



Guidelines for Evaluating the Post-Closure Care Period for Hazardous Waste Disposal Facilities under Subtitle C of RCRA

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Overview

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 - General Outline
 - Criteria for Extending or Shortening the PCC Period
 - Additional Recommendations



Webinar's Objective

- To explain the scope and approach of the post-closure care (PCC) guidance, as well as some of the factors that were considered in developing it.
- To elaborate on the recommendations and considerations included in the guidance.





GUIDANCE BACKGROUND



Background

- The RCRA Subtitle C hazardous waste management regulations establish a PCC period for certain hazardous waste treatment, storage and disposal facilities (TSDFs), and specify PCC activities (40 CFR parts 264 and 265 subpart G).
- What is the PCC period?
 - The period of time after closure during which owners and operators conduct monitoring and maintenance activities to preserve the integrity of the disposal system and continue to prevent or control releases of contaminants from the disposal units.



Background (cont.)

PCC requirements may apply to facilities in a variety of conditions, for example:

- Land disposal units closed with waste in place
- Units required to be closed as landfills (e.g., tanks from which waste was released that could not be “clean closed”);
- Land treatment areas, surface impoundments, or waste piles





Background (cont.)

- The RCRA regulations provide for a case-by-case review of the PCC period and establish arrangements for it to be extended or shortened.
- These decisions must be made on the basis of protection of human health and the environment.



Background (cont.)

- The regulations provide that the decision to alter the length of the post-closure care period can be made:
 - at any time preceding *partial closure* of a hazardous waste management unit subject to post-closure care;
 - at any time preceding *final closure* of a facility;
 - or at any time during the post-closure care period for a particular unit.



OBJECTIVE, SCOPE, AND APPROACH OF THE PCC GUIDANCE



Objective of the Guidance

- To assist regulators in evaluating conditions at hazardous waste disposal facilities subject to Subtitle C of RCRA that are approaching the end of the original 30-year PCC period, and in determining whether the PCC period should be adjusted or allowed to end.
- To provide information to assist facility owners and operators in preparing documentation to inform the regulators' evaluations.
- To provide greater transparency and lend consistency to the decision-making process.
- To help waste generators and handlers better understand the factors that can affect the length of the PCC period, and ultimately the full, long-term obligations and costs associated with landfill practices so they can better evaluate long-term waste management strategies, including waste minimization.



Scope of the Guidance

- Focuses on facilities that manage hazardous waste under Subtitle C of RCRA.
- Provides criteria for regulators to consider when adjusting the post-closure care period.
- Sets forth a recommended process for preparing to evaluate the post-closure care period in a timely fashion.
- Discusses additional considerations.
- Summarizes relevant federal regulatory requirements.
- Does not replace existing guidance.
- Does not provide guidance on financial assurance requirements associated with post-closure.



Approach

- The regulator should examine PCC plans and other relevant information well in advance of the end of the 30-year period to determine whether extending PCC is appropriate.
- Relevant information may include:
 - monitoring results,
 - results from testing and inspection of cover systems,
 - information concerning land use and institutional controls, etc.





Approach (cont.)

- According to the regulations, the Regional Administrator or State Director has the responsibility for deciding whether to extend or shorten the PCC period.
- The facility owner or operator, through the terms of their permit, the regulations for interim status facilities, or by EPA order or inspection, is responsible for providing the information necessary to support this decision making.
- The guidance indicates that a lack of relevant information may justify a conclusion by the regulatory authority that the PCC period should be extended to assure protection of human health and the environment, until such information becomes available.



Approach (cont.)

- An overarching consideration in determining whether to extend or shortened the post-closure care period is the inherent uncertainty associated with the long-term presence of hazardous waste in the unit.
- Continued monitoring and maintenance activities may be appropriate unless or until it can be demonstrated that site-specific conditions adequately minimize the risk that contaminants will migrate from the unit (*e.g.*, site geology/hydrogeology) or that, in the event the engineering controls fail, a release would not pose an unacceptable risk to human health and the environment.



GUIDANCE OVERVIEW



General Outline

- Introduction and Need for Guidance
- Regulatory Overview of the PCC Period
- Criteria to Consider for Adjusting the PCC Period
- Recommended Approach for Reviewing Hazardous Waste Management Units Approaching the End of the PCC Period
- Additional Considerations
- Appendices: Overview of Federal Regulatory Provisions, Resources concerning Institutional Controls



Criteria to Consider for Extending or Shortening the Post-Closure Care Period

- Waste Treatment
- Nature of Hazardous Waste
- Unit Type/Design
- Leachate
- Groundwater
- Siting and Geology/Hydrogeology
- Facility History
- Gas Collection System Integrity
- Integrity of Cover System
- Long-Term Care



Criteria for Adjusting the PCC Period

Waste Treatment

- Hazardous waste treatment that destroys harmful contaminants or reduces toxicity of the waste before placement in a land disposal unit provides a more lasting form of groundwater protection than waste containment alone.

Nature of Hazardous Waste

- The properties of the hazardous waste provide an important indication of the waste's ability to migrate or be dispersed in the environment.





Criteria for Adjusting the PCC Period

Unit Type/Design

- An assessment of the type of unit and its characteristics (e.g., overall design and construction) provides a general indication of the expected ability of the unit to contain wastes over the long term.

Leachate

- Monitoring for leachate generation and releases serves as the most effective means of checking the integrity of the cover/containment system.





Criteria for Adjusting the PCC Period

Groundwater

- Groundwater monitoring is the primary means of detecting leachate releases and ensuring compliance with groundwater quality standards.



Siting and Site Geology/Hydrogeology

- Many siting, geologic, and hydrologic conditions affect the performance of the cover/containment system. Also, location in potentially vulnerable areas increases the likelihood and potential severity of releases.



Criteria for Adjusting the PCC Period

Facility History

- A well-managed facility is more likely to maintain its structural integrity.



Gas Collection System

- For units that have a landfill gas collection system, it is important to analyze the extent to which it is capable of being modified or shut down at the end of the PCC period without exceeding emission levels that are consistent with applicable regulatory standards and with public safety at the facility.



Criteria for Adjusting the PCC Period

Integrity of cover System

- A viable cover is the most important mechanism in preventing leachate generation and, ultimately, releases of contaminants.



Long-term Care

- How will the potential for human exposure to contamination be minimized in the absence of RCRA post-closure care?
- Can maintenance and monitoring activities cease or be reduced without causing an adverse impact to human health and the environment?



ADDITIONAL CONSIDERATIONS



Benefits of Post-Closure Permits

- Basic Permitting Requirements (e.g., duty to comply, duty to provide information, annual monitoring reports, compliance schedules).
- Unit-Specific Informational Requirements
- Financial Assurance
- Corrective Action
- Enforceability
- Public Participation



More Considerations

- EPA recommends that the regulatory agency consider extending the post-closure care period (and associated permits or other enforceable documents) when corrective action continues beyond the original PCC period (see 40 CFR 264.90(c)(3) and 264.96(c)).
- State programs may be broader in scope or more stringent than EPA's RCRA hazardous waste regulations, and requirements can vary from state to state.



Questions?