



Mark Parkinson, Governor
Roderick L. Bremby, Secretary

DEPARTMENT OF HEALTH
AND ENVIRONMENT

www.kdheks.gov

August 10, 2010

Hazardous Waste Management System;
Identification and Listing of Special Wastes;
Disposal of Coal Combustion Residuals
From Electric Utilities Docket
Attention Docket ID No. EPA-HQ-RCRA-2009-0640
U. S. Environmental Protection Agency
Mailcode: 5305T
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: State of Kansas Comments on EPA Proposed Rule on “Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities (Docket ID No. EPA HQ-RCRA-2009-0640)

Dear EPA:

On behalf of the State of Kansas, I appreciate this opportunity to provide comments on EPA’s proposed regulations related to the management and disposal of coal combustion residues. As proposed, this regulation will significantly impact the State of Kansas in numerous ways regardless of whether EPA decides to regulate disposal under Subtitle C or Subtitle D. Changes in either proposed option are needed to avoid unnecessary adverse impacts to state regulatory programs, private businesses, and human health and the environment. In general, this proposal, including the Subtitle D approach, applies a regulatory scheme which does not include the appropriate level of flexibility to consider and allow what is necessary and appropriate in all geologic and climatic settings.

This comment letter provides an overview of our Kansas concerns with the proposed regulation and some general suggestions for EPA’s consideration. We have also prepared and attached detailed comments which provide information specifically requested by EPA as well as recommended regulatory language to replace some provisions in the proposed rule.

Kansas is appreciative of the fact that EPA has requested input on the history of CCR management in the states and the extent of environmental harm caused by any past releases. We hope that the lack of incidents nationwide will influence EPA’s final decision regarding the most appropriate regulatory approach.

Kansas has eight (8) coal-burning power plants that manage fly ash, bottom ash, and various air pollution control residuals in landfills and surface impoundments. Through more

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than 50 years of operating history, there has never been an incident where an environmental release has impacted surface water or groundwater. It is clear from this result that increased regulation will not yield any benefit. Human health and the environment has been adequately protected by the permitting laws and regulations that are presently in-place in Kansas.

At present, Kansas has a full system of waste and water permits and a beneficial use approval process to ensure that CCRs are properly managed to prevent impacts to human health or the environment. Kansas recognizes that all states may not have similar regulatory programs that provide these safeguards; however, EPA should not promulgate new CCR regulations that would adversely impact proven state regulatory programs such as in Kansas. Any federal regulations should establish minimum requirements to be applied to facilities in states where no approvable state regulatory program exists, but they should allow states to demonstrate that their regulatory programs are adequately protective.

The State of Kansas strongly encourages EPA to maintain the Bevell Amendment and regulate the disposal of CCR under Subtitle D rather than as a “special” hazardous waste under Subtitle C. We are opposed to Subtitle C regulation for several reasons. We believe regulation under Subtitle C will create a stigma for these wastes which impacts beneficial use decisions. Of even greater significance to Kansas is our present state law that prohibits the land disposal of any RCRA hazardous waste. If CCR is regulated under the hazardous waste rules, even if EPA uses the term “special waste,” it is our interpretation that our state law would prohibit land disposal. All currently permitted disposal activities would become prohibited regardless of the standards which are applied to facility design. These wastes would need to be transported out of state for disposal. The costs and environmental impacts of this change in disposal practice would be enormous.

If the Kansas Legislature changed the existing law to allow disposal of “hazardous” CCR, other major impacts would still occur. Every facility would need to submit new design and operating plans to KDHE and the RCRA permitting process would need to be implemented. KDHE does not have the staff to oversee this transition from the current solid waste permitting system to a new hazardous waste permitting system at eight separate power plants. The transition would also result in very high costs to power companies which will certainly be passed on to customers without any anticipated environmental benefits in Kansas.

While a Subtitle D regulatory approach is preferred by the State of Kansas, the proposed regulations under this approach also should be amended. The proposed regulations do not provide states with flexibility to consider alternative liners, leachate management methods, or final covers considering variable local conditions with respect to soil types, depth to groundwater, distance from surface water, and annual precipitation. The prescriptive one-size-fits-all conservative approach is unnecessary in areas where local conditions provide an adequate and preferred degree of natural protection.

