

Testimony on Senate Bill 375
presented to
Senate Natural Resources Committee

by

William L. Bider
Director
Bureau of Waste Management

February 9, 2012

KDHE appreciates this opportunity to provide testimony in support of Senate Bill 375 related to the disposal of drilling fluids and solids generated through oil and gas exploration and production activities. This bill was developed cooperatively by KDHE and the Kansas Corporation Commission (KCC) to address the increased waste generation associated with horizontal drilling practices. Industry representatives have reported that traditional disposal methods for these wastes in on-site earthen pits are no longer practical, especially if multiple wells are drilled in one location. Based upon waste generation estimates, a pit the size of a football field and seven feet deep would be needed to dispose of the 2 million gallons of wet mud and drill cuttings from the four wells that may be drilled at one location.

KCC and a drilling company contacted KDHE several months ago to discuss alternative disposal options including off-lease disposal. One suggested option was the land-spreading of drilling waste similar to what is allowed in the States of Oklahoma and Texas. Since preferred land-spreading locations could be off-leased property, KCC believed it was necessary to examine applicable solid waste laws enforced by KDHE rather than the oil and gas regulatory programs administered by KCC.

Initially, KDHE's existing "beneficial use" program was considered as a way to exempt the land-spreading from the solid waste disposal requirement in permitted disposal facilities. This program, which is administered by the Bureau of Waste Management, allows solid wastes to be "used" if a benefit can be clearly demonstrated. Beneficial use determinations must also ensure that there are no impacts to public health or the environment. KDHE evaluated whether there were benefits associated with land-spreading, including consultation with agronomy experts at Kansas State University. This investigation indicated that a small benefit was possible if these drilling wastes were land-spread on certain sandy soils. The drilling wastes could improve the water holding capacity of certain soils as well as soil texture. However, this benefit in some locations would not fully address disposal needs because wells may be drilled in areas that do not have nearby acceptable soil types. It was determined that a statutory change was needed to allow land-spreading of drilling waste as an approved "disposal" method regardless of whether there was a clear benefit.

This bill would establish land-spreading of drilling fluids and solids as an approvable disposal method that does not require a solid waste disposal permit issued by KDHE. K.S.A. 65-3407c already lists several disposal activities that can occur without a permit, but special site-specific approvals are required. This approval process is administered by the Bureau of Waste Management for all existing exemptions, but under the proposed bill, the land-spreading approval process would be administered by KCC. The bill specifies that KDHE and KCC will enter into a memorandum of agreement to describe thoroughly the application review and approval responsibilities. KDHE gathered information from numerous sources, including state officials outside of Kansas and Kansas State agronomists, to assist the department in determining that controlled land-spreading of these drilling wastes could be done

in a safe manner. Furthermore, it appears that land-spreading in close proximity to the drilling sites may be the most environmentally sound manner to manage this very large waste stream. In response to our study of relevant information, KDHE is in the process of developing an application process and a mathematical model to calculate waste loading rates on the receiving soil. Much of this work is completed; however, certain details must still be resolved. KDHE has coordinated the development of the application and approval process with KCC and presented an initial draft to an industry group for review.

If this new disposal authority is not established, the only ways to dispose of this large waste stream would be large on-site disposal pits or transfer to off-site permitted landfills, which would add cost and major transportation impacts. It is undesirable to dispose of this waste in large on-site pits because permanent impacts to the land would be anticipated due to the volume and size. In addition, a large accumulation of this high chloride (salty) waste has a potential to impact underlying groundwater resources. With respect to off-site disposal in permitted landfills, there is presently only one privately-owned municipal solid waste landfill with an approved operations plan to receive this type of waste. It is located in Harper County. They would not have the capacity to accept all generated waste and it is uncertain as to whether other permitted facilities would be available to receive this waste. As mentioned above, a single horizontally drilled well will generate approximately 500,000 gallons of waste, which would require at least 100 large transport tankers. Four or five wells are possible at each drilling location which would multiply the number accordingly. The transportation impacts including fuel use, air pollution emissions, and rural road damage would be significant based upon anticipated transport distances to a permitted landfill (50 to 100 miles).

The remainder of our testimony provides preliminary information about the application and approval process.

The Application

An online two-part application would be submitted to KCC by the driller.

Part 1 – Designed to approve the site where the land-spreading will occur and provide a sampling and analysis plan for the drilling wastes to be land-spread (chloride concentration and radiation level). The driller would also agree to follow the “best management practices” stipulated in the application. KCC approval authorizes land-spreading in a given location for the waste generated by one or more specific wells.

Part 2 – Self-implementing; however, KCC must be notified as to when land-spreading will occur. The driller (or their contractor) samples the waste and utilizes the soil and waste analyses to determine the eligibility of the waste to be land-spread and to calculate the loading rate using the model developed by KDHE. Every truck load or tank must be tested to calculate properly the loading rate and to determine eligibility. The loading rate can be expressed in tons per acre, gallons per acre, barrels per acre, or depth of spread waste (up to two inches in thickness).

Preliminary Land-Spreading Restrictions and Best Management Practices

- The waste loading model ensures that the maximum chloride concentration in the upper 12 inches of soil will not exceed 900 parts per million (ppm), which is 10 percent below the 1000 ppm chloride soil clean-up level used by KDHE for remediation sites.
- KDHE continues to assemble information related to the possible presence of naturally occurring radioactive material (NORM) in drilling waste and implications on land-spreading practices. Based upon currently available information, KDHE is considering establishing NORM testing requirements and limits in waste to be land-spread to ensure that public exposures are minimized.
- Only certain soil types are acceptable for land-spreading.

- Some important criteria must be satisfied for land to be eligible for land-spreading including adequate buffer zones from property lines, water bodies, water wells, etc; surface slope cannot exceed 8 percent; depth to groundwater must be greater than 5 feet; and there can be no natural gullies, channels, etc.
- There can be no runoff from the land-spreading sites to comply with applicable water laws and regulations. In accordance with this requirement, land-spreading shall not take place when the ground is frozen or when precipitation is occurring or forecast. (Part 1 of the application must also include a contingency plan for how drilling waste will be stored and disposed if land-spreading is disallowed due to weather restrictions.)
- The chloride content in the waste to be land-spread must be less than 10,000 ppm.
- If the land is irrigated, the chloride content in the irrigation water must be less than 350 ppm.
- Land-spreading can only occur once every three years on a given property and the residual concentration on previously used land must be less than 300 ppm.
- The maximum depth of land-spread drilling waste is two inches.

Drillers will be required to submit “post-land-spreading” reports to KCC documenting the areas that received waste, analytical results, loading rates, and land-spreading procedures used. KCC will prepare an annual report on all land-spreading activity in Kansas.

The KCC and KDHE agreement will specify that KCC will oversee the administration of this program including routine compliance assessments. The agreement will also specify how enforcement will take place when serious non-compliance is identified considering relevant existing statutory authorities and directives to both agencies.

Thank you for allowing me to explain some details of how this bill will be implemented to ensure that these drilling wastes are properly managed. I would be happy to answer any questions by the committee.