

ENERGY AND ENVIRONMENT CABINET
Department for Environmental Protection
Division of Waste Management
(Amendment)

401 KAR 46:101. Definitions for 401 KAR Chapter 46.

RELATES TO: KRS 224.1, 224.10, 224.50, 224.70, 224.99, 16 U.S.C. 1531, 33 U.S.C. 1251, 42 U.S.C. 82, 40 C.F.R. 257.53

STATUTORY AUTHORITY: KRS 224.10-100, 224.50-760

CERTIFICATION STATEMENT:

NECESSITY, FUNCTION, AND CONFORMITY: KRS 224.10-100(28) authorizes the cabinet to promulgate administrative regulations not inconsistent with the provisions of law administered by the cabinet. KRS 224.50-760(1)(d) authorizes the cabinet to promulgate administrative regulations for the management of special wastes. This administrative regulation defines terms used in 401 KAR Chapter 46. Some federal terms have been replaced with the definitions established in KRS Chapter 224. Definitions contained in KRS Chapter 224 have been referenced to the appropriate statutory citation. Some terms do not have a federal counterpart and have been added to clarify requirements and provisions of KRS Chapter 224 and 401 KAR Chapter 46.

Section 1. Definitions. Except as provided in this section, the definitions shall be as defined~~[established]~~ in 40 C.F.R. 257.53.

(1) "Alternative monitoring point" means any geologic feature natural to the Commonwealth of Kentucky including cave streams, springs, seeps, or other similar karst features or groundwater expressions formed by the intersection of a flowing body of groundwater at or below the local water table, below which the subsurface material is saturated with groundwater flow, and whose source groundwater is demonstrated to be hydraulically connected in part or whole to the potential contaminant source.

(2) "Ambient background" means the concentrations of naturally occurring substances and ubiquitous anthropogenic substances in the environment that are representative of the region surrounding the site not attributable to a release at another site and not attributable to an identifiable release at the site to which it applies. Ambient background samples may be impacted either by naturally occurring or ambient anthropogenic sources, but not by the source in question.

(3) "Cabinet" is defined by KRS 224.1-010(8)~~[224.1-010(9)]~~.

(4) "Capture zone concentration" means the numerical value derived by calculating the groundwater mass discharge rate at or near the groundwater plume's downgradient terminus in order to calculate and predict a worst-case scenario concentration for contaminants of concern at an extraction point, including a domestic use well, a municipal well or a well field, stream, spring, or river, by assuming full capture of the plume where:

(a) Capture zone concentration is measured in mass over volume (M/L^3), $C_{sw} = M_d \div Q_{sw}$;

(b) C_{sw} = contaminant concentration in water extracted from the extraction point in units of M/L^3 as mg/L;

(c) M_d = mass discharge of plume located at or near the groundwater plume terminus in units of M/t as g/d; and

(d) Q_{sw} = pumping or extraction rate of extraction point in units of L^3/t as L/d.

(5) "Certification by a PE" means "certification" as defined by KRS 322.010(16).

