

401 KAR 48:090. Operating requirements for contained landfills.

RELATES TO: KRS 224.1, 224.10, 224.40, 224.43, 224.99, 40 C.F.R. Part 761

STATUTORY AUTHORITY: KRS 224.10-100, 224.40-305

CERTIFICATION STATEMENT:

NECESSITY, FUNCTION, AND CONFORMITY: KRS Chapter 224 requires the cabinet to promulgate administrative regulations for the management, processing, or disposal of solid wastes. KRS 224.40-305 requires that persons engaging in the management, processing, and disposal of solid waste obtain a permit. 401 KAR Chapter 48 establishes the minimum technical standards for solid waste sites or facilities. This administrative regulation establishes the requirements for contained landfills.

Section 1. General. The owner or operator of a contained landfill shall operate the facility in accordance with the requirements of KRS Chapter 224 and 401 KAR Chapters 30 through 49, the conditions of the solid waste permit issued by the cabinet, and the approved application filed with the cabinet.

Section 2. Procedures for Excluding the Receipt of Prohibited Waste.

(1) The owner or operator of a solid waste contained landfill shall implement a program at the facility for detecting and preventing the disposal of regulated hazardous wastes as established in 401 KAR Chapter 39, polychlorinated biphenyls (PCB) wastes as established in 40 C.F.R. Part 761, and TENORM waste generated from oil and gas development activities containing combined Radium 226 and Radium 228 at concentrations exceeding limits established by 902 KAR 100:180, Section 6(1), except as authorized by 902 KAR 100:180, Section 6(2). This program shall include, at a minimum:

- (a) Random inspections of incoming loads;
- (b) Inspection of suspicious loads;
- (c) Records of any inspections;
- (d) Training of facility personnel to recognize regulated hazardous waste; and
- (e) Procedures for notifying the proper authorities if a prohibited waste is disposed or discovered at the facility; and
- (f) Employee safety, health, training, and equipment to be used in inspection.

(2) The owner or operator shall implement additional inspection standards to meet the requirements of subsection (1) of this section.

(a) The owner or operator shall have a program, approved by the cabinet pursuant to KRS 224.10-100, to inspect all waste entering a contained landfill. The program to exclude hazardous wastes shall include:

1. Random inspections in time, but uniformly distributed to all waste sources based on volume; and
2. Identification data concerning the hauler on the operating inspection record including name of the driver, name of the hauler, address, source, volume, and waste characteristics. The owner or operator shall maintain a record of the inspections in accordance with the approved recordkeeping requirements.

(b) Upon discovery of hazardous waste, the owner or operator of a contained landfill shall isolate the load and notify the cabinet immediately.

Section 3. TENORM Waste Disposal from Oil and Gas Development and Production.

(1) TENORM that meets the criteria established in 902 KAR 100:180, Section 6(1) that is to be land disposed shall be disposed:

(a) In a contained landfill permitted in accordance with 401 KAR Chapters 47 and 48 and as authorized by 902 KAR 100:180, Section 6(1)(a); or