We believe it is important for EPA to thoroughly examine existing CCR disposal permitting programs in Kansas and other states before concluding that a broad overhaul is needed as opposed to proper recognition and approval of state programs. Some information about the Kansas regulatory program follows. To obtain a permit for CCR management in

Kansas and probably in many other states, a power company must provide the Bureau of Waste Management with comprehensive engineering plans, site geological information, a groundwater monitoring plan, a demonstration of financial assurance for closure and post-closure care, an operating plan, and other required permit application documents. When the waste storage units are constructed, the company must provide third party construction quality assurance to document that the units have been constructed in accordance with approved engineering plans. The permitting process also includes a public participation process consisting of a comment period and a public hearing.

In addition to the high degree of regulatory oversight by the KDHE solid waste permitting program, KDHE also routinely inspects these facilities. KDHE inspects all permitted solid waste storage or disposal areas at least one time per year. During inspections, all waste management practices are evaluated with respect to applicable regulations and permit conditions and the integrity of the containment systems is visually examined. On an as needed basis, KDHE solid waste permit engineers also visit these facilities to assess compliance related to design, construction, operations, and monitoring.

Additional state regulatory agency inspections are also performed by the Kansas Division of Water Resources (DWR). Every three years, DWR inspects dam integrity at facilities that meet the following criteria: (1) the dam or berm must be greater than or equal to 25 feet in height or (2) the dam or berm must be at least 6 feet high and retain 50 acre-feet of liquid.

Kansas would also like to emphasize that states are best equipped to make beneficial use determinations for CCR, whether the uses are in construction or agricultural applications. EPA's rule should include provisions to delegate this responsibility to states along with the authority to issue permits for disposal areas (both landfills and surface impoundments) under Subtitle D.

In summary, Kansas believes the best approach to regulating CCR nationally is to develop regulations under Subtitle D, including a required permitting program, that can be administered by states. The permitting program should allow states flexibility to consider local conditions as they relate to the design of liners, leachate management, and final covers. The beneficial use aspects to this rule should also be delegated to approved state agencies.

The currently proposed rule will not yield any significant benefits to the citizens of Kansas who have never been impacted by CCR management under the existing regulatory system, but it could greatly impact our use of limited state resources and cost our businesses and citizens a great deal of money. The Kansas program could serve as a model for federal regulation under Subtitle D with provisions for states to exercise appropriate flexibility to administer their program based upon their own unique geology and climate.

KDHE Comments on Proposed CCR Rule
August 10, 2010
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Please contact me at (785) 296-1612 or wbider@kdheks.gov if you have any questions about the information submitted in this comment letter or in the enclosed detailed comments. Thank you very much for considering these comments from the State of Kansas.

Sincerely,

A handwritten signature in black ink that reads "William L. Bider". The signature is written in a cursive style with a large, prominent "W" and "B".

William L. Bider
Director
Bureau of Waste Management

Enclosure Kansas Detailed Comments Regarding Proposed CCR Rule

C John Mitchell, Director, KDHE Division of Environment
Dennis Degner, Chief, Solid Waste Permits Section

**Detailed Comments from the State of Kansas
Regarding EPA Proposed Rule
Hazardous and Solid Waste Management System; Identification and listing of Special
Wastes; Disposal of Coal Combustion Residuals From Electric Utilities
Date of Comments: August 5, 2010**

Docket ID No.: EPA-HQ-RCRA-2009-0640

Federal Register dated June 21, 2010

Pages of document are 35128-35264

(Note: Format used in this document -

Normal text that follows the bold font is Kansas' response/comments/suggested language)

The comments included in this attached address many details of the proposed regulation as well as information requested by EPA in the June 21, 2010 Federal Register proposal. Kansas' overall perspective on this regulation including a summary of key concerns is addressed in the cover letter which has also been submitted.

