Disposal of Solid Waste Generated by the Drilling of Oil & Gas Wells by Land-Spreading

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Oil and Gas Drilling/Production Wastes

Waste Eligible for Land-Spreading
- Water based drilling mud and cuttings generated by drilling oil and gas wells and associated injection wells

Waste Not Eligible for Land-Spreading
- Produced salt water
- Fracking fluids
- Petroleum-based drilling waste or produced petroleum products/wastes
Cutting and mud mixture/slurry
Alternative Disposal Methods for Drilling Waste

- Traditional disposal in on-site pits (KCC)
- Land-spreading (KCC lead in state; some transport to OK)
- Salt caverns (KDHE)
- Commercial MSW landfills (KDHE)
Land-Spreading: Disposal vs Beneficial Use

Land-spreading may be beneficial in certain cases, according to KSU agronomists, but **overall** it is classified as disposal in Kansas.

**Beneficial use decisions**
- Made by KDHE Bureau of Waste Management
- True benefit must be demonstrated (only certain soil types)
- Application required
- Environmental impacts evaluated

**Other possible beneficial uses**
- Road stabilization
- Other?
Regulatory Basis Authorizing Land-Spreading as Disposal

- KCC and KDHE worked with the Legislature to modify solid waste law HB 2597
- Land-spreading is included in list of SW disposal activities that can occur without a permit – KSA 65-3407c
- Application must be submitted to KCC
- Approval to land-spread must be obtained from KCC which will administer program
Key Provisions of HB 2597

- Land-spreading must follow KDHE’s best mgt practices
- If annual precipitation is > 25 inches, incorporation into soil is required
- Groundwater table must be > 10 feet
- No documented chloride contamination in groundwater
- Each location requires separate application
- $250 application fee to KCC
- KCC administers program
- KDHE must adopt new land-spreading regulations by January 1, 2014
Key Land Eligibility Criteria

- First time use or > 3 yr and < 300 ppm Cl
- Chloride < 500 ppm
- Buffer requirements (several)
- Slope < 8%
- Unconsolidated material (soil) > 2 feet
- Select soil types
- Groundwater table > 10 feet
- No documented Cl contamination in groundwater
Other Application Submittals

- Drilling mud components
- Soil texture determination
- Site maps (buffers, receptors, slope, cells)
- Lab analyses (soil, irrigation water)
- Waste sampling and analysis plan
- Land-spreading operation procedure
- Contingency Plan
- $250 Fee
Loading Rate Calculations

Average concentration in top 12 inches must be less than 900 ppm chloride

Maximum chloride concentration in waste to be landspread 10,000 ppm

Dilution is allowed

Online tool calculates loading rate based on soil and waste chloride content or electrical conductivity
Implementation of Land-Spreading

- Notify KCC 48 hours prior to land-spreading
- Record data on tables and maps (provided format)
- Follow “Best Management Practices” (record any discrepancies)
- Submit report to KCC within 60 days of completion
- Re-establish vegetative cover as necessary
Benefits of Land-Spreading Option

- Avoid concentrated disposal of large volumes (200,000+ gal/well) in on-site pits
- Minimize transportation impacts to limited SubD Landfills
- Reduced cost of drilling waste disposal
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