

## **‘Shale’ Of The Century? ‘Big Money’ At Stake With Proposed Gas Well**

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By Jeremy Hunt

HARRISONBURG - If a proposed natural gas well in Rockingham County becomes reality, it would be the first of its kind in Virginia.

And if the Houston energy company that wants to explore gas in the Marcellus Shale field can turn a profit, similar wells are sure to spring up throughout the Shenandoah Valley.

Carrizo (Marcellus) LLC, a subsidiary of Carrizo Oil & Gas Inc., has filed a special-use permit application with Rockingham County to drill an exploratory well in Bergton.

The county Board of Supervisors tabled the request last week following a public comment period in which a half-dozen people raised concerns about the environmental impact of such an operation.

Supervisors and county staff had similar questions and concerns that the board plans to clarify and answer before putting the request to a vote.

The Marcellus Shale gas field is a sedimentary rock formation that underlies much of New York, Ohio, Pennsylvania and West Virginia. A small portion of it lies under western portions of the Old Dominion.

"There are some small fingers of that shale formation that come into the northwestern part of Virginia," said Mike Abbott, public relations manager for the state Department of Mines, Minerals and Energy.

‘It's Big Money’

Natural gas is often found trapped inside shale. A process called hydrofracking is used to break up the rock and release the gas.

Geologists have known about natural gas in Marcellus for decades, and energy companies have performed exploratory drilling in Bergton before, most recently in the 1970s.

Data from those explorations is what led Carrizo to Bergton, according to David Schnitz, a consultant with the company.

Despite having been aware of the gas potential, energy companies have only recently begun to tap into the resource because of several factors.

For one, the estimated amount of gas in the formation has swelled in the last couple of years. In 2008, geologists estimated that Marcellus contained more than 500 million cubic feet of gas, more than 250 times what was thought to be there in 2003.

Scientists postulate that 10 percent of the gas - worth about \$1 trillion - can be extracted. That amount, about 50 million cubic feet, is enough energy to supply the entire United States for two years.

Rising energy prices and technological advances also helped spark the Marcellus Shale boom.

"It's big money," says Karen Burns, a Rockingham County resident who owns property in Pennsylvania that she is considering leasing to an energy company.

Production On The Rise Pennsylvania is the hub of Marcellus drilling activity. Exploratory activity in Pennsylvania began in 2004, said Bryan Swistock, water resources extension specialist at Penn State.

Since then, and mostly in the last two years, dozens of Marcellus wells have sprung up as companies try to cash in on the reserves, Swistock said.

According to the Pennsylvania Department of Environmental Protection, there were nearly 100 active Marcellus Shale operators in the Keystone State.

"It's only going to increase, and it's been increasing significantly," Swistock said.

The potential for big money has generated interest in Marcellus beyond the U.S. In the last couple of months, foreign companies announced plans to invest billions of dollars in Marcellus assets and production.

### Regulation Seen As Key

As could be expected, natural gas production from Marcellus Shale has unique issues and risks.

Water quality is a major concern in Pennsylvania, including contamination by some of the chemicals involved in hydrofracking.

Burns, who has been researching Marcellus as she weighs what to do with her land, claims that some energy companies have engaged in dishonest practices in Pennsylvania to acquire mineral rights, particularly with elderly landowners.

"It can be big money, and also it can attract less than good neighbors," she said.

If Marcellus production takes off in Virginia, Swistock said, proper regulations and enforcement will be crucial.

Abbott expressed confidence in Virginia's existing regulations and said the mines, minerals and energy department will be keeping a close eye on Carrizo's operations, provided his agency and the Rockingham board approve the company's permits.

The department has been regulating oil and natural gas production, mostly in southwest Virginia, for

decades, he added.

"The only difference about this is there would be drilling in a formation that's never been drilled before," he said. "Every formation can present its own issues or problems or benefits. It has to be weighed in that manner."

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