Preamble: Coal Combustion Residuals: Disposal

There are three key areas of analyses where EPA is seeking comment:

- (1) The extent of existing damage cases**
- (2) The extent of the risks posed by the mismanagement of CCRs**
- (3) The adequacy of State programs to ensure proper management of CCRs (e.g., is groundwater monitoring required of CCR landfills and surface impoundments). p. 35133**

Kansas' response/comments

(1) History of CCR management in Kansas shows no evidence of environmental damage:

Since 1976 all industrial landfills in Kansas have been required to have solid waste permits. Designs submitted as part of permit applications must be prepared by licensed professional engineers and licensed geologists and reviewed by regulatory staff that is licensed as professional engineers and geologists. From 1976 until the present (2010), CCRs have been managed in permitted landfills, surface impoundments and piles. All disposal areas include groundwater quality monitoring systems. During the past 34 years, Kansas has had no known cases of environmental damages due to the mismanagement of CCRs as described and referenced in the Appendix to the Preamble (p. 35234- 35239).

(2) Extent of risk posed by the management of CCRs in Kansas:

Based on the successful record of CCRs management in the State of Kansas under existing solid waste statutory and regulatory authority (which includes engineering permitting, operations, construction quality assurance, groundwater quality monitoring, closure and post-closure care, and financial assurance requirements), there is no unacceptable risk posed under current management requirements for CCRs in Kansas.

(3) Kansas' regulatory program for managing CCR disposal to date:

Historical information shows that the State of Kansas has had no known cases of environmental damage. Successful management of CCRs in Kansas can be attributed to a combination of three major factors 1) responsible utility management, which includes their engineering staff, technical support personnel, quality design and construction work by engineers, geologists and contractors working for utility management, 2) professional engineering and professional hydrogeology staffs of the Kansas Department of Health and Environment (KDHE) in the Division of Environment (air pollution control, solid waste and wastewater permitting and regulatory inspections) and 3) the Kansas Department of Agriculture's Division of Water Resources, (dam safety permitting and regulatory inspections). Kansas regulatory process for management of CCR is comprehensive and provides adequate protection and assures financial responsibility for closure, post-closure care and corrective action. The regulatory requirements have covered, and continue to require sound engineering design, construction quality assurance, operations, groundwater quality monitoring, engineered closure, post-closure care, and financial assurance to cover closure, post-closure care, and corrective action costs.

Preamble: Coal Combustion Residuals: Beneficial Uses

Preamble: Section I: p. 35132

Historically, EPA has proposed or imposed conditions on other types of hazardous wastes used in a manner constituting disposal (e.g., maximum application rates and risk-based concentration limits for cement kiln dust used as a liming agent in agricultural applications (see 64 FR 45639; August 20, 1999); maximum allowable total concentrations for non-nutritive and toxic metals in zinc fertilizers produced from recycled hazardous secondary materials (see 67 FR 48393; July 24, 2002). Should EPA should establish standards, such as maximum/minimum thresholds, or rely on implementing states to impose CCR site-specific limits based on front-end characterization that ensures individual beneficial uses remain protective?

Kansas supports the rights of states to impose CCR site-specific limitations for beneficial use purposes.

Preamble: Section I: p. 35137-35141

If materials characterization is required, what type of characterization is most appropriate? If the CCRs exceed the toxicity characteristic at pH levels different from the TCLP, should they be excluded from beneficial use? When are totals levels relevant?

The determination of what material characterization is most appropriate cannot be arbitrarily assigned. The circumstances of the intended beneficial use should dictate the proper characterization. For example, if a particular CCR was going to be used in conjunction with spent lime from municipal water treatment to stabilize soil for a confined animal feeding operation (CAFO), the pH of the resulting soil mixture would most likely not encourage the leaching of metals. In this case, TCLP or SPLP metals results would not be as relevant as the total metals concentration because the risk associated with such as use would come from the ingestion of soil by livestock and not the leaching of metals into surface or groundwater.

Preamble: Section I: p. 35139

Whether EPA should fully develop a leaching assessment tool in combination with the Draft SW-846 leaching test methods described in Section I. F. 2 and other tools (e.g., USEPA's *Industrial Waste Management Evaluation Model (IWEM)*) to aid prospective beneficial users in calculating potential release rates over a specified period of time for a range of management scenarios.

Such a tool, as long as it is not mandated by federal regulation, would be a useful tool in evaluating the potential fate and transport of contaminants.

Preamble: Section IV: p. 35156-35157

If EPA determines that regulations are needed for the beneficial use of CCRs, should EPA consider removing the Bevill exemption for such uses and regulate these uses under RCRA subtitle C, develop regulations under RCRA subtitle D or some other statutory authority, such as under the Toxic Substances Control Act?

