

#### **401 KAR 100:030. Remediation requirements.**

RELATES TO: KRS 224.01-400, 224.01-405, 224.01-450-224.01-465, 224.01-510-224.01-532, 224.40-100

STATUTORY AUTHORITY: KRS 224.10-100(30), 224.40-100, 224.01-400(2), 224.01-405(2), 224.01-530(2), 224.01-532

CERTIFICATION STATEMENT:

NECESSITY, FUNCTION, AND CONFORMITY: KRS 224.01-530(2) requires the cabinet to promulgate administrative regulations establishing standards under KRS 224.01-400 and 224.01-405 with respect to hazardous substances, pollutants, contaminants, petroleum, or petroleum products, that are protective of human health, safety, and the environment. KRS 224.01-532 authorizes the cabinet to promulgate administrative regulations to implement KRS 224.01-510 to 224.01-532. This administrative regulation governs remediation under KRS 224.01-400 and 224.01-405, 224.01-510 through 224.01-532, and 224.01-450 to 224.01-465.

##### **Section 1. Definitions.**

- (1) "Ambient background" means the concentrations of naturally-occurring inorganic substances and ubiquitous anthropogenic inorganic substances in the environment that are representative of the region surrounding the site and not attributable to an identifiable release.
- (2) "Applicant" means a person who has applied to participate in the Voluntary Environmental Remediation Program in accordance with KRS 224.01-514.
- (3) "Application" means Application to Enter the Voluntary Environmental Remediation Program, DEP Form 6059 (October 22, 2003), including any additions, revisions, or modifications and any narrative and drawings.
- (4) "Contaminant of concern" means a hazardous substance or petroleum that is sufficiently present in frequency and concentration in the environment to require further evaluation of human and ecological health effects.
- (5) "Industrial" means a type of property not used for residential purposes or for other purposes with a similar potential for human exposure.
- (6) "Notice of completion" means a letter from the cabinet to the person indicating that the person has satisfactorily completed the requirements of KRS 224.01-400(18) and 224.01-405(1) and Sections 6 through 9 of this administrative regulation.
- (7) "Party" means a person as defined in KRS 224.01-010(17) who is:
  - (a) Conducting remediation in accordance with KRS 224.01-400(18) or 224.01-405(1), who is seeking a notice of completion from the cabinet; or
  - (b) Conducting remediation in accordance with KRS 224.01-400(18) or 224.01-405(1), and seeking a no further remediation letter in accordance with KRS 224.01-450 to 224.01-465.
- (8) "Region 9 PRGs" means the U.S. EPA Region 9 Preliminary Remediation Goals, (October 1, 2002) used in accordance with the U.S. EPA Region 9 Preliminary Remediation Goals Table User's Guide/Technical Background Document (October 1, 2002).
- (9) "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.
- (10) "Target risk" means an excess cancer risk of one in one million for carcinogenic endpoints and a hazard index of 1.0 for noncancer endpoints.
- (11) "Voluntary Environmental Remediation Program" (VERP) means the process for site remediation established in this administrative regulation and KRS 224.01-510 to 224.01-532.

Section 2. Applicability. This administrative regulation shall govern remediation pursuant to KRS 224.01-400(18)-(21), 224.01-405(1), 224.01-450 to 224.01.465, and 224.01-510 to 224.01-532.

### Section 3. Eligibility

- (1) A notice of completion, a no further remediation letter, or a covenant not to sue shall be issued by the cabinet only for those sites at which remediation is conducted under cabinet oversight or is otherwise approved by the cabinet.
- (2) Upon approval of a remediation done in accordance with KRS 224.01-400 or 224.01-405 and Sections 6 through 9 of this administrative regulation, the cabinet shall issue a notice of completion to the person.
- (3) Upon approval of a remediation done in accordance with KRS 224.01-450 to 465 and Sections 6 through 9 of this administrative regulation, the cabinet shall issue a no further remediation letter to the eligible public entity.
- (4) Eligible participants seeking a covenant not to sue from the cabinet shall apply to enter the Voluntary Environmental Remediation Program. Upon approval of a remediation done in accordance with KRS 224.01-510 to 224.01-532 and Sections 5 through 9 of this administrative regulation, the cabinet shall issue a covenant not to sue to the applicant.
- (5) A person conducting characterization and remediation, with or without cabinet oversight as provided by KRS 224.01-400(19), shall have all the options of KRS 224.01-400 and of this administrative regulation.

