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
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.
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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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