Kansas recommends that CCRs should not be removed from the Bevill exemption. Kansas has an incident-free history in the management of CCRs and does not believe that the failings of beneficial use programs in other states are indicative of the need to change current practices. Changes to the status of CCRs destined for beneficial use by the EPA would create a shotgun regulatory approach, punishing states like Kansas, who have had no issues with the management of CCRs, for issues occurring in states east of the Mississippi River, who's geography, predominant power plant designs, and climate are not comparable to the Great Plains region of the United States.

Preamble: Section IV: p. 35160

The growth and maturation of state beneficial use programs and the growing recognition that the beneficial use of CCRs is a critical component in strategies to reduce GHG emissions taking into account the potentially changing composition of CCRs as a result of improved air pollution controls and the new science on metals leaching.

The state of Kansas does not currently mandate an inventory of GHG emission reduction activities, nor does the state have plans to link the beneficial use of CCRs to GHG emissions. Additionally, Kansas is not pursuing the advance of the "new science" of metals leaching and will instead continue to use the TCLP and SPLP tests until the EPA, ASTM, or other governing science body properly develops and vets a new metals leaching protocol.

Preamble: Section IV: p. 35162-35163

Information and data relating to the agricultural use of FGD gypsum, including the submission of historical data, taking into account the impact of pH on leaching potential of metals, the variable and changing nature of CCRs, and variable site conditions.

Currently Kansas has two power plants that generate FGD gypsum, both located in the eastern third of the state. While there are two geographic regions of the state that could benefit from the addition of FGD gypsum to agricultural fields (sodic soils in south central Kansas and heavy clay glacial till soil in northeast Kansas), there have been no requests submitted to the state to use FGD gypsum as a soil amendment. In the event that the state were to receive a request for such a beneficial use, the evaluation of the FGD gypsum would not be different from the evaluation of any other waste material destined for land application. Factors such as metals concentration and loading, rate and volume of application, location, and climate would all be taken into account.

Additionally, gypsum (and FGD gypsum) is highly soluble when applied to agricultural fields in non-arid regions, so the leachability of metals from FGD gypsum is not as important as the total metal concentration.

Preamble: Section IV: p. 35163

Information and data on the extent to which states request and evaluate CCR characterization data prior to the beneficial use of unencapsulated CCRs.

Kansas has not had any requests for the unencapsulated beneficial use of CCRs and does not have a set protocol on the testing of CCRs for such uses; however, the fluid nature of the beneficial use program in the state allows regulatory staff to evaluate each potential use scenario and adjust the testing requirements to fit that particular use scenario.

Preamble: Section IV: p. 35163

The appropriate means of characterizing beneficial uses that are both protective of human health and the environment and provide benefits. EPA is also requesting information and data demonstrating where the federal and state programs could improve on being environmentally protective and, where states have, or are developing, increasingly effective beneficial use programs.

The volume of beneficial use requests, including those involving CCRs, in the state of Kansas, taken in conjunction with the variability of the requests, has created a situation where a “one size fits all” approach to beneficial use request evaluation is not feasible. The two predominate beneficial uses requested in Kansas are for agricultural and civil engineering purposes, though requests involving CCRs have been almost exclusively in the latter category. The evaluation of beneficial use requests begins the same for each of these two main categories. The entity requesting the beneficial use determination must prove that 1) the material is not hazardous based on RCRA definitions and supporting analytical laboratory data (typically TCLP tests) and 2) that the intended beneficial use is not a veil for disposal. If the beneficial use request passes these two criteria, Kansas regulatory staff then looks at the specific intended beneficial use and develops additional laboratory testing criteria and use restrictions to ensure reasonable human and environmental protection.

Given the above approach for evaluating and approving beneficial use requests, the state of Kansas would be hesitant to create a more regimented protocol that would not allow each beneficial use request to be evaluated on its own set of unique circumstances. Additionally, CCR beneficial use requests are not required for “typical” applications, i.e. use of fly ash as a concrete admixture or use of bottom ash as sandblasting media. Forcing such approvals into a situation where staff must review each and every request, even for uses that have been considered standard by industry groups such as ASTM or ASCE, would cause undue burden to state regulatory staff already taxed by declining state budgets and workforce reductions.