- (6) "CCR Corrective Action and Closure Permit" means a permit issued by the cabinet to a facility for corrective action or closure in accordance with the requirements of this Chapter.
- (7) "CCR Formal Permit" means a permit issued by the cabinet to a facility for construction or operation in accordance with the requirements of this Chapter.
- (8) "CCR Permit" means a:
- (a) CCR permit-by rule;
 - (b) CCR registered permit-by-rule";
 - (c) CCR formal permit; and
 - (d) CCR corrective action and closure permit.
- (9) "CCR Management" means the systematic administration of the activities which provide for the collection, source separation, storage, transportation, processing, treatment, or disposal of utility wastes including CCR.
- (10) "CCR Permit-by-rule" means a permit for beneficial use of CCR management practices established in 401 KAR 46:120, which shall be deemed to have a permit without the user having made application or registration with the cabinet.
- (11) "CCR Registered Permit-by-rule" means a permit for beneficial use of CCR management practices established in 401 KAR 46:120, which shall be deemed to have a permit without further action by the cabinet upon approval by the cabinet of a complete registration by the user.
- (12) "CCR unit" means any CCR landfill, CCR surface impoundment, or lateral expansion of a CCR landfill or CCR surface impoundment, or a combination of more than one of these units, based on the context of the paragraph in which it is used. This term includes both new and existing units, unless otherwise specified.
- (13) "Coal combustion residuals (CCR)":
- (a) Is defined by 40 C.F.R. 257.53;
 - (b) Means "utility wastes" included in KRS 224.50-760(1)(a);
 - (c) Means solid wastes as defined by 40 C.F.R. 261.4(b)(4)(ii); or
 - (d) Means industrial solid wastes generated at a facility and incidental to coal milling and the preparation process prior to combustion, including mill rejects and pyrites, that are non-hazardous.
- (14) "Commingled Facility" means a facility that contains a:
- (a) Special waste landfill or special waste surface impoundment that is:
 - 1. Subject to 401 KAR Chapter 45; and
 - 2. Not subject to 401 KAR Chapter 46; and
 - (b) A CCR unit subject to 401 KAR Chapter 46.
- (15) "Conceptual Site Model (CSM)" means a written and pictorial technical document that represents a site-specific environmental system and the biological, physical, and chemical processes that determine the transport of contaminants from sources through environmental media to environmental exposure and extraction points to receptors within the system. The CSM shall contain:
- (a) Site-specific conditions;
 - (b) Data and information, including impacted groundwater, release history, mass strength, and magnitude;
 - (c) Plume stability; and
 - (d) The fate and transport of contamination in relation to present and future exposure pathways, point of exposure, extraction point, and the groundwater plume terminus.
- (16) "Constituent" means an analyte listed in 40 C.F.R. 257, Appendix III or IV.
- (17) "Contaminant of Concern (COC)" means a constituent listed in 40 C.F.R. 257, Appendix III or IV that is sufficiently present in strength, mass, areal, vertical, or volumetric extent and concentration in the environment above risk screening levels, maximum contaminant levels, or ambient background, as appropriate, to require further

evaluation of human health effects and impact to an environmental resource and, as necessary, ecological health effects.

(18) "Darcy velocity" means the rate of flow of a water or liquid through a porous medium due to the difference in hydraulic head, as a sum of the pressure head and elevation head, proportional to the hydraulic gradient in the direction of flow over the distance. Darcy velocity is measured in units of length over time (L/T), $q_i = k * \delta h / \delta l$

where;

(a) q_i = groundwater Darcy flux;

(b) k = hydraulic conductivity (L/T);

(c) δh = the difference in hydraulic head between two (2) points in the direction of flow; and

(d) δl = the length between two (2) points in the direction of flow.

(19) "Deed notation" means "environmental covenant" as defined by KRS 224.80-100(5).

(20) ~~[(2)] ["Coal combustion residuals (CCR) permit-by-rule" or "CCR permit-by-rule" means the beneficial use of CCR, consistent with 401 KAR Chapter 46, without the submission of an application to the cabinet by a beneficial use of CCR user.]~~

~~[(3)] ["Coal combustion residuals registered permit-by-rule" or "CCR registered permit-by-rule" means authorization allowing the management, or disposal, upon notification as established in 401 KAR 46:120, Section 1(1)(e)1.]~~

~~[(4)] "Disposal" is defined by KRS 224.1-010(9)[224.1-010(10)].~~

(21) "Engineering control" means a design and build apparatus, method, or structure that is constructed in, into, or around a release to the environment necessary to control the risk associated with it, and implemented to help minimize the potential for human exposure to contamination and to protect the integrity of the remedy.

(22) "Exposure pathways" means the route a contaminant of concern takes from its source to its end point, and how a receptor can come into contact with the contaminant of concern.

(23) "Facility" means all contiguous land, and structures, appurtenances, and improvements on the land, where an electric utility or independent power producer subject to the requirements of this chapter, is located. A facility may contain multiple CCR units or CCR management units,

(24) "Field deviation" means an unforeseen and encountered condition for a specific construction event resulting in a change from the permitted design that does not meet the definition of an alternative performance standard.

(25) "Groundwater extraction point" means the current or future point of exposure where groundwater is:

(a) A groundwater resource that is or can be mechanically withdrawn for use as a domestic use well, municipal well, or wellfield; or

(b) Expressed as surface water flow from a natural feature, including cave streams, springs, seeps, or other similar karst features or groundwater expressions.