- (b) As established in subsection (2) of this section as authorized by 902 KAR 100:180, Section 6(1)(c).
- (2) TENORM that meets the criteria established in 902 KAR 100:180, Section 6(2) that is to be land disposed shall be disposed in a contained landfill permitted in accordance with 401 KAR Chapters 47 and 48 and as authorized by 902 KAR 100:180, Section 6(2)(a) that meets:
- (a) The operating requirements established in 902 KAR 100:180; and
 - (b) Final cap design requirements established in 401 KAR 48:080, Section 8, which shall include both a synthetic liner established in 401 KAR 48:080, Section 9(5) and a low permeability soil layer meeting the design standards in 401 KAR 48:080, Section 8(4) or Section 11.
- (3)
- (a) A contained landfill shall not accept TENORM waste established in 902 KAR 100:180, Sections 6(1) or 6(2) without having received approval from the cabinet except as established in subsection (b) of this section.
 - (b) An owner or operator of a contained landfill that possesses a solid waste permit and began accepting TENORM waste established in 902 KAR 100:180, Sections 6(1) or 6(2) before October 1, 2017 and will continue to accept the TENORM waste shall:
 - 1. Manage the TENORM waste in accordance with 902 KAR 100:180 and 401 KAR Chapters 47 and 48;
 - 2. Submit an application for a minor permit modification by July 1, 2018; and
 - 3. Not accept TENORM waste described in 902 KAR 100:180, Sections 6(1) or 6(2) after January 1, 2019 without having received approval from the cabinet of the permit modification required in subparagraph 2. of this paragraph and paragraphs (c) and (d) of this subsection.
 - (c) For TENORM waste that complies with the criteria established in 902 KAR 100:180, Section 6(2), the minor permit modification requirements established in 401 KAR 47:130 and paragraph (b)2 of this subsection shall also include:
 - 1. A public notice as established in 401 KAR 47:140, Section 7; and
 - 2. A public comment period of thirty (30) days from the date of public notice to submit written comments on the application.
 - (d) Upon receipt of an application, the cabinet shall notify the local county government in the county where the disposal of TENORM waste that complies with the criteria established in 902 KAR 100:180, Section 6(2) is proposed.

Section 4. Cover Material and Disease Vector Control Requirements.

- (1)
- (a)
 - 1. To control disease, fires, blowing litter, and disease vectors, the owner or operator shall place a minimum of six (6) inches of cover over all exposed solid waste at the end of each working day or, for continuously operating landfills, once every twenty-four (24) hours.
 - 2. The owner or operator shall only use soil or properly weathered or crushed shales, siltstones, or other materials as approved by the cabinet pursuant to KRS 224.10-100.
 - 3. Soils and other weathered, earthen material contaminated with petroleum may be used as daily cover if:
 - a. The maximum benzene concentration of the material is less than or equal to one and zero-tenths (1.0) ppm; and
 - b. The material is not placed as daily cover during a precipitation event.
 - (b) The daily cover for material subject to 902 KAR 100:180 shall be an additional six (6) inches of cover for a total minimum of twelve (12) inches of cover over all exposed

waste containing TENORM at the end of each working day or for continuously operating landfills, once every twenty-four (24) hours.

(c) The daily cover shall not have any protruding waste, except for the occasional litter embedded into the surface, which shall not exceed ten (10) percent of the cover area.

(d) Daily cover shall be compacted upon application and provide positive drainage. The owner or operator shall place daily cover to allow for proper drainage and shall immediately compact and grade the soil.

(e) The owner or operator may remove daily cover to facilitate the vertical passage of methane gas and leachate and shall recover the exposed areas within eight (8) hours of exposure. Daily cover required by subsection (b) of this section shall not be removed.

(f) The owner or operator shall dispose of any daily cover removed as established in paragraph (d) of this subsection as solid waste.

(2) Interim cover period. The owner or operator:

(a)

1. Shall place an additional six (6) inches of interim cover over any area that will not receive additional solid waste within thirty (30) calendar days of the last waste placement.

2. With the daily cover applied in accordance with subsection (1) of this section, the additional interim cover shall increase the total cover depth to twelve (12) inches;

(b) May, on the day waste is to be placed over an area that is covered with daily and interim cover, remove a maximum depth of six (6) inches of interim cover over the area of the cell for that day's operation;

(c) Shall place, compact, and grade the interim cover to effect proper drainage; and

(d) Shall apply temporary erosion controls at the time of placing interim cover.

(3) Long term cover. The owner or operator:

(a) Shall apply an additional eighteen (18) inches of long-term cover over all areas that shall not receive additional waste within four (4) months by September 15 of each year. With the daily and interim cover, the total thickness of the cover in these areas shall be thirty (30) inches;

(b) May remove a maximum of eighteen (18) inches of the thirty (30) inches of cover in this subsection within the seven (7) calendar days prior to additional waste placement. The owner or operator may remove remaining soil leaving no less than six (6) inches of daily cover from the daily cell area on the day additional waste is to be placed;

(c) Shall place, compact, and grade the long term cover to effect proper drainage; and

(d) Shall complete erosion controls and seeding of interim and long-term cover during the fall seeding season.

