS, Kentucky (January 2013).

(2) The nutrient management plan shall:

- (a) Ensure adequate storage of manure, litter, and process wastewater, including procedures to ensure proper operation and maintenance of the storage facilities;
- (b) Ensure proper management of animal mortalities established in KRS 257.160 to ensure that they shall not be disposed of in liquid manure, stormwater, or process wastewater storage or treatment system;
- (c) Ensure that clean water shall be diverted from the production area;
- (d) Prevent direct contact of confined animals with waters of the Commonwealth;
- (e) Ensure that chemicals and other contaminants handled on-site shall not be disposed of in manure, litter, process wastewater, or stormwater storage or treatment system, unless specifically designed to treat chemicals and other contaminants;
- (f) Identify site-specific conservation practices to be implemented to control runoff of pollutants to waters of the Commonwealth;
- (g) Identify protocols for testing of manure, litter, process wastewater, and soil;
- (h) Establish protocols to land apply manure, litter, or process wastewater in accordance with site-specific nutrient management practices that ensure agricultural utilization of the nutrients in the manure, litter, or process wastewater; and
- (i) Large animal feeding operations shall identify records that shall be maintained to document the implementation and management of the minimum elements described in paragraphs (a) through (h) of this subsection.

(3) Additional Measures for Large Animal Feeding Operations.

- (a) Visual inspections. There shall be routine visual inspections of the production area. The following shall be visually inspected:

- 1. Weekly inspections of all stormwater diversion devices, runoff diversion structures, and devices channeling contaminated stormwater to the wastewater and manure storage and containment structure;
- 2. Daily inspections of drinking water or cooling water lines; and
- 3. Weekly inspections of the manure, litter, and process wastewater impoundments. The inspection shall note the level in liquid impoundments as indicated by the depth marker in paragraph (b) of this subsection.

- (b) Depth marker. An open surface liquid impoundment shall have a depth marker that clearly indicates the storage capacity.

- (c) Corrective actions. A deficiency found as a result of an inspection shall be corrected.

- (d) Mortality handling. A mortality shall not be disposed of in liquid manure or process wastewater system and shall be handled in a way that prevents the discharge of pollutants to surface water.

(4) Record Keeping Requirements for Large Animal Feeding Operation Production Areas. Each AFO shall maintain on-site, for a period of five (5) years from the date they are created, a complete copy of the information required by subsection (2)(i) of this section, and the records specified in paragraphs (a) through (f) of this subsection. The AFO shall make these records available to the cabinet for review upon request.

- (a) Records documenting the inspections required pursuant to subsection (3)(a) of this section;

- (b) Weekly records of the depth of the manure and process wastewater in the liquid impoundment as indicated by the depth marker pursuant to subsection (3)(b) of this section;

- (c) Records documenting an action taken to correct deficiencies required pursuant to subsection (3)(c) of this section. Deficiencies not corrected within thirty (30) days shall be accompanied by an explanation of the factors preventing immediate correction;

- (d) Records of mortalities management and practices used by the AFO to meet the requirements of subsection (3)(d) of this section;

- (e) 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; and
- (f) Records of the date, time, and estimated volume of any overflow.
- (5) Recordkeeping requirement for the land application areas.
 - (a) Each AFO shall maintain on-site a copy of its site-specific nutrient management plan.
 - (b) Each AFO shall maintain on-site for a period of five (5) years from the date it was created a complete copy of the information required by the permit application Short Form B, the information required by subsection (2)(i) of this section, and the records specified in paragraphs (a) through (j) of this subsection.
 - (c) The AFO shall make available to the cabinet for review upon request:
 - 1. Expected crop yields;
 - 2. The date manure, litter, or process waste water is applied to each field;
 - 3. Weather conditions at time of application and for twenty-four (24) hours prior to and following application;
 - 4. Test methods used to sample and analyze manure, litter, process waste water, and soil;
 - 5. Results from manure, litter, process waste water, and soil sampling;
 - 6. Explanation of the basis for determining manure application rates;
 - 7. Calculations showing the total nitrogen and phosphorus to be applied to each field, including sources other than manure, litter, or process wastewater;
 - 8. Total amount of nitrogen and phosphorus applied to each field, including documentation of calculations for the total amount applied;
 - 9. The method used to apply the manure, litter, or process wastewater; and
 - 10. Each date of manure application equipment inspection.
- (6) If an animal feeding operation does not discharge, does not intend to discharge, and obtains a Kentucky No-Discharge Operational Permit pursuant to this section, the cabinet shall not consider the animal feeding operation a CAFO.
- (7) KNDOP permit conditions.
 - (a) A permit may contain special conditions that are necessary to comply with KRS Chapter 224 and 401 KAR Chapters 4 through 11.
 - (b) The conditions shall be in writing and shall be treated as part of the permit.
 - (c) There shall not be a point source discharge of wastewater from the facility.
 - (d) The permit authorizes operation only of the WWTP described in the permit in the manner and under the conditions established in the permit application and supporting documents as approved by the cabinet in the permit.
 - (e) The permit shall not be construed as authorizing:
 - 1. An operation that is otherwise in contravention of a statute, administrative regulation, ordinance, or order of a governmental unit.
 - 2. The creation or maintenance of a nuisance.
 - (f) The permit shall be subject to revocation or modification by the cabinet as established in KRS 224.10-100.
 - (g) Commencement of a routine point source discharge shall result in a permit revocation.
 - (h) A permit shall be issued in accordance with the provisions of KRS Chapter 224 and 401 KAR Chapters 4 through 11. Issuance of the permit shall not relieve the permittee from the responsibility of obtaining any other permits or licenses required by the cabinet and other state, federal, and local agencies.
 - (i) If applicable, the waste materials removed from the settling basin shall be disposed of according to the requirements of the Division of Waste Management in 401 KAR Chapters 30 through 49.

