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Hot Water Topic: Water and Shale Gas Development

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Blakeslee then discussed the great potential for multi-purpose water projects. He also explained the importance of sustainable funding and the need to secure additional money for water delivery infrastructure.

Kraft spoke from the perspective of the farmer about the need to give everyone an equal voice. He also discussed how water is forgiving in that it eventually cleans itself and will remain consistent in its quantity.

The session concluded with several questions from the audience.

Leigh Auerbach

THIRTIETH ANNUAL AMERICAN BAR ASSOCIATION WATER LAW CONFERENCE

San Diego, California February 22-24, 2012

HOT WATER TOPIC: WATER AND SHALE GAS DEVELOPMENT

At the 30th Annual ABA Water Law Conference in San Diego, three professionals with ties to the oil and gas industry presented an interesting discussion on the effects of hydraulic fracturing ("fracking") on water sources.

First to present was Michael Brownell, the Senior Director of Regulatory Affairs at Chesapeake Energy, Inc. Brownell focused extensively on the importance of natural gas in domestic energy production in the United States. He emphasized that significantly less water is used or produced in shale gas hydraulic fracturing compared with almost every other form of energy production. Fracking a well generally takes between three and five million gallons of water per frack, and over the course of a year each well will use roughly 40 million gallons of water. While these numbers seem large, when compared to the water requirements for production of other energy sources, fracking actually uses significantly less water. For example, in the Marcellus Shale area, power producers used the same amount of water as the entire fracing industry uses in a year in less than fourteen days.

Brownell devoted less time to speaking on water quality issues. Water use and pollution are arguably the most controversial part of fracing, but Brownell focused his water-related comments on the extensive evidence that fracing is tightly regulated and that those regulations are effective in addressing water quality issues. For example, he spoke briefly on the specific issue of methane in drinking water, and said that either the water had methane in it to begin with, or that if the well caused the methane, the responsible companies were quick and thorough in remediating the problem, thus showing that existing regulations are adequate.

Kristin Moseley from the law firm of Porzak Browning & Bushong LLC, spoke second and discussed the interaction of law and industry in relation to water produced during fracing. Moseley explained that water produced during fracing is generally considered waste by the fracing in-

dustry because it merely a by-product of the fracturing process and is often too polluted to reuse or recycle. Moseley made clear that the water varies in quality depending on where the target formation is located and what the company is mining. Coalbead methane ("CBM"), for example, yields significantly more water than shale gas drilling does.

Because of the polluted nature of the water, fracing companies can only deal with the water in one of three ways. First, the water can be left in open evaporation ponds. Unfortunately, because these ponds require sophisticated liners and can only be of a certain size, they are often not the preferred option. The second and most common form of disposal is reinjection. With reinjection, the water is pumped back underground far below drinking water supplies to a formation that should be geologically capable of permanently containing the water. Reinjection is often highly regulated because of the uncertainty associated with underground formations and the danger posed to groundwater supplies with incorrect reinjection. The third form of disposal is treatment and recycling. Historically, treatment has not been economically viable. However, Moseley argued that the industry trend is toward treating and recycling the water because the other two forms of disposal are becoming more and more regulated, which is making them more costly as well. As a result, treatment is becoming more economically viable in relation to the other options.

Moseley ended her presentation with an overview of water rights ownership issues relating to water produced in CBM production after the *Vance v. Wolfe* decision in Colorado. Noting that the *Vance* decision forced CBM producers to use Colorado's priority system if the basin they were drilling in was tributary, Moseley expressed her belief that the *Vance* decision could be extended to other forms of fracturing. If this were to happen, the cost of fracing in areas with tributary underground water sources would increase dramatically.

Jane P. Davenport of Delaware Riverkeeper was the final speaker. Davenport expressed serious concerns about the environmental effects of fracing. She presented extensive photographic evidence that environmental impacts could be significant both during the facing process and after, when the oil or natural gas must be transported away from the drilling site. Davenport argued that not only does the fracing process consume large amounts of water, but also that potential failures in the drilling process could cause pollution to drinking water supplies. For example, the fractures could behave unexpectedly or encounter a fault, allowing fracking fluid to migrate into drinking water supplies. Perhaps the most common type of well failure occurs when a well casing fails and permits fracing fluid, oil, or gas to enter the drinking water supply. Also, in order to drill the well, industry must clear a drilling pad. Many of the wells in Pennsylvania are in forested areas, therefore Davenport claimed that the clearing of these pads has lead to significant deforestation.

Davenport further claimed that many of the fracing companies build pipelines through forested areas in order to transport their product from the wells to processing facilities. These pipelines often cross over, under,

or through streams and Davenport argued that they had the potential to leak into the water supply or disturb the habitat of the local flora and fauna. Perhaps even more damaging, fracing companies often build roads to and from well sites. Davenport claimed that these roads often cause significant environmental damage through deforestation and habitat disruption. Further, the possibility of a spill or explosion along these roads would inevitably cause environmental damage.

After all three presentations, the group fielded questions from the audience. While the questions were varied, the overriding concerned seemed to be whether fracing could exist in a way that is both economically viable and environmentally friendly. Both Brownell and Mosely seemed to believe that not only is it possible, but that the shift towards recycling water produced during fracing showed that government and industry leaders are working closely together to achieve that very goal. Davenport however, felt that fracing could never be safe enough to the environment to be justified.

Johna Varty

UNIVERSITY OF DENVER WATER LAW REVIEW'S FIFTH ANNUAL SYMPOSIUM: 2012 THE YEAR OF WATER

Denver, CO April 13, 2012

WATER'S NEXT FRONTIERS: NEW WAYS OF ADDRESSING CONFLICT

Anne Castle, Assistant Secretary of Water and Science for the United States Department of the Interior ("DOI"), gave the keynote address and discussed the importance of multi-party resolutions in the success and sustainability of current water projects.

Urging water law practitioners to transition their way of thinking about conflict and disputes, Castle discussed the tendency to use litigation in water courts to resolve such conflicts and the possible success of other strategies. While litigation may be necessary to get parties at the table, negotiation is particularly effective when there are many competing interests at stake.

Castle's keynote address focused on two major federal water initiatives: (1) resolving water rights for Native American tribes, and (2) the Glen Canyon Dam. Neither of these projects would have been successful without negotiation and compromise between interested parties.

The idea of multi-party negotiation is not a new concept. Before discussing either of these recent projects and how they came to fruition, Castle examined historical water projects where compromise was critical. She also discussed the celebration of several significant milestones occurring this year. Three water districts are celebrating their 75th anniversary: Colorado Water Conservation Board, Colorado River Water Conservation District, and Northern Colorado Water Conservancy District.