SUMMARY FOR PAPER #7
Saturday, October 3, 2009 (10:50 A.M.)

WATER ISSUES IN OIL AND GAS DEVELOPMENT AND PRODUCTION: WILL WATER CONTROL WHAT ENERGY WE HAVE?

by

Professor Robert E. Beck

Because we are to talk about the future as well as the present, my talk focuses on the relationship between the water resource and our energy agenda, present and future. My thesis is that water, and thus water law, will and should control a lot of what we do both in developing our current energy sources and in planning what to develop as our energy sources of the future.

While the sufficiency and availability of our water resources are topics of growing concern, we are not at the point where water controls what we do in the energy field. To give an idea of where we are at, I will be discussing recent developments in relation to three specific oil and gas topics where there will be significant new or increased demands on the water resource. These are (1) fracing; (2) coal bed methane (CBM) production; and (3) corn-based ethanol production.

As to fracing, the substantial increase is, and will be, due to the development of gas in tight shale formations; there is also an increase because of coal bed methane production. For example, the Marcellus Shale formation covers 95,000 square miles at a depth of 4,000 to 8,500 feet and a thickness of 50 to 200 feet and spans six states with wells already drilled in Pennsylvania. The Department Of Energy Primer estimates 3,800,000 gallons of water needed for fracing per well in the Marcellus Shale with an additional 80,000 gallons for drilling the well. Here concerns have been raised both as to availability of water for fracing, the potential threat to other water sources from fracing, and the disposal of waste water, thus raising both water allocation and water pollution control issues.

As to coal bed methane production, there is tremendous growth in the Powder River basin, but growth elsewhere as well, including Kansas. The concerns have been about the tremendous amount of water that needs to be removed from underground in order to develop the methane. Under the Powder River Basin program Environmental Impact Statement (EIS) there could be up to 51,000 new wells pumping up to 1.0 trillion gallons of water from groundwater aquifers onto the surface with the attendant digging of 3,100 unlined reservoirs (infiltration or waste pits) to hold some of the untreated produced water, the balance of which would be discharged untreated into ephemeral and intermittent drainages or sprayed onto the ground. There are concerns both as to whether that water is, or will be, wasted and whether disposal of the produced water is sufficiently controlled for pollution prevention. Thus again we have water allocation and pollution control issues.

As to corn-based ethanol production, our interest from an oil and gas perspective is in it as an additive to, or substitute for, gasoline; again, we have tremendous growth. In 2006, the U.S.

ethanol industry produced nearly 5 billion gallons of ethanol with at least 73 corn ethanol plants under construction and with modifications at other plants increasing production capacity by another 6 billion gallons by 2009. "With such rapid growth, water availability, utilization, and quality are key issues that must be addressed." [Andy Aden, *Water Usage for Current and Future Ethanol Production,* Southwest Hydrology, Sept./Oct. 2007, at 22.] The Bush administration in 2007 proposed a goal of 35 billion gallons by 2017 followed by 60 billion gallons by 2030. Here there has been significant policy discussion, but the water concerns have focused on allocation both for the ethanol production process and for producing the feedstocks.

Because all three areas involve allocation concerns and because at least two involve disposal concerns, the talk will focus on water allocation and wastewater disposal. Two aspects of allocation under U.S. water law regimes will be discussed: (1) who has authority to allocate water to the use; and (2) what is the standard for allocation. In two cases, *Vance v. Wolfe,* 205 P.3d 1165 (Colo. 2009), and *William F. West, LLC v. Tyrrell,* 206 P.3d 722 (Wyo. 2009), decided by state supreme courts, irrigators challenged what they thought the state was not doing with reference to allocation of CBM water but ought to be doing under the states' water law regimes. The cases will be the focal point for discussion.

Similarly, two aspects of wastewater disposal will be discussed: (1) what is the scope of federal regulation under the federal Underground Injection Control (UIC) program under the Safe Drinking Water Act; and (2) are states regulating these water disposals on their own, that is, going beyond what the federal pollution control laws may require. Again, two recent court opinions, *Legal Environmental Assistance Foundation, Inc. v. United States Environmental Protection Agency,* 276 F.3d 1253 (11th Cir. 2001), and *Pennaco Energy, Inc. v. Montana Bd. of Env'tl. Rev.*, 347 Mont. 415, 417, 199 P.3d 191, 193 (2008), one involving Alabama's UIC program, and one involving Montana's regulation of CMB produced water as a pollutant, will be the focal points for the discussion.

In addition the federal district court opinion upholding the Powder River basin CBM development plan EIS, *Western Organization of Resource Councils v. Bureau of Land Management,* 591 F. Supp. 2d 1206 (D. Wyo. 2008), will be discussed.

Where could these cases lead? What possible water law developments could the future bring that would restrict energy development? Of course, if there is a real conflict between life sustenance uses of water and energy production, life sustenance must prevail; use of potable water should be prohibited if non-potable water is adequate and available; recycling should be required whenever recycling is feasible; if facilities are not bound to a particular location, they should be required to locate where there is more rather than less water available; and, in planning for energies of the future, energy forms that will consume less water, if otherwise feasible, must be favored over those that will consume significantly more water.