(j) Land application that results in runoff to a stream shall be prohibited.

Section 26. Kentucky Intersystem Operational Permits (KISOPs). A KISOP shall be issued to publicly or privately owned sewer systems that discharge to a WWTP or a sewer system that is owned by another person.

(1) A KISOP shall not apply to sewer systems with less than 5,000 linear feet of sewer line.

(2) A KISOP shall not apply to a sewer system that discharges to a POTW if the system is subject to a local permit pursuant to the pretreatment program established in 401 KAR 5:055.

(3) A KISOP shall be issued to the applicant and the permittee shall remain the responsible party until a Transfer of Permit Request form is submitted and the transfer of the permit is acknowledged by the cabinet.

(4) Permits may contain special conditions that are necessary to comply with KRS Chapter 224 and 401 KAR Chapters 4 through 11. The conditions shall be in writing and shall be treated as a part of the permit.

Section 27. Operational Permits. An operational permit required in Sections 25 and 26 of this administrative regulation shall be valid for five (5) years from the date of issuance and shall be renewed to maintain continuous operation.

(1) The operational permit shall specify the type of monitoring or analysis required for a facility, and the frequency that the monitoring or analysis shall be performed and reported to the cabinet.

(2) The facility, including backup or auxiliary components, shall be operated and maintained to ensure compliance with permit requirements and this administrative regulation.

Section 28. Transfer of Operating Permits.

(1) An operating permit shall be issued to the applicant, and the permittee shall remain the responsible party for compliance with the permit until:

(a) A Transfer of Permit Request form is submitted by the new owner and the transfer of the permit is acknowledged by the cabinet; or

(b) The current permittee has submitted a Transfer of Permit Request form and the transfer of the permit has been acknowledged by the cabinet.

(2) A Transfer of Permit Request form submitted by the current permittee without the signature of the new permittee shall include a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them.

(3) A transfer of permit request shall serve as an application for a minor modification of the operating permit.

(4) Transfer of operating permits issued pursuant to Sections 25 and 26 of this administrative regulation shall be as established in C.F.R. 122.61.

Section 29. Alternative Requirements.

(1) The cabinet may approve alternative requirements to the provisions of Sections 7 to 23 of this administrative regulation if the cabinet determines that the alternative measure provides sufficient treatment, or transport.

(2) The applicant shall demonstrate that an alternative requested by the applicant provides sufficient treatment or transport.

Section 30. Material Incorporated by Reference.

(1) The following material is incorporated by reference:

(a) "Recommended Standards for Wastewater Facilities, 2014 Edition, A Report of the Wastewater Committee of the Great Lakes-Upper Mississippi River Board of State and

Provincial Public Health and Environmental Managers, 2014". This document is also known as the "Ten States' Standards";

(b) "Construction Permit Application for Wastewater Treatment Plant, DEP No. 7071-W1 (3/2018)";

(c) "Construction Permit Application for Clean Water Collection System, DEP No. 7071-S1 (3/2018)";

(d) ;

(e) "Transfer of Permit Request", DEP 7032-CO (3/2018)";

(f) "No Discharge Certification, DEP 7032-NDC (3/2018)";

(g) "Kentucky No Discharge Operational Permit for Closed Loop and Spray Irrigation Systems Application, DEP 7033-ND (3/2018)";

(h) "Kentucky No Discharge Operational Permit Application for Agricultural Wastes Handling Systems, Short Form B, DEP 7033-B-ND (3/2018)";

(i) "Kentucky Intersystem Operational Permit Application, DEP 7103 (3/2018)"; and

(j) "NRCS Conservation Practice Standard Nutrient Management Code 590 for Kentucky, NRCS, Kentucky, (January 2013)".

(k) "Combined Sewer Overflow (CSO) Control Policy", U.S. EPA, 59 Federal Register 18688, April 1994.

(2) This material may be inspected, copied, or obtained, subject to applicable copyright law, at the Division of Water, 300 Sower Boulevard, Frankfort, Kentucky 40601, Monday through Friday, 8 a.m. to 4:30 p.m. This material is also available on the division's Web site at <http://water.ky.gov>.

(3)

(a) "Recommended Standards for Wastewater Facilities, 2014 Edition, A Report of the Wastewater Committee of the Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, 2014" may also be obtained at <http://10statesstandards.com/wastewaterstandards.pdf>.

(b) "Combined Sewer Overflow (CSO) Control Policy, U.S. EPA, 59 Federal Register 18688, April 1994" may also be obtained at <https://www.epa.gov/sites/production/files/2015-10/documents/owm0111.pdf>.

(c) "NRCS Conservation Practice Standard Nutrient Management Code 590 for Kentucky, NRCS, Kentucky, (January 2013)" may also be obtained at [https://efotg.sc.egov.usda.gov/references/Delete/2013-11-9/Nutrient_Management_Std_\(590\).pdf](https://efotg.sc.egov.usda.gov/references/Delete/2013-11-9/Nutrient_Management_Std_(590).pdf).

(1 Ky.R. 760; 1381; eff. 7-2-1975; 12 Ky.R. 504; eff. 12-10-1985; 15 Ky.R. 282; 1005; 1257; eff. 10-26-1988; 16 Ky.R. 599; 1191; eff. 1-9-1990; 23 Ky.R. 1633; 2766; eff. 5-14-1997; 30 Ky.R. 1333; 1781; 2135; eff. 4-12-2004; TAm eff. 8-9-2007; 35 Ky.R. 2507; 36 Ky.R. 351; eff. 9-25-2009; TAm eff. 7-8-2016; 44 Ky.R. 2585; 45 Ky.R. 675, 689; eff. 11-1-2018.)