



STATE OF IOWA

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DEPARTMENT OF NATURAL RESOURCES
JEFFREY R. VONK, DIRECTOR

To: MSW landfill rule revision stakeholders.
From: Jeff Myrom, Deputy Bureau Chief, Energy & Waste Management Bureau.
Re: Request for technical information and comments regarding alternative liner design.
Date: 1/21/05

The purpose of this memo is to request information from stakeholders regarding select design issues pertaining to alternative liners. This information is important because it will help the DNR draft rules for MSW landfill liners and leachate collection systems in Iowa.

The DNR is specifically requesting detailed stakeholder responses and comments pertaining to any or all of the following technical design questions. Stakeholders may submit additional information related to the effectiveness of alternative liners if desired.

- 1A. Given that final cover may not be installed for a significant period of time (e.g. for 30 years or longer over some disposal cells), why should point-of-compliance modeling for alternative liners be allowed to include the final cover?
- 1B. If final cover is not allowed to be a factor in point-of-compliance modeling for alternative liner certification, how can alternative liners (without leachate recirculation or bioreactive operations) still be designed and constructed as modeled that achieve the point of compliance?
- 1C. If point-of-compliance modeling for alternative liner certification (without leachate recirculation or bioreactive operations) is allowed to include final cover, then what time-period is appropriate for installation of the final cover? Furthermore, why is that time-period appropriate?
- 2A. Given that leachate may be recirculated for a significant portion of a disposal cell's active life, why should point-of-compliance modeling for landfills with leachate recirculation over alternative liners be allowed to include the final cover in these situations?
- 2B. If final cover is not allowed to be a factor in point-of-compliance modeling for alternative liner certification, how can alternative liners with leachate recirculation still be designed and constructed as modeled to achieve the point of compliance?
- 2C. What modeling program and methodologies accurately simulate the impacts of the addition of leachate through recirculation on liner permeance and leakage to groundwater?

- 3A. Given that bioreactive operations (i.e. addition of liquids for achievement of up to 45% waste moisture content) may occur for a significant portion of a disposal cell's active life, why should point-of-compliance modeling for bioreactive landfills with alternative liners be allowed to include the final cover in these situations?
- 3B. If final cover is not allowed to be a factor in point-of-compliance modeling for alternative liner certification, how can alternative liners with bioreactor operations (i.e. addition of liquids for achievement of up to 45% waste moisture content) still be designed and constructed as modeled to achieve the point of compliance?
- 3C. What modeling program and methodologies accurately simulate the impacts of the addition of liquids through bioreactive operations on liner permeance and leakage to groundwater?
- 4A. Why should point-of-compliance modeling for alternative liner certification be allowed to include intermediate soil layers (e.g. daily and intermediate cover)?
- 4B. What is the magnitude of the impact of including intermediate soil layers (e.g. daily and intermediate cover) on point-of-compliance modeling for alternative liner certification? Furthermore, given this impact, should the certifying design engineer also certify that such intermediate layers are constructed as modeled?
5. How can an alternative liner (not including the final cover) be designed and constructed as modeled such that it is equivalent to a composite liner in terms of permeance and leakage to groundwater? Furthermore, how can such performance be verified through field tests in Iowa?
6. How can an alternative liner (not including the final cover or intermediate soil layers) be designed and constructed as modeled such that it is equivalent to a composite liner in terms of permeance and leakage to groundwater? Furthermore, how can such performance be verified through field tests in Iowa?
7. Are there more appropriate models and methodologies, or series of models and methodologies, to demonstrate and verify point-of-compliance modeling and construction for regulatory requirements? If so, what are they and why would you recommend them?

The DNR is accepting written public comment pertaining to this memo until the close of business on Friday, March 25, 2005. The DNR recognizes that many of these questions require significant technical work to answer, and thus we will consider extensions to this deadline if requested by stakeholders. However, expedient responses will aid the DNR in issuing draft rules to the public. Persons wishing to provide written comments should submit them to the following address:

**Iowa Dept. of Natural Resources
Attn: Jeff Myrom
502 East 9th St.
Des Moines, IA 50319**

When submitting comments, the DNR encourages stakeholders to utilize the following guidelines. These guidelines aid the DNR in accurately understanding your input.

- Include your name, mailing address and contact information.
- Please state if you are submitting comments as an individual, or for a business or organization.
- State the specific question(s) on which you are commenting.
- Explain your views as clearly as possible by describing any assumptions, data, or technical information you utilized.
- Provide specific examples to illustrate your concerns, as well as copies of technical documents or references.

Thank you for your responses and comments.