(4) Final cover.

(a) The owner shall initiate the application of final cover:

1. Within thirty (30) days of filling a completed phase of the landfill to final design grade; and

2. Annually so that the final cap is in place by September 15 in all areas of the landfill that have reached final grade by August 15 of each year.

(b) An alternate schedule may be approved by the cabinet if construction techniques shall preclude construction by the dates established in paragraph (a) of this subsection.

(5) Cover report. The owner or operator shall record, on a form approved by the cabinet pursuant to KRS 224.10-100, the daily cell locations, specific location of TENORM waste placement within the cell, and dates of cover applications at the landfill including:

(a) Daily usage area;

(b) Daily, interim, long term, and final cap installation dates; and

(c) Certification reports.

Section 5. Explosive Gases Control.

- (1) The owner or operator of a contained solid waste landfill shall ensure that the concentration of methane gas:
 - (a) Generated by the facility does not exceed twenty-five (25) percent of the lower explosive limits (LEL) for methane in facility structures (excluding gas control or recovery system components); and
 - (b) Does not exceed the lower explosive limit for methane at the facility property boundary.
- (2) The owner or operator of a contained landfill shall quarterly monitor for explosive gas:
 - (a) Underneath or in the low area of each on-site building;
 - (b) At locations along the boundary as shown in the permit;
 - (c) At each gas passive vent installed under the final closure cap;
 - (d) At any potential gas problem areas, as revealed by dead vegetation or other indicators; and
 - (e) At any other points required by the permit.
- (3) The owner or operator shall record the date, time, location, percent lower explosive limit, and other pertinent information on the recordkeeping form approved by the cabinet pursuant to KRS 224.10-100.
- (4) The owner or operator shall install, operate, and maintain a gas detector with an alarm set at twenty-five (25) percent of the lower explosive limit in each on-site building.
- (5) If methane gas levels exceeding the limits in subsection (1) of this section are detected, the owner or operator shall:
 - (a) Take all necessary steps to ensure immediate protection of human health;
 - (b) Immediately notify the cabinet of the methane gas levels detected and the immediate steps taken to protect human health; and
 - (c) Within fourteen (14) days, submit to the cabinet for approval a remediation plan for the methane gas releases. The plan shall describe the nature and extent of the problem and the proposed remedy. The plan shall be implemented upon approval by the cabinet pursuant to KRS 224.10-100.

Section 6. Air Criteria.

- (1) Except as established in paragraph (b) of this subsection, the owner or operators of contained landfills shall not allow or engage in open burning of waste. Any open burning shall be immediately extinguished.
 - (a) Wastes that are burning or smoldering shall not be deposited in the fill. The materials shall be deposited in a hot load area designated in the permit.
 - (b) The cabinet may grant emergency permission to burn in accordance with 401 KAR 47:150. The owner or operator shall follow the plan approved for these purposes.
- (2) The owner or operator shall control dust on haul roads and other areas to prevent a nuisance to surrounding areas.

Section 7. Access Requirements.

- (1) The owner or operator of a contained solid waste landfill shall control public access and prevent unauthorized vehicular traffic and illegal dumping of wastes to protect human health and the environment.
 - (a) The owner or operator shall use artificial barriers, natural barriers, or both, as appropriate.
 - (b) Each access point shall be controlled by lockable entrance ways.
- (2) The owner or operator shall construct and maintain:
 - (a) The major access road from a publicly maintained highway to the landfill;
 - (b) The perimeter road; and
 - (c) An all-weather road to within 200 feet of the working face.

(3)

- (a) The owner or operator of a contained landfill shall remove debris, mud, and waste from vehicles before leaving the site.
- (b) The owner or operator shall be responsible for removing landfill debris, mud, and waste from off-site roadways.