Preamble: Section IV: p. 35163-35164

Whether certain uses of CCRs (e.g., uses involving unencapsulated uses of CCRs) warrant tighter control and why such tighter control is necessary.

Under the current system of beneficial use determination in Kansas, this point is moot. All requests to beneficially use any waste material, CCRs and otherwise, are evaluated with human health and environmental protection in mind first and foremost.

Preamble: Section IV: p. 163-164

Whether it is necessary to define beneficial use better or develop detailed guidance on the beneficial use of CCRs to ensure protection of human health and the environment, including whether certain unencapsulated beneficial uses should be prohibited.

Unencapsulated use of CCRs, as long as they can be proven to be genuine beneficial uses and not guises for disposal, would be evaluated and regulated by the state of Kansas. Broadly restricting a category of potential beneficial use based on a few regionally grouped incidences of mismanagement goes against the precepts of innovation credited to waste reduction initiatives put in place by many states. Such prohibitions of usage should be left to each state, where factors such as precipitation, soil chemistry, and CCR composition and generation can be evaluated by regulatory staff that have expertise in these local issues.

Preamble: Section IV: p. 35163-35165

Whether the Agency should promulgate standards allowing uses on the land, on a site-specific basis, based on site specific risk assessments, taking into consideration the composition of CCRs, their leaching potential under the range of conditions under which the CCRs would be managed, and the context in which CCRs would be applied, such as location, volume, rate of application, and proximity to water.

Currently, the beneficial use program in Kansas takes most of the listed factors into consideration when approving waste materials, including CCRs, for beneficial use/land application. Kansas places restrictions on the land application of any waste material, including setbacks from property lines, residences, surface waters, and water supply wells. Additionally, metals loading limits, rate and frequency of application, and soil conditioning and agronomic nutrient qualities are other factors that Kansas weighs when evaluating a beneficial use/land application request. Kansas does not view additional promulgated federal standards as necessary in the evaluation of beneficial use/land application requests since the current state program takes into account a high level of protection of human and environmental health.

Preamble: Financial Assurance: p. 35210

Kansas has had financial assurance requirements in effect for all solid waste landfills, including industrial landfills, since 1994. The financial assurance requirements address closure, post-closure care, and corrective action.

PROPOSED REGULATIONS

Subtitle C Option: p. 35254-35264

Kansas respectfully requests that EPA **not** regulate CCRs under hazardous waste regulatory authority (Subtitle C, Parts 261, 264, and 265, 268, and 270). Regulation under Subtitle C would have major adverse impacts to Kansas. Kansas state law currently prohibits the issuance of permits for solid waste disposal facilities for Subtitle C wastes. If EPA chooses the Subtitle C approach, it will require all CCRs generated in Kansas to be shipped out of state at significant negative economic and environmental impacts. KDHE does not believe that the strict environmental standards of Subtitle C are needed to provide adequate protection of human health and the environment as related to CCRs management. The long history of safe CCRs waste management in Kansas under state laws and regulations that are substantially equivalent to the federal Subtitle D standards demonstrates that these regulatory standards are adequate and effective in protecting human health and the environment..

Subtitle D Option: p. 35240-35253

Location Restrictions (p. 35241)

Rule as proposed

Sec. 257.60 Placement above the natural water table.

(a) New CCR landfills and new CCR surface impoundments and lateral expansions must be constructed with a base that is located a minimum of two feet above the upper limit of the natural water table.

(b) For purposes of this section, natural water table means the natural level at which water stands in a shallow well open along its length and penetrating the surficial deposits just deeply enough to encounter standing water at the bottom. This level is uninfluenced by groundwater pumping or other engineered activities.

For the geological conditions encountered in Kansas, and the location restrictions currently in Kansas solid waste regulations for siting all solid waste landfills, including Subtitle D municipal solid waste landfills, this proposed language is confusing and contradictory. Kansas requests this section to be modified to read as follows:

Sec. 257.60 Placement above the uppermost aquifer.

New CCR landfills and new CCR surface impoundments and lateral expansions must be constructed with a base that is located a minimum of five feet above the upper limit of the uppermost aquifer as defined in proposed regulation 257.40 and certified by a qualified groundwater scientist, professional geologist, or professional engineer.