### Section 4. Initial Property Screening.

- (1) KRS 224.01-530 establishes the Region 9 PRGs as screening values. Contamination on a property that does not exceed the residential value in the Region 9 PRGs and does not otherwise require action under KRS 224.01-400 or 224.01-405, shall not rise to a level of concern under KRS 224.01-530.
- (2) Contamination on a property which exceeds the residential value but does not exceed the industrial value in the Region 9 PRGs and does not otherwise require action under KRS 224.01-400 or 224.01-405, shall not rise to a level of concern under KRS 224.01-530 if the property is restricted in use to industrial use by a deed instrument in the property's chain of title that industrial exposures have been assumed at the site and is recorded with the county clerk for the county in which the property exists.
- (3) The cabinet shall not issue a covenant not to sue for sites described by subsections (1) and (2) of this section unless the owner of the property applies to the Voluntary Environmental Remediation Program and complies with Sections 5 through 9 of this administrative regulation.
- (4) The cabinet may require further characterization and remediation of any release pursuant to and in compliance with all applicable statutes and regulations regardless of the application of subsections (1) and (2) of this section.

### Section 5. Application. In order to enter into the Voluntary Environmental Remediation Program an applicant shall submit to the cabinet:

- (1) A completed "Application to Enter Voluntary Environmental Remediation Program," DEP Form 6059, October 22, 2003;
- (2) The tear sheet for the public notice required by KRS 224.01-514(3)(d);
- (3) A site characterization plan prepared in accordance with Section 6 of this administrative regulation; and
- (4) A nonrefundable application fee, if required by KRS 224.01-514(3).

### Section 6. Site Characterization Plan. The party or applicant shall submit to the cabinet a site characterization plan that complies with KRS 224.01-400(18) to (21) or 224.01-405(1) and Section 7(2) of this administrative regulation, and shall include:

- (1) To the extent known or reasonably obtained, the location and ownership of the property and site; the history of the use of the property and site, surrounding land use and ownership; information regarding the circumstances surrounding known or suspected releases at the property and site, including the types of hazardous substances or petroleum released, approximate volumes or amounts of releases, and actions taken in response to known or suspected releases to date;
- (2) The site conditions and physical setting including soils, groundwater, geology, and other pertinent features; a 7.5 minute USGS topographic quadrangle map or the appropriate part of this map indicating the location of the property, a 7.5 minute USGS geological quadrangle map or the appropriate part of such a map indicating the location of the property; and a base map, at an appropriate scale, accuracy, and detail depicting property lines, surrounding land ownership and uses, significant structures and infrastructure; and significant environmental or geological features;
- (3) A soil sampling plan to identify and characterize the horizontal and vertical extent of contamination and the variation in types and concentrations of hazardous substances and petroleum sufficient to support selection of remediation options for the site;
- (4) A plan to determine whether a groundwater assessment is necessary;
- (5) A plan to determine whether air quality, surface water and its associated sediments, or terrestrial or aquatic habitat have been affected by a release;
- (6) A plan to determine whether an ecological risk assessment is necessary;
- (7) A statement specifying that sample collection and analysis requirements, quality assurance, and quality control will be met in accordance with "Test Methods for Evaluating Solid Wastes: Physical Chemical Methods (EPA Publication No. SW-846) Third Edition"; and
- (8) A proposed schedule for implementation of the characterization plan and submittal of a site characterization report.

#### Section 7. Site Characterization and Site Characterization Report.

- (1) The party or applicant shall conduct a site characterization that complies with the site characterization plan, as required in Section 6 of this administrative regulation.
- (2) The party or applicant shall submit a site characterization report that includes:
  - (a) A list of the contaminants of concern at the site that complies with the following requirements:
    1. The party or applicant shall identify contaminants of concern at the site using the Region 9 PRGs;
    2. In identifying contaminants of concern the party or applicant shall consider the following:
      - a. The frequency of detection of the contaminants;
      - b. The effects on human health due to the interaction between contaminants, including additivity. Additivity of contaminants of concern shall be evaluated using the screening index described in the "U.S. EPA Region 9 Preliminary Remediation Goals Table User's Guide/Technical Background Document (October 1, 2002)";
      - c. Ambient background conditions, including ambient background based on generic statewide ambient background levels as presented in Table 2 of the Kentucky Guidance for Ambient Background Assessment, or site-specific ambient background conditions determined in accordance with the Kentucky Guidance for Ambient Background Assessment; and
      - d. Any other applicable requirements; and
    3. A person conducting characterization and screening with or without cabinet oversight as provided by KRS 224.01-400(19), may use Region 9 PRGs to screen sites and identify contaminants of concern, as described in KRS 224.01-530(1).