(26) "Groundwater plume terminus" means the plume end-point where a contaminant of concern concentration falls below a maximum contaminant level or ambient background level.

(27) "Institutional control" means "environmental covenant" as defined by KRS 224.80-100(5).

(28) "Karst feature" as defined by 401 KAR 45:105, Section 1(1).

(29) "Karst terrain" as defined by 401 KAR 47:005, Section 1(81).

(30) "Liquids" means "free liquids" as defined in 40 C.F.R. 257.53.

(31) "Mass discharge" means the total mass of contaminants of concern moving in the groundwater from a given source. Commonly referred to in scientific literature variously as contaminant mass discharge, total mass flux, and integrated mass flux. Mass discharge

is a quantification of the total contaminated groundwater's source or plume strength, as the total contaminant mass conveyed by a source or plume, at a given cross-sectional area location, and measured as a daily-loading rate in units of mass per time as grams per day.
 $M_d = \Sigma (C_n * A_n * q_i)$ where:

(a) M_d = Mass discharge;

(b) C_n = Concentration in a representative polygon n of the total cross-sectional area;

(c) A_n = Area of the segment polygon n; and

(d) q_i = Groundwater Darcy velocity.

(32) "Migration pathway" means the course a contaminant takes in the environment and moves away from the source to exposure point, extraction point, or receptor.

(33) ~~{(5)}~~ "Person" is defined by KRS 224.1-010(16)~~{224.1-010(17)}~~.

(34) "Plume major axis" means the long axis along the general length of a groundwater plume in the predominant downgradient flow direction.

(35) "Plume minor axis" means the short axis along the general width of a groundwater plume perpendicular to the predominant downgradient flow direction.

(36) "Point of exposure" means the point at which a receptor is likely to come in contact with a contaminant of concern.

(37) "Professional Engineer" or "PE" is defined by KRS 322.010(3).

(38) "Professional Geologist" or "PG" means "Registered geologist" as defined by KRS 322A.010(4).

(39) "Receptor" means a human or ecological entity potentially exposed to and adversely affected by contaminants of concern that are present at the point of exposure.

(40) "Regional Screening Level (RSL)" is defined by KRS 224.1-530(1).

(41) "Residential" means a type of property used:

(a) As a residence or dwelling, including a house, apartment, or condominium; or

(b) For other purposes with a similar potential for human exposure.

(42) ~~{(6)}~~ ["Secretary" is defined by KRS 224.1-010(24).]

~~{(7)}~~ "Solid waste" is defined by KRS 224.1-010(30)(a)~~{224.1-010(31)(a)}~~.

(43) ~~{(8)}~~ "Solid waste management" means for the purposes of 401 KAR Chapter 46, "CCR Management" ~~{is defined by KRS 224.1-010(39)}~~.

(44) "Source" means the origin of the release of a contaminant of concern into environmental media.

(45) ~~{(9)}~~ "Special waste" is established by KRS 224.50-760(1)(a).

(46) ~~{(10)}~~ "State" means the Commonwealth of Kentucky.

(47) ~~{(11)}~~ "State director" means the Director of the Division of Waste Management ~~{"secretary" as defined by KRS}~~~~{224.1-010(24)}~~.

(48) "Target risk" means an excess cancer risk of one (1) in one (1) million for carcinogenic endpoints and a hazard index of 1.0 for noncancerous endpoints in impacted environmental media.

(49) ~~{(12)}~~ "User" means the person beneficially using CCR in the Commonwealth of Kentucky.

COMPILER'S NOTE: 2025 RS HB 6, enacted by the General Assembly on March 27, 2025, altered the information to be provided at the time an administrative regulation is filed. Aside from formatting changes necessary to upload the regulation into the LRC's publication application, this regulation has been published as submitted by the agency.

401 KAR 46:101 Definitions for 401 KAR Chapter 46 is approved for filing.

TONY HATTON, Deputy Secretary, for

JOHN LYONS, Secretary

APPROVED BY AGENCY: October 14, 2026

FILED WITH LRC: October 14, 2026 at 2:30 p.m.

