

Your Private Drinking Water and the Natural Gas Industry: Part Two

This column is presented weekly by the Public Education sub-committee of the Clinton County Natural Gas Task Force in an effort to provide accurate, up-to-date information on activities surrounding the Marcellus Shale formation and the natural gas exploration industry. For more information on Task Force activities, visit the Task Force page on the Clinton County government website at www.clintoncountypa.com.

In response to questions and concerns about the impact from natural gas drilling to private drinking water supplies, the Clinton County Natural Gas Task Force recently hosted two public meetings that focused on protection and testing of private water supplies near natural gas drilling. Bryan Swistock, water resource extension specialist with Penn State's School of Forest Resources, was a key presenter at the meetings and provided valuable information and practical advice for people interested in protecting their private drinking water supplies. His presentation is being reproduced in this column, with today's article being the second of a four-part series.

Swistock is a proponent of having your private drinking water tested.

“Water testing helps document any problems you may have in general with your water – and there are many pre-existing problems, such as corrosiveness, hard water, iron, and different bacteria, that are common to our area. Having your water tested helps document your water quality.”

He recommends having your water tested by a state-certified laboratory as a way of educating yourself on the quality of your water (the Clinton County Extension Office has a listing of state-certified labs). If natural gas drilling is going to take place near your water supply, thorough third-party testing also offers some legal documentation.

Swistock does not recommend testing the water yourself since tests taken without a certified chain-of-custody or conducted by non-certified labs will not be considered as valid tests in a court of law.

“Companies that offer what's called ‘chain-of-custody’ testing through state accredited laboratories will provide you with results that will be considered a legal document,” says Swistock.

Swistock encourages people to make sure their water supply is properly constructed -- including having the water well casing located above ground, installing a sanitary water well cap, etc. And he says people should designate a “water supply protection area” – a buffer of at least 100 feet around the water supply source – to limit anything that might negatively impact the quality of your water.

With regard to natural gas drilling, Swistock says there are regulations currently in place that are designed to protect drinking water supplies.

Existing Regulations Protection of Drinking Water Supplies

- 200' setback from gas well to water supplies
- Pit and tank requirements for collection of waste fluids
- Certified mail notification if water supply is within 1,000' of gas well
- Freshwater protection string installed to protect groundwater
- Gas companies are “presumed responsible” for contamination of water supplies within 1,000' of gas well site
 - Most perform voluntary “pre-drill survey” to document water quality prior to drilling

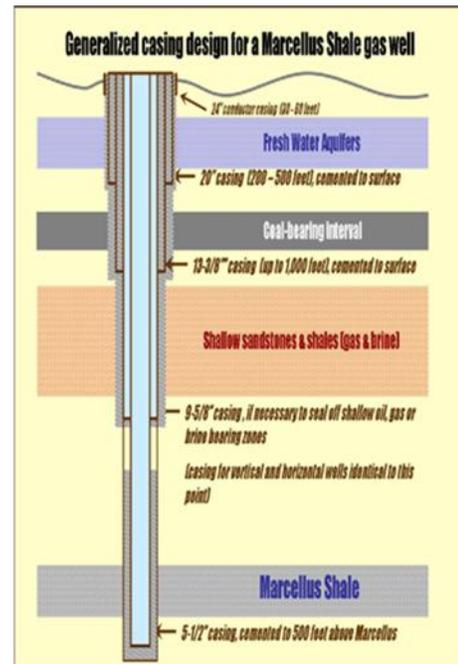


Illustration courtesy Range Resources

Swistock says the state currently is proposing several new regulations, as well as revisions to some of the existing regulations. He adds that property owners can also attempt to negotiate their own water testing requirements as part of any lease agreements with natural gas interests.

“For example, the current setback requires that any natural gas well be situated at least 200 feet away from a water supply. You could make the distance farther away as part of your lease with the drilling company.”

Swistock also listed some environmental issues with private water supplies that can occur during the process of drilling for natural gas.

WATER SUPPLY ISSUES

- Concerns from:
 - Spills or leaking pits
 - Improper gas well construction
 - Hydraulic fracturing
 - Contact with groundwater during drilling
- Most frequent issues (many are temporary)
 - Sediment during initial drilling
 - Increased metals, salts
 - Methane migration
 - Interrupted flow
- Testing is critical but there many issues
 - Trust of data
 - Cost
 - Interpretation of results



Another issue is the presence of methane in drinking water supplies. Swistock says methane is not a drinking hazard, but it is an explosion hazard.

METHANE IN WATER

- Methane can occur naturally in groundwater or migrate from gas wells
- Detected in ~20% of water wells
- Gas well casing and cementing critical to prevent methane migration
- No drinking water standard - saturation concentration in groundwater = 28 mg/L at atmospheric pressure



Next week's column will highlight the importance of testing your water prior to any natural gas well drilling, how to purchase a water test, and suggestions on what to test for in your water. The final article in the series will address how important it is to understand your water test results, and offer web sites to help determine when to test your water and information that is available through the Penn State Extension office.