Design Criteria (pp. 35243-35244)

Section 257.70

Rule as proposed

Sec. 257.70 Design criteria for new CCR landfills and lateral expansions.

(a) New CCR landfills and lateral expansions of CCR landfills shall be constructed:

(1) With a composite liner, as defined in paragraph (a)(2) of this section and a leachate collection system that is designed and constructed to maintain less than a 30-cm depth of leachate over the liner. The design of the composite liner and leachate collection system must be prepared by, or under the direction of, and certified by an independent registered, professional engineer.

(2) For purposes of this section, composite liner means a system consisting of two components; the upper component must consist of a minimum 30-mil flexible membrane liner (FML), and the lower component must consist of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. FML components consisting of high density polyethylene (HDPE) shall be at least 60-mil thick. The FML component must be installed in direct and uniform contact with the compacted soil component.

(3) For purpose of this section, hydraulic conductivity means the rate at which water can move through a permeable medium. (i.e., the coefficient of permeability).

(b) [Reserved]

For the geological and climatic conditions encountered in Kansas this proposed language is limiting and would not allow designs which can be equally protective while having the advantage of being sustainable indefinitely into the future. Capillary barrier designs using in-situ materials and geosynthetic clay liners have been used successfully in Kansas landfills located in areas of low precipitation. Other liner designs consisting of compacted clay have been adequately protective as demonstrated by years of groundwater monitoring in areas of eastern Kansas with higher precipitation and more shallow groundwater. A composite Subtitle D liner is clearly not needed to protect groundwater or surface water in all geologic and climatic scenarios. States should have the flexibility to review and approve of alternative liner designs that will provide adequate protection. Therefore, Kansas requests that paragraph (a)(1) of this section be modified to allow alternate designs as follows:

1) With a composite liner, as defined in paragraph (a)(2) of this section and a leachate collection system that is designed and constructed to maintain less than a 30-cm depth of leachate over the liner *or an alternate design approved by the Director of an approved state that demonstrates that leachate will be contained or managed in a manner that is protective of ground water and surface water.* The design of the composite liner and leachate collection system must be prepared by, or under the direction of, and certified by an independent registered, professional engineer. (modification in italics)

Section 257.71

Rule as proposed

Sec. 257.71 Design criteria for existing CCR surface impoundments.

(a) No later than [five years after effective date of final rule] existing CCR surface impoundments shall be constructed:

(1) With a composite liner, as defined in paragraph (a)(2) of this section and a leachate collection system between the upper and lower components of the composite liner. The design shall be in accordance with a design prepared by, or under the direction of, and certified by an independent registered professional engineer.

(2) For purposes of this section, composite liner means a system consisting of two components; the upper component must consist of a minimum 30-mil flexible membrane

line (FML), and the lower component must consist of at least two-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. FML components consisting of high density polyethylene (HDPE) shall be at least 60-mil thick. The FML component must be installed in direct and uniform contact with the compacted soil component.

(3) For purposes of this section, hydraulic conductivity means the rate at which water can move through a permeable medium (i.e., the coefficient of permeability).

In Kansas, when permitted designs call for composite liners, Kansas assures good composite action by requiring intimate and uniform contact between the FML component and the compacted soil component. Kansas supports the last sentence of subsection (a)(2) as written above. Kansas believes that the introduction of the leachate collection system between the two components of the composite liner would defeat the composite action. Kansas requests paragraph (a)(1) of this section be modified to read as follows.

(1) With a composite liner, as defined in paragraph (a)(2) of this section and a leachate collection system above the upper component of the composite liner. The design shall be in accordance with a design prepared by, or under the direction of, and certified by an independent registered professional engineer.

Section 257.72

Rule as proposed

Sec. 257.72 Design criteria for new CCR surface impoundments and lateral expansions.

(a) New CCR surface impoundments and lateral expansions of CCR landfills or surface impoundments shall be constructed:

(1) With a composite liner, as defined in paragraph (a)(2) of this section and a leachate collection system between the upper and lower components of the composite liner. The design of the composite liner and leachate collection system must be prepared by, or under the direction of, and certified by an independent registered, professional engineer.