PUBLIC HEARING AND COMMENT PERIOD: A public hearing on this administrative regulation shall be held on December 22, 2026, at 10:00 a.m. EST (9:00 a.m. CST), at 300 Sower Blvd., 1st Floor, Training Room B. Individuals interested in being heard at this hearing shall notify this agency in writing by five workdays prior to the hearing, of their intent to attend. If no notification of intent to attend the hearing was received by that date, the hearing may be cancelled. A transcript of the public hearing will not be made unless a written request for a transcript is made. If you do not wish to be heard at the public hearing, you may submit written comments on the proposed administrative regulation. Written comments shall be accepted through December 31, 2026. Send written notification of intent to be heard at the public hearing or written comments on the proposed administrative regulation to the contact person. The hearing facility is accessible to persons with disabilities. Requests for reasonable accommodations, including auxiliary aids and services necessary to participate in the hearing, may be made to the contact person at least five (5) workdays prior to the hearing.

CONTACT PERSON: Louanna Aldridge, Assistant Director II, Division of Waste Management 300 Sower Blvd., 2nd Floor Telephone: (502) 782-0863
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REGULATORY IMPACT ANALYSIS AND TIERING STATEMENT

Contact Person: Louanna Aldridge **Telephone:** (502) 782-0863 **Email:** Louanna.Aldridge@ky.gov

(1) Provide a brief summary of:

(a) What this administrative regulation does:

This administrative regulation defines terms utilized in 401 KAR Chapter 46.

(b) The necessity of this administrative regulation:

This administrative regulation is necessary to define essential terms necessary to administer the coal combustion residuals (CCR) program.

(c) How this administrative regulation conforms to the content of the authorizing statutes:

This administrative regulation defines terms utilized in 401 KAR Chapter 46 for the CCR program, authorized under KRS 224.10-100 and KRS 224.50-760.

(d) How this administrative regulation currently assists or will assist in the effective administration of the statutes:

This administrative regulation defines terms utilized in 401 KAR Chapter 46 for the CCR program.

(2) If this is an amendment to an existing administrative regulation, provide a brief summary of:

(a) How the amendment will change this existing administrative regulation:

This amendment will add the definitions needed to effectively administer the CCR program. In addition, statutory citations are amended in order to reflect current statutory authorities.

(b) The necessity of the amendment to this administrative regulation:

The additional defined terms are necessary to effectively implement the CCR program. The amended statutory references are necessary to reflect current statutory authorities.

(c) How the amendment conforms to the content of the authorizing statutes:

The amendment will reflect the correct statutory citations. In addition, this amendment will conform to KRS 224.50-760 by defining additional terms necessary for 401 KAR Chapter 46 for the administration of the CCR program.

(d) How the amendment will assist in the effective administration of the statutes:

This amendment assists in the management of CCR as established by KRS 224.50-760 by defining the terms necessary to administer the CCR program.

(3) List the type and number of individuals, businesses, organizations, or state and local governments affected by this administrative regulation:

Six (6) utility companies and any new owner/operator of a CCR facility, Division of Waste Management, Division of Water, Division of Enforcement, Kentucky Transportation Cabinet, and potentially all Kentucky counties and ratepayers of the Commonwealth.

(4) Provide an analysis of how the entities identified in question (3) will be impacted by either the implementation of this administrative regulation, if new, or by the change, if it is an amendment, including:

(a) List the actions that each of the regulated entities identified in question (3) will have to take to comply with this administrative regulation or amendment:

This administrative regulation provides definitions of terms and will require no action on the part of regulated entities.

(b) In complying with this administrative regulation or amendment, how much will it cost each of the entities identified in question (3):

This administrative regulation will have no associated costs as it only provides definitions of terms for 401 KAR Chapter 46.

(c) As a result of compliance, what benefits will accrue to the entities identified in question (3):

This administrative regulation has no compliance benefits as it only provides definitions of terms.

(5) Provide an estimate of how much it will cost the administrative body to implement this administrative regulation:

(a) Initially:

This administrative regulation will not cost the administrative body funding to implement as it only provides definitions of terms.

(b) On a continuing basis:

This administrative regulation will not cause the administrative body to incur any continuing costs as it only provides definitions of terms.

(6) What is the source of the funding to be used for the implementation and enforcement of this administrative regulation:

This administrative regulation will not require a funding source as it only provides definitions of terms.

(7) Provide an assessment of whether an increase in fees or funding will be necessary to implement this administrative regulation, if new, or by the change if it is an amendment:

This administrative regulation will not require an increase in fees or funding to implement as it only provides definitions of terms.