However, the cabinet shall not approve the adequacy of the Region 9 PRGs without review of site-specific conditions;

(b) A determination of the extent of the contamination in all media impacted by contaminants of concern including:

1. The horizontal and vertical extent of contamination in soils;
2. The results of the determination of whether a groundwater assessment is necessary, conducted in accordance with the "Kentucky Guidance for Groundwater Assessment Screening", or other method selected by the party or applicant and approved by the cabinet;
3. The results of the determination of whether air quality, surface water and its associated sediments, or terrestrial or aquatic habitat have been affected by a release, and the extent of the effect of the release on these media; and

(c) A determination by way of screening or risk assessment, as appropriate, of the human health and ecological risks posed by contamination at the site or resulting from the site:

1. Human health risk assessments shall comply with the "Risk Assessment Guidance for Superfund: Volume 1, Human Health Evaluation Manual, Part A, Part B, and Part C"; and
2. Ecological risk assessments shall be conducted in accordance with "Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments (1997)", and "Guidelines for Ecological Risk Assessment (1998)".

#### Section 8. Corrective Action Plan.

(1) The party or applicant shall submit a corrective action plan to the cabinet that addresses contaminants of concern in impacted media, and unacceptable ecological risks. The corrective action plan shall contain a proposed schedule for implementation of the corrective action.

(2) A person conducting corrective action pursuant to KRS 224.01-400(19) may use the Region 9 PRGs in order to identify final remediation goals. However, the cabinet shall not approve the adequacy of the Region 9 PRGs as final remediation goals without review of site-specific conditions.

(3) The corrective action plan shall employ one (1) of the following options:

(a) No action necessary.

1. No action is necessary in accordance with KRS 224.01-400(18)(a) if the party or applicant:

- a. Demonstrates to the cabinet that the risk posed by contaminants of concern does not exceed target risk levels for unrestricted land use and does not exceed ecological risk endpoints in accordance with "Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments (1997)" and "Guidelines for Ecological Risk Assessment (1998)"; or
- b. Demonstrates to the cabinet that organic contaminants of concern do not exceed target risk levels for unrestricted land use and inorganic contaminants of concern do not exceed ambient background levels for the respective media. Contaminants of concern shall not exceed ecological risk endpoints in accordance with "Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments (1997)" and "Guidelines for Ecological Risk Assessment (1998)".

2. The party's or applicant's attempt to demonstrate that no action is necessary to protect human health, safety and the environment may include demonstrations by the party or applicant that the remaining organic constituents in soil are naturally occurring or are not attributable to an identifiable release.

3. The party's or applicant shall consider any applicable requirements when demonstrating no action is necessary.

4. Region 9 PRGs may be used as the final remediation goals for human health at sites:

a. That do not have multiple contaminants of concern that result in an additive risk above the target risk level. Additivity of contaminants of concern shall be evaluated using the screening index described in the "U.S. EPA Region 9 Preliminary Remediation Goals Table User's Guide/Technical Background Document (October 1, 2002)"; and

b. For which the assumptions used in developing the Region 9 PRGs are applicable.

(b) Management in place. KRS 224.01-400(18)(b) shall apply to sites where the party or applicant will manage releases in place. The goal of management in place shall be to attain target risk levels at the point of exposure, and be protective of ecological health.

1. Management of the release shall include engineering and institutional controls amounting to containment of the release, and either elimination of exposure pathways, or reduction of exposure.

2. The party or applicant shall consider current and proposed land use in selecting the remedy. Proposed land use shall not be in conflict with local zoning codes and other applicable ordinances.

3. The party or applicant shall describe to the cabinet the method for maintenance of engineering and institutional controls, including:

a. Annual (or other approved frequency) inspections of the engineering and institutional controls, as approved by the cabinet in the corrective action plan;

b. Annual (or other approved frequency) certification to the cabinet that the engineering and institutional controls remain protective of human health, safety and the environment; and

c. A deed instrument containing an enforceable restrictive covenant which is transferable and is binding on current and subsequent property and recorded with the county clerk for the county in which the property exists. A copy of the restrictive covenant shall be filed with the cabinet.