Section 8. Water Controls. The owner or operator of a contained solid waste landfill shall:

- (1) Maintain the site as necessary to prevent erosion or washing of the fill, and grade as necessary to drain rainwater from the fill area and to prevent standing water;
- (2) Maintain all run-on and run-off control systems as necessary to maintain original design capacity as required by 401 KAR 48:070, Section 2. This can include:
 - (a) Removal of sediment from run-off control structures. The site design shall specify the method to be used to determine the removal in the event that clean-out shall occur;
 - (b) Removal of debris, wastes, and soil from diversion and run-off ditches to maintain the design capacity; and
 - (c) Construction and maintenance of temporary diversion ditches around the current working face.
 - 1. The owner or operator shall specify the location of the temporary ditches in the operational plan required by 401 KAR 47:190.
 - 2. The ditches shall be approved by a professional engineer registered in the Commonwealth of Kentucky.

Section 9. Waste Restrictions.

- (1) The owner or operator of a contained landfill shall only dispose of wastes that:
 - (a) Are not hazardous wastes regulated pursuant to 401 KAR Chapters 30 and 39, except for limited quantity hazardous wastes and exempt spill residues;
 - (b) Do not contain free liquids as determined by the cabinet pursuant to KRS 224.10-100; and
 - (c) Are specified in the approved permit application.
- (2) The owner or operator shall comply with the recordkeeping and reporting requirements of Section 12 of this administrative regulation pertaining to the location of disposed limited quantity hazardous waste and exempt spill residues.

Section 10. Working Face Requirements.

- (1) Within two (2) hours of receipt, the owner or operator shall spread wastes in loose layers not exceeding twenty-four (24) inches in depth and compact it to the maximum practicable density.
 - (a) The owner or operator shall use the equipment specified in the permit for compaction.
 - (b) The operator shall pass the equipment over 100 percent of the waste surface at least four (4) times.
 - (c) Each loose layer shall be fully compacted before any additional waste is placed.
- (2) The owner or operator shall not exceed the lift height specified in the permit.
- (3) The owner or operator shall not place an initial lift containing any object that may damage the bottom liner. The owner or operator shall protect the liner system with a layer of dirt, waste, or similar blanket placed between operating equipment and the liner.
- (4) The daily working face shall be restricted to the smallest area practical for working face operation.
- (5) The completed cell shall consist of the solid waste compacted during one (1) working day.
- (6)
 - (a) The owner or operator shall prohibit scavenging within 100 feet of the working face.

- (b) All salvage and recycling shall occur at areas so designated in the permit.
- (7) The owner or operator shall only allow access to the landfill if operating personnel are on the site.
- (8) The owner or operator shall not accept solid waste at a rate that exceeds the rated capability of the operational compaction and cover equipment available on site.
- (9) The owner or operator shall not accept solid waste without landfill personnel present to supervise the unloading.
- (10) The grounds in and about a landfill shall not be allowed to become a nuisance.
 - (a) If necessary, interior fences may be required to prevent litter from blowing from the landfill.
 - (b) The permitted area shall be policed on a routine basis to collect all scattered material.
- (11) All litter attributable to the site's operation shall be picked up within forty-eight (48) hours.
- (12) Unless excluded from the site, large bulky items and other nonresidential wastes shall be deposited in a manner approved by the cabinet pursuant to KRS 224.10-100.
- (13) The owner or operator shall conform to the posted operating hours for receiving waste and shall notify the cabinet of the operating hours before changing them. The entrance sign shall meet the requirements of Section 15(2) of this administrative regulation.

Section 11. Employee Facilities.

- (1) The owner or operator of a contained landfill shall provide buildings meeting 401 KAR 48:070, Section 9 requirements for site personnel.
- (2) The buildings shall be maintained in a safe and sanitary manner.
- (3) At least one (1) building shall have a safe drinking water supply, pursuant to 401 KAR Chapter 8.

Section 12. Reports and Recordkeeping. Records and reports shall be maintained and submitted in accordance with 401 KAR 47:190, Section 8.

Section 13. Groundwater Monitoring. The owner or operator of a contained solid waste landfill shall implement the groundwater monitoring program in the approved application.

Section 14. Closure and Closure Care Requirements.