(8) State whether or not this administrative regulation establishes any fees or directly or indirectly increases any fees:

This regulation does not establish any fees directly or indirectly.

(9) TIERING: Is tiering applied?

(Explain why or why not) Tiering is not applied in this administrative regulation as it only provides definitions of terms in 401 KAR Chapter 46.

FEDERAL MANDATE ANALYSIS COMPARISON

(1) Federal statute or regulation constituting the federal mandate.

40 C.F.R. 257.53

(2) State compliance standards.

KRS 224.10-100 and KRS 224.50-760

(3) Minimum or uniform standards contained in the federal mandate.

40 C.F.R. 257.53

(4) Will this administrative regulation impose stricter requirements, or additional or different responsibilities or requirements, than those required by the federal mandate?

This administrative regulation is more prescriptive to demonstrate compliance with federal standards. Federal terms that are defined in KRS Chapter 224 have been replaced in accordance with Kentucky law. Terms that do not have a federal counterpart and have been added to clarify requirements and provisions of KRS Chapter 224 and 401 KAR Chapter 46.

(5) Justification for the imposition of the stricter standard, or additional or different responsibilities or requirements.

, than those required by the federal mandate? Federal terms that are defined in KRS Chapter 224 have been replaced in accordance with Kentucky law. Terms that do not have a federal counterpart and have been added to clarify requirements and provisions of KRS Chapter 224 and 401 KAR Chapter 46 to demonstrate compliance with federal standards.

FISCAL IMPACT STATEMENT

(1) Identify each state statute, federal statute, or federal regulation that requires or authorizes the action taken by the administrative regulation.

: KRS 224.10-100, 224.50-760, and 40 C.F.R. 257.53

(2) Identify the promulgating agency and any other affected state units, parts, or divisions:

Energy and Environment Cabinet, Department of Environmental Protection, and Division of Waste Management

(a) Estimate the following for the first year:

Expenditures: There are no known expenditures for the promulgating agency in this administrative regulation.

Revenues: There are no known revenues for the promulgating agency in this administrative regulation.

Cost Savings: There are no known cost savings for the promulgating agency in this administrative regulation.

(b) How will expenditures, revenues, or cost savings differ in subsequent years?

There are no known expenditures, revenues, or cost savings for the promulgating agency in this administrative regulation.

(3) Identify affected local entities (for example: cities, counties, fire departments, school districts):

All Kentucky counties where CCR landfills or surface impoundments may be sited, or where beneficial reuse of CCR may be utilized.

(a) Estimate the following for the first year:

Expenditures: There are no known expenditures for local entities in this administrative regulation.

Revenues: There are no known revenues for local entities in this administrative regulation.

Cost Savings: There are no known cost savings for local entities in this administrative regulation.

(b) How will expenditures, revenues, or cost savings differ in subsequent years?

There are no known expenditures, revenues, or cost savings for local entities in this administrative regulation.

(4) Identify additional regulated entities not listed in questions (2) or (3):

Utility Companies: Six (6)

(a) Estimate the following for the first year:

Expenditures: There are no known expenditures for additional regulated entities in this administrative regulation.

Revenues: There are no known revenues for additional regulated entities in this administrative regulation.

Cost Savings: There are no known cost savings for additional regulated entities in this administrative regulation.

(b) How will expenditures, revenues, or cost savings differ in subsequent years?

There are no known expenditures, revenues, or cost savings for additional regulated entities in this administrative regulation.

(5) Provide a narrative to explain the:

(a) Fiscal impact of this administrative regulation:

There are no known fiscal impacts for this administrative regulation.

(b) Methodology and resources used to determine the fiscal impact:

There are no known fiscal impacts for this administrative regulation as this regulation only defines essential terms utilized in 401 KAR Chapter 46.

(6) Explain:

(a) Whether this administrative regulation will have an overall negative or adverse major economic impact to the entities identified in questions (2) - (4). (\$500,000 or more, in aggregate)

There is no major economic impact from this administrative regulation.

(b) The methodology and resources used to reach this conclusion:

There is no cost associated with this administrative regulation as the regulation only provides definitions for essential terms utilized in 401 KAR Chapter 46.