(2) For purposes of this section, composite liner means a system consisting of two components; the upper component must consist of a minimum 30-mil flexible membrane liner (FML), and the lower component must consist of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. FML components consisting of high density polyethylene (HDPE) shall be at least 60-mil thick. The FML component must be installed in direct and uniform contact with the compacted soil component.

In Kansas, when permitted designs call for composite liners, Kansas assures good composite action by requiring intimate and uniform contact between the FML component and the compacted soil component. Kansas supports the last sentence of subsection (a)(2) as written above. Kansas believes that the introduction of the leachate collection system between the two components of the composite liner would defeat the composite action. Kansas requests paragraph (a)(1) of this section be modified to read as follows.

(1) With a composite liner, as defined in paragraph (a)(2) of this section and a leachate collection system above the upper component of the composite liner. The design shall

be in accordance with a design prepared by, or under the direction of, and certified by an independent registered professional engineer.

Closure Criteria (p. 35252)
Section 257.100

Proposed Rule

(c) At closure, the owner or operator of a surface impoundment must:

(1) Eliminate free liquids by removing liquid wastes or solidifying the remaining wastes and waste residues;

(2) Stabilize remaining wastes to a bearing capacity sufficient to support the final cover; and

(3) Cover the surface impoundment with a final cover designed and constructed to:

(i) Provide long-term minimization of the migration of liquids through the closed impoundment;

(ii) Function with minimum maintenance; and

(iii) Promote drainage and minimize erosion or abrasion of the cover;

(iv) Accommodate settling and subsidence so that the cover's integrity is maintained; and

(v) Have a final cover system that meets the requirements of subsection (d).

Paragraph (d) of this section prescribes one cover design option and paragraph (e) authorizes an alternative final cover design. Therefore Kansas requests that paragraph (c)(v) be modified as follows:

(v) Have a final cover system that meets the requirements of subsection (d) or (e).

Proposed Rule

(d) For closure with CCRs in place, a final cover system must be installed at all CCR landfills and surface impoundments that is designed to minimize infiltration and erosion. The final cover system must be designed and constructed to:

(1) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1×10^{-5} cm/sec, whichever is less, and

(2) Minimize infiltration through the closed CCR landfill or surface impoundment by the use of an infiltration layer that contains a minimum 18-inches of earthen material, and

(3) Minimize erosion of the final cover by the use of an erosion layer that contains a minimum 6-inches of earthen material that is capable of sustaining native plant growth, and

(4) Minimize the disruption of the final cover through a design that accommodates settling and subsidence.

(e) The owner or operator of the CCR landfill or surface impoundment may select an alternative final cover design, provided the alternative cover design is certified by an independent registered professional engineer and notification is provided to the state and the EPA Regional Administrator that the alternative cover design has been placed in the operating record and on the owner's or operator's publicly accessible internet site. The alternative final cover design must include:

(1) An infiltration layer that achieves an equivalent reduction in infiltration as the infiltration layer specified in paragraphs (d)(1) and (d)(2) of this section, and

(2) An erosion layer that provides equivalent protection from wind and water erosion as the erosion layer specified in paragraph (d)(3) of this section.

For the geological conditions encountered in Kansas this proposed language could result in final covers needing to be composite caps incorporating a geomembrane. In several solid waste landfills in Kansas, post-closure maintenance of such cover systems has been challenging. Such cover systems are not sustainable indefinitely into the future. On the other hand, appropriately designed alternative final covers such as capillary barrier covers and evapotranspiration covers are being successfully used in Kansas and such covers are designed to be protective indefinitely into the future with minimal maintenance. EPA technical experts and trainers have been supportive of such covers being used for Subtitle D landfill and similar technical basis would apply to CCR landfills. Kansas requests that paragraphs (e)(1) and (e)(2) of section (e) be deleted and section (e) be modified to read as follows:

(e) The owner or operator of the CCR landfill or surface impoundment may select an alternative final cover design, provided the alternative cover design is certified by an independent registered professional engineer and notification is provided to the state and the EPA Regional Administrator that the alternative cover design has been placed in the operating record and on the owner's or operator's publicly accessible internet site.

Subtitle D Regulations: Financial Assurance: p. 35239-35240

As an associated part to this rulemaking process, a separate regulatory subpart could/should be incorporated in Parts 257 and 258 to cover financial assurance requirements for closure, post-closure care, and corrective action.