- (1) The owner or operator shall comply with the closure requirements established in paragraphs (a) and (b) of this subsection.
 - (a) The owner or operator of a contained landfill shall prepare a written closure plan that describes the closure activities for each unit including:
 - 1.
 - a. The methods to be employed to maintain the integrity and effectiveness of any final cap, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events, and preventing run-on and run-off from eroding or otherwise damaging the final cap; and
 - b. The layer established in 401 KAR 48:080, Section 8(4) shall have a maximum permeability less than or equal to the permeability of any bottom liner system or natural subsoils present;
 - 2. Maintenance and operation of the leachate collection system in accordance with the requirements, if applicable, until leachate no longer is generated;
 - 3. Groundwater monitoring in accordance with the requirements of 401 KAR 48:300 and maintaining the groundwater monitoring system; and
 - 4. Maintenance and operation of the explosive gas monitoring system in accordance with the requirements of Section 5 of this administrative regulation.

- (b) The closure period shall be at least two (2) years following the cabinet's acceptance of the owner's certification of closure.
- (2) The owner or operator of a contained landfill shall prepare and implement a written closure care plan that describes monitoring and routine maintenance activities that shall be carried out during the closure care period of at least thirty (30) years. The closure care plan shall include, at a minimum:
- (a) A description of the monitoring and maintenance activities for each unit and the frequency at which these activities shall be performed;
 - (b) The name, address, and telephone number of the person or office to contact about the facility during the closure care period; and
 - (c) A description of the planned uses of the property during the closure care period.
 - 1. Closure care use of the property shall not disturb the integrity of the final cap, liner or liners, or any other components of the containment system, or the function of the monitoring systems, unless upon demonstration by the owner or operator, the cabinet determines that the activities shall not increase the potential threat to human health or the environment or the disturbance is necessary to reduce a threat to human health or the environment.
 - 2. The owner or operator shall obtain approval from the cabinet in order to remove any wastes or waste residues, the liner, or contaminated soils from the land.
- (3) The closure care plan shall be submitted with the permit application and shall be approved by the cabinet pursuant to KRS 224.10-100.
- (a) Any subsequent modification to the closure care plan also shall be approved by the cabinet pursuant to 401 KAR 47:130.
 - (b) A copy of the most recently approved closure care plan shall be kept at the facility at least until completion of the closure care period has been certified in accordance with subsection (5) of this section.
- (4)
- (a) The owner or operator shall record a notice in the deed that shall in perpetuity notify any potential purchaser of the property of the location and time of operation of the facility, the nature of the waste placed in the site, and a caution against future disturbance of the area.
 - (b) The notice shall be recorded in accordance with KRS Chapter 382, and proof of recording shall be submitted to the cabinet prior to the cabinet's acceptance of certification of closure.
- (5) Following completion of all closure and closure care periods for each unit, the owner or operator of a contained landfill shall submit to the cabinet certification by a professional engineer, verifying that all phases of closure and closure care have been completed in accordance with the approved plans and the requirements of KRS Chapter 224.

Section 15. Signs.

- (1) Warning signs shall be visible at all landfill access points.
- (a) The warning signs shall be legible at a distance of 100 feet.
 - (b) The signs shall give warnings of all site hazards that might include: explosive gases, heavy equipment movement, and heavy truck movements.
- (2) Entrance signs shall be visible and located at the public entrances and all entrances used by waste hauling vehicles.
- (a) The signs shall be legible from 100 feet.
 - (b) The signs shall indicate landfill name, name of the owner, name of the operator, the hours of receiving wastes, the permit number, and an emergency telephone number.

Section 16. Alternative Specifications. Alternative specifications may be used only after approval by the cabinet upon a demonstration by a qualified registered professional

engineer that the alternatives shall result in performance, with regard to safety, stability, and environmental protection, equal to or better than that resulting from designs complying with the requirements of this administrative regulation.

(401 KAR 048:090. 16 Ky.R. 1782; 2216; 2378; eff. 5-8-1990; 21 Ky.R. 503; 1102; eff. 11-7-1994; 44 Ky.R. 327, 977, 1265; eff. 12-7-2017; Crt eff. 8-13-2018; TAm eff. 10-15-2018; Crt eff. 7-22-2025.)