

Beyond Fracking -- Experts Challenge Safety of Exploratory Wells, Vertical Drilling

Marie C. Baca, ProPublica, 12-7-10

For more than two years, the natural gas drilling debate has focused primarily on the use of hydraulic fracturing in horizontal wells. But expert testimony submitted for a government hearing next month challenges long-held assumptions about the safety of deep vertical drilling and exploratory wells, which operate in many states with limited regulatory oversight.

The administrative hearing will be held by the Delaware River Basin Commission, a federal agency that regulates a variety of water and land activities in Pennsylvania, New York, New Jersey and Delaware. At issue is the commission's June 2010 determination that companies that drill exploratory wells—wells that are drilled to test theories about where gas might be found—must obtain the agency's approval before drilling within its jurisdiction, and whether or not 11 exploratory wells in Pennsylvania that have already been approved should be exempt from the regulation.

The commission rarely holds hearings, and the progress of this one is being followed closely by industry and environmental advocates because of its implications for the drilling boom in the gas-rich Marcellus Shale rock formation, which underlies much of the basin.

The commission's decision to regulate exploratory wells is being challenged by the Northern Wayne County Property Owner's Alliance, with drilling companies Hess Corp. and Newfield Exploration Co. joining as interested parties. Challenging the exemption of the 11 approved wells are two environmental organizations, Damascus Citizens for Sustainability Inc. and the Delaware Riverkeeper Network, along with Nockamixon (Pa.) township, where one of the wells is located.

The Commission refused to supply any of the testimony that has been submitted for the hearing without a Freedom of Information Act Request. ProPublica filed that request, but in the meantime the environmental organizations provided the reports they submitted, as well as the reports the commission submitted on its own behalf.

None of the other parties involved in the hearing responded to requests to comment or to provide ProPublica their expert reports or other relevant documents.

The commission's reports assert that:

- Wells drilled 7,000 to 8,000 feet to reach the Marcellus formation create pathways through which naturally-occurring contaminants can potentially migrate into ground and surface water
- Natural gas exploratory wells have the potential to harm endangered species in the river basin

The reports submitted by the two environmental organizations assert that:

- Although they receive less regulatory review, exploration wells can be more dangerous than production wells because the drilling hazards in an exploration area are by definition unknown

- Hazardous chemicals are used in the exploratory well construction process, and the risk of those chemicals moving into groundwater in the Delaware River Basin is exacerbated because of natural seismic activity in the area
- The 11 wells in question do not meet the criteria for exploratory wells. Documentation indicates that some of these wells will be used not just for gathering data but for gas production, which circumvents part of the regulatory process required for production wells
- Pennsylvania's erosion, sedimentation, and storm water regulations for gas and oil companies require far less oversight than any other industrial activity in the state
- The Pennsylvania Department of Environmental Protection's permit process, construction guidelines and emergency preparedness plans are insufficient to mitigate the risk factors posed by exploratory wells
- Any drilling activities, vertical or horizontal, that take place in shale rock formations pose significant risks to human health and the environment

The commission's reports were written by fish and wildlife biologist Robert M. Anderson, ecologist Danielle A. Kreeger, petroleum engineer Patrick M. O'Dell, biologist Erik Silldorf, ecologist John K. Jackson, ecologist Bernard W. Sweeney and public health researcher Conrad Daniel Volz.

The environmental organizations' reports were written by engineer Michele E Adams, chemist Ronald E. Bishop, civil engineer Peter M. Demicco, petroleum engineer Susan L. Harvey, environmental scientist Glenn C. Miller, engineer Emmett M. Owens, geologist Paul A. Rubin, and medical toxicologist Daniel T. Teitelbaum.

Edward N. Cahn, a former federal judge, has been appointed by the Delaware River Basin Commission to preside over the January hearing. Cahn will submit his recommendations to the commission, which will vote on them at a future public meeting.