4. If the target risk levels at the point of exposure will not be achieved by the proposed remedy, the party or applicant shall demonstrate to the cabinet the protectiveness of the remedy using the criteria listed in clauses a through h of this subparagraph. The cabinet shall place emphasis on criteria listed in clauses a through d of this subparagraph when evaluating the remedy selected.

a. The overall protection of human health and the environment;

b. The compliance with any other applicable requirements;

c. The long-term effectiveness and permanence of the remedial option;

d. The reduction of toxicity, mobility, or volume through the use of treatment;

e. The short-term effectiveness of the remedy;

f. The ability to implement the remedy;

g. The cost of the remedy; and

h. Community acceptance of the remedy.

5. If the proposed remedy will not achieve target risk levels at the point of exposure the party or applicant shall provide a public notice of the remedy, including a summary of the contamination at the site, the remedial actions taken, and the residual risks associated with the site. The cabinet shall receive public comments on the proposed remedy for at least thirty (30) days following publication of the notice. For VERP participants, the public notice and comment period required by KRS 224.01-524 shall serve as the required public notice.

(c) Restoration. KRS 224.01-400(18)(c) shall apply to sites where the party or applicant restores the environment through removal of the contaminants of concern to ambient background levels, target risk levels at the point of exposure, or levels derived from a site-specific risk assessment approved by the cabinet, that do not require engineering or institutional controls.

(d) Combination of options. The party or applicant shall have the option to employ a combination of the remedial options described in this section.

(4) The cabinet shall review and approve or disapprove the corrective action plan pursuant to KRS 224.01-522 or 224.01-400(22), as applicable.

#### Section 9. Corrective Action Completion Report.

(1) The party or applicant shall submit to the cabinet a corrective action completion report.

(2) The corrective action completion report shall include:

(a) Documentation that the corrective actions implemented comply with the corrective action plan approved by the cabinet;

(b) Documentation of the completion of all the activities specified in the corrective action plan required in Section 7 of this administrative regulation, including documentation of any modification from the approved corrective action plan, documentation of the weight, volume, and classification of any material removed as part of the corrective action, copies of signed manifests and any other pertinent waste disposal forms, sampling procedures used for waste profile determination and restoration conformation, results from any confirmatory sampling and copies of all laboratory analytical reports, and information regarding backfill material, where it was obtained, and any attendant analytical results;

(c) Documentation of all engineering and institutional controls implemented to contain the release, eliminate pathways of exposure, reduce exposure, or achieve a combination thereof; and

(d) A statement signed by the party or applicant certifying that the document and all attachments were prepared under the party or applicant's direction or supervision, and the information submitted is, to the best knowledge of the party or applicant, true, accurate, and complete.

(3) The cabinet shall review and approve or disapprove the corrective action completion report pursuant to KRS 224.01-522 or 224.01-400(22), as applicable.

#### Section 10. Incorporation by Reference.

(1) The following material is incorporated by reference:

(a) "Application to Enter Voluntary Environmental Remediation Program", DEP Form 6059, November 2016;

(b) "U.S. EPA Region 9 Preliminary Remediation Goals, and the Region 9 PRGs Table User's Guide/Technical Background Document", October 1, 2002;

(c) "Kentucky Guidance for Ambient Background Assessment", January 8, 2004;

(d) "Kentucky Guidance for Groundwater Assessment Screening", January 15, 2004;

(e) "Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments Interim Final", U.S. EPA Environmental Response Team, Edison, NJ, 1997;

(f) "Guidelines for Ecological Risk Assessment", U.S. EPA Risk Assessment Forum, Washington, DC. EPA/630/R-95/002F, 1998;

(g) "SW-846 Test Methods for the Evaluation of Solid Waste, Physical/Chemical: Methods, Third Edition, Integrated Version", June 1997;

(h) "Risk Assessment Guidance for Superfund: Volume 1, Human Health Evaluation Manual, Part A, Interim Final Version", December 1989;

(i) "Risk Assessment Guidance for Superfund: Volume 1, Human Health Evaluation Manual, Part B, Development of Risk-based Preliminary Remediation Goals, Interim Version", December 1991; and

(j) "Risk Assessment Guidance for Superfund: Volume 1, Human Health Evaluation Manual, Part C, Risk Evaluation of Remedial Alternatives, Interim Version", October 1991.

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(401 KAR 100:030. 30 Ky.R. 1707; 1961; 2021; eff. 3-18-2004; TAm eff. 7-8-2016; TAm eff. 12-21-2016; Crt eff. 8-13-2018; TAm eff. 5-7-2019; Cert to Am; filing deadline 2-6-2027.)