Q&A's Regarding Your Private Drinking Water and the Natural Gas Industry

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.

Over the past several weeks, this column has focused on information presented at two recent public forums that addressed protection and testing of private drinking water supplies near areas where natural gas drilling is occurring. Bryan Swistock, water resource extension specialist with Penn State's School of Forest Resources, and Dan Vilello with the Pennsylvania Department of Environmental Protection (DEP), were key presenters at the meetings, and along with Jim Ladlee from the Clinton County Extension Office, fielded a number of questions from people in attendance. The Department of Environmental Protection responses were submitted by the North Central Region Oil and Gas Program Manager. Following are the questions that were posed, and the responses given.

Q. Does seismic testing have any impact on private water supplies?

A. (Swistock, Penn State Extension) Seismic testing is a relatively low-risk activity for private water wells and springs but the vibrations from seismic operations could, theoretically, cause sediment or reduced water flow if they are conducted in close proximity to a well or spring. Water supply owners might consider lease stipulations to keep seismic activity several hundred feet from a well or spring to reduce the risk of impacts.

Q. Can horizontal drilling impact private water supplies?

A. (Swistock, Penn State Extension) Horizontal drilling typically occurs at several thousand feet below the groundwater aquifers that supply water to private wells and springs. While horizontal drilling could impact a water supply, the greater risk is associated with activities near the vertical borehole.

Q. When private drinking water testing is conducted, do you also test for water flow?

A. (Swistock, Penn State Extension) Many of the environmental consultants conducting water testing can also provide estimates of water flow or yield (in gallons per minute). Local water well contractors and hydrogeologists can also conduct this type of flow testing. Accurate flow measurements are time consuming and often cost several hundred dollars. While these flow measures are valuable, they are usually less important than water quality testing.

Q. With regard to the cementing process in natural gas well drilling, are there regulations on how long the cement has to "set" and/or "cure"?

A. (Vilello, PA Department of Environmental Protection) This question is addressed in sections 78.85 (b) and (c) (Cement standards), of the State's Oil and Gas Regulations. Required compressive strength is described in section 78.85(b), and the "set" time of eight hours is established in 78.85(c), stating the casing may not be disturbed for a minimum of eight hours after cementing operations.

Q. Regarding the State's new cementing and casing regulations – why aren't shallow wells included in these regulations?

A. (Vilello, PA Department of Environmental Protection) The regulations apply to both Marcellus Shale wells and shallow wells – but some provisions will only apply to deeper wells

because of the way the rules are structured (i.e. the use of blowout preventers (BOP's) with a working pressure of greater than 3,000 psi need to have a second set of controls).

Q. If your drinking water is contaminated and a drilling company becomes responsible for supplying you with water perpetually, but then that company goes bankrupt or out of business, does some sort of bond exist to help the property owner?

A. (Vilello, PA Department of Environmental Protection) A bond or escrow account may be established depending on the particular case. Ideally, a water supply would be restored or replaced with an equivalent water supply source that would not require any more maintenance or ongoing costs than the original supply. However, if a treatment system is needed that may require maintenance, or connection to a public water supply, those costs can be calculated up-front for either a one-time pay-out to the property owner, or establishment of the escrow account.

Q. How long after a natural gas well is drilled is the drilling company responsible for any issues that may occur with someone's private water supply?

A. (Swistock, Penn State Extension) A gas drilling company can be held responsible for issues related to a private water supply at any time after drilling. The only variable is who must prove that an impact did occur. Within six months after drilling has occurred, the gas well drilling company is presumed responsible for any water quality impact to water supplies within 1,000 feet of their gas well (i.e. they must provide evidence that they did not cause the problem). Any issues with water supplies within 1,000 feet of the gas well that occur more than six months after drilling would have to be proven by the water supply owner and DEP. The burden of proof for water quality problems always lies with the water supply owner and DEP. The same is true for any water quality or quantity problem that occurs beyond 1,000 feet from the gas well site.

(Vilello, PA Department of Environmental Protection) There is no time limit in the Oil and Gas Act.

Q. If one natural gas drilling company leases your land, but then another company buys out the lease and well site, are all of the requirements under the previous lease agreements null and void?

A. (Ladlee, Penn State Extension) Everything depends on the language in the original lease agreement. Generally, unless there is a provision in the original lease agreement that prevents the lease from being assigned to another company the original lease would remain in force. As every situation is different and dependent upon the language in the lease agreement, anyone with a similar question should consult with a private attorney for specific legal advice.

Q. Is it possible for the gas drilling companies to put a dye or something similar into the drilling process so it could be tracked in the event gas or drilling material migrates?

A. (Vilello, PA Department of Environmental Protection) Not really. Dyes used for wastewater tracing tend to be filtered out and undetectable after travelling through soil for any distance. Also, the other constituents of drilling and fracing fluids would likely mask the dye. Other parameters that DEP typically samples for in investigating drilling related complaints, such as barium, strontium, and bromide, can be detected at much lower levels and are far better indicators of a potential problem.

(Swistock/Penn State Extension) Various tracers have been proposed as a method to track the movement of waste fluids. Added regulations would be necessary to require gas companies to use tracers in their drilling process.

Q. How many DEP employees/inspectors cover how many acres?

A. (Vilello, PA Department of Environmental Protection) I can only answer this for Pennsylvania's Eastern Oil and Gas Region (which includes Clinton County). We have a

complement of 21 field inspectors to cover our 45-county region. However, there is currently activity (either Marcellus, shallow drilling operations, or gas storage fields) only in about 22 of those counties. In addition to these field inspectors, we have engineers and biologists who are primarily responsible for permitting activities, but also do some erosion and sediment control and wetland encroachment compliance inspections. We also have three geologists who are primarily involved in water supply complaints and gas migration investigations.

Q. What are the DEP inspectors actually doing – are there spot checks and unannounced checks, versus responding to complaints?

A. (Vilello, PA Department of Environmental Protection) Yes -- there are spot checks and unannounced checks. Most of our inspections at well sites are unannounced. We will sometimes coordinate with the operator for certain investigations or when we are trying to get specific information, since they are otherwise often not present during our inspections. We also spend a lot of time responding to complaints. In the Eastern Oil and Gas Region, we've received 229 complaints to investigate just between January 1 and June 29, 2011. Of those, 125 were water supply complaints.

Q. How close is the nearest gas well pad to my home?

A. (Swistock, Penn State Extension) There are various websites and tools that can be used to locate Marcellus drilling permits and existing wells. The DEP eNotice system (http://www.ahs2.dep.state.pa.us/eNOTICEWeb/) can be used to receive email notification of approved or modified Marcellus drilling permits. Various maps and spreadsheets with locations of permits and active Marcellus wells are also available on the PA DEP Marcellus web page along with numerous commercial sites (rlstore.com, pagaslease.com, fractracker.org, etc.).

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