Enhanced Waste Stabilization and the RD&D Rule Kansas' Experience

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Subtitle D MSWLFs

- Subtitle D Landfills 1990's to date
 - Composite liner at the base
 - "NO" liquids into the waste mass
 - No greater than 12 inch head of leachate on the composite liner, and
 - -Composite cap.



Subtitle D MSWLFs

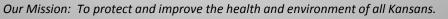
• RESULT

- Dry entomb relatively dry waste mass
- How long could such a containment be sustainable?
- What kind of post-closure activities would be required?
- How long would post-closure care be required?



1990's through 2004, in Kansas

- Municipal Solid Waste had to pass the paint filter test
- Liquid waste streams would need to be conditioned to pass paint filter test – permit mod.
- Alternate Final Covers approved as a variance to the prescriptive regulation
 - One capillary barrier cover
 - Several ET covers
- No greater than 12 inch head of leachate on the composite liner



And Environment

So what happened in 2004, in Kansas

- Not just Kansas, the USA
- March 22, 2004, EPA promulgated the RD&D rule – 40 CFR 258.4
- Allows approved states to issue RD&D permits to certain MSWLFs.
- RD&D? PERMITS



Permits

- Require **statutory** authority.
- Is based on standards established in regulations typically.
- A regulator
 - is responsible for
 - is credible when
 - -Is in his/her comfort zone when

administering well defined standards.



Permits (contd.)

- What standards could the regulator use to assess compliance?
- For the permit mod related to liquid restrictions
 Get it to pass the paint filter test
 - Add flyash, or sawdust, or just plain old dirt available on site, and
 - Stir, and stir, and stir, till it passes the paint filter test!



The Kansas Story

- The Bureau of Waste Management (BWM) obtains approval from EPA to administer the RD&D rule – November 2009
- This authorizes BWM to allow flexibility in three areas in Subtitle D MSWLFs:
 - Liquid waste streams may be approved for disposal,
 - Storm water run-on berms could be removed, allowing storm water to run onto the active disposal area, and
 - Alternative final covers could be approved.
- The Bureau of Waste Management announces that it encourages enhanced waste stabilization within MSWLFs which would, and could result in:
 - timely generation and therefore better management of LFG
 - Potentially minimize the period that post-closure care would be required for landfills



The Kansas Story (contd.)

- Stakeholders in Kansas are overwhelming in favor of making Alternate Final Covers work
- Several Subtitle D landfill owners, and liquid waste generators, are serious about this option for managing liquid waste streams.



The Kansas Story (contd.)

- Research, Development and Demonstration
 Permit
- Permit it for Research
- Gather data
- Develop the process and adjust it based on data gathered – an iterative process.
- Permit is renewed every two years in Kansas
- Continue development to Demonstrate a Design that matches the specific site.



The Regulatory Standards during research, and development phase?

- Not greater than 12 inch head of leachate on the liner,
- Data to be reported to the regulatory agency
- No regulated hazardous waste (Subtitle C waste) into a Subtitle D landfill.
- THAT's IT.



Looking Ahead in Kansas

- Research, Develop, Research, Develop....till we have a great Design.
- Goal is to stabilize the waste mass and minimize post-closure care period/requirements.
- Enhance biodegradation resulting in enhanced landfill gas production which can then be beneficially used.
- Final covers that can be erosion resistant and stable even while allowing infiltration of precipitation to facilitate biodegradation.























Another Request

- Generator VVF Kansas City Services, LLC
- Waste Pit grease by-product waste of tallow/lard and grease used in soap manufacturing
- 3,000 gallons by tanker
- To be disposed in a composite lined landfill in the Kansas City area



Another Request (contd.)

- The Material Safety Data Sheet
- Manufacturer Cargill Meat Solutions
- Chemical name Animal Fats and Fatty Acids
- Trade name Tallow/Lard/Choice White Grease



Another Request (contd.)

- From Beef to
- Soap to
- Landfill disposal to
- Landfill gas to Sacramento
- Resulting in enhanced stabilization of the waste in a landfill



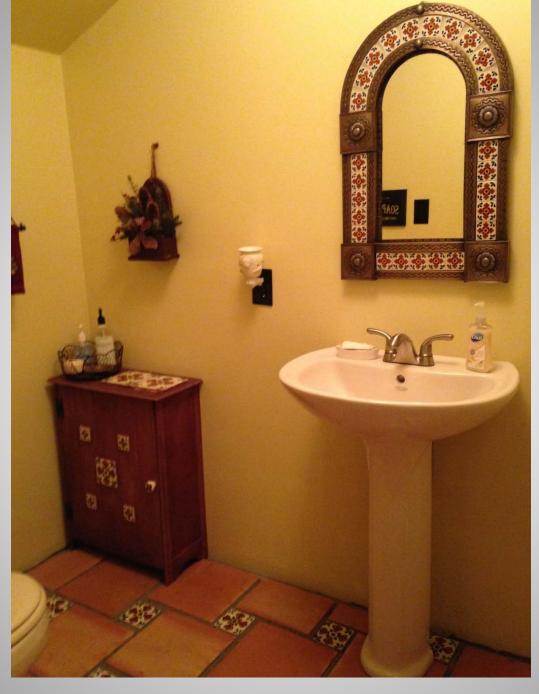




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A Powder Room?

- Working together with mutual respect from lawmaker to the person tuning the wells, and everybody in between.
- Every Landfill like a powder room
- We can do it!!



Contact Information

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