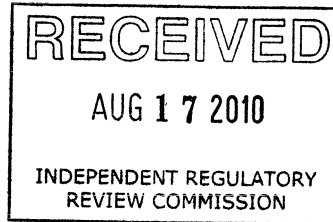


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ENVIRONMENTAL QUALITY BOARD

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Thank you for inviting comments on proposed changes to Chapter 78 regulations.

Given both the history of oil and gas drilling in Pennsylvania and the developing all-out exploitation of Marcellus Shale reserves, tighter and better regulations are necessary.

I understand that current law calls for a rebuttable presumption that pollution of water supplies within 1,000 feet of a well site has been caused by the well unless a pre-drill survey has established that pollution pre-existed. This kind of rebuttable presumption must be continued and enforced, and I understand that requirements for reporting will help. However, two aspects of Marcellus Shale wells present need for added protection.

First, given the amount of fluid forced down the well at pressure and later exported and stored – millions of gallons – a 1,000 foot area is not nearly large enough. I would suggest that a quarter mile perimeter from the outside boundaries of the work site should be protected. Let me note that not only is there a tremendous amount of fluid injected, but it is injected at depths of over one mile. Leaking fluid may well migrate horizontally as well as vertically.

Second, given the depth of the well, contamination may well develop much more slowly than it does in a shallow field well. Protection must extend in time for decades.

I am very concerned about the effect this drilling will have on our water supplies. With the projected number of wells, there will be considerable demands on our water supplies. As if that is not enough, climate change is projected to have a significant impact on the water supplies in the coming decades. A new analysis, performed by consulting firm Tetra Tech for the Natural Resources Defense Council (NRDC), examined the effects of global warming on water supply and demand in the United States. The study found that more than 1,100 counties -- one-third of all counties in the lower 48 -- will face higher risks of water shortages by mid-century as the result of global warming. While most of Pennsylvania is not projected to have severe water shortages, it is unlikely that the study took into account the withdrawals for all the anticipated wells. We can live without natural gas but we cannot live without water.

Having been raised in the coalfields area of Pennsylvania, I am aware of the industry's pattern of dealing with water supply. Replacement of water is frequently slow and of questionable quality. Of special concern are the needs of farmers whose livelihood depends on water being delivered promptly and in the quantity and quality necessary to sustain their livestock. I hope the revised regulations will adequately recognize these problems.

I am also concerned that bonding procedures will be adequate to cover landowners' problems. In the "gold rush" atmosphere that currently exists, there will be failures. There will be bankruptcies. There will be abandoned wells. The public and regulators alike will learn that the rosy projections for long term production will not come true. Exodus from the state will not occur as rapidly as the in-rush, but it will occur far ahead of present projections. The business end of protection must anticipate the problems associated with abandonment. Regulators must consider worst case scenarios in developing regulations.

I submit the following specific recommendations in addition to the points made above:

1. Casing and cementing regulations are necessary to the public health, safety, and welfare.  
As DEP points out, "A properly cased and cemented oil and gas well is critical to protecting fresh groundwater and public safety."
2. Casing regulations should reflect state-of-the-art technology in the oil and gas industry.  
Much has been learned about casing and cementing of oil and gas wells in the past several decades. Cement standards should be tightened. The industry needs to impose quality assurance standards on the cement used.
3. The regulations should be targeted at preventing gas migration into drinking water supplies.  
Poor casing and cementing can cause contamination of fresh water aquifers. Cement needs time to cure before it is disturbed. DEP proposes an eight-hour period during which no activity is to occur at the well pad which may disturb the cement. DEP should be notified at the beginning and end of the eight-hour period to ensure that the minimum eight-hour period is not breached.
4. Once a water supply has been affected by drilling, the regulations should make it easier to remedy affected surface owners' or occupiers' complaints of contaminated water from drilling and extraction operations.

Section 208 of the Oil and Gas Act states that: "Any well operator who affects a public or private water supply by pollution or diminution shall restore or replace the affected supply with an alternate source of water in quantity or quality *for the purposes served by the supply.*" [emphasis added]  
If a water supply has been affected by the well drilling operation, the proposed rules do not necessarily require the operator to supply water meeting drinking quality standards.

Proposed Section 78.51(d)(2) states: "The quality of a restored or replaced water supply will be deemed adequate if it meets the standards established pursuant to the Pennsylvania Safe Drinking Water Act (35 P.S. 721.1-721.1&), *or* is comparable to the unaffected water supply if that water supply did not meet these standards." It is unconscionable that a gas driller can supply someone with drinking water that does not meet drink water standards. Replacement water should meet drinking water standards at a minimum.

It is important that the Department know when a complaint about water supply has been lodged with the operator. I support the requirement that the operator notify the Department within 10 days, if not sooner, of a receipt of a complaint.

5. The regulations should provide for proper installation and testing of blowout equipment.

The BP oil spill in the Gulf of Mexico and EOG Resources blowout incident in Clearfield County are reminders that properly functioning safety equipment is necessary to prevent catastrophes. In both cases blowout preventer devices failed because they were not properly installed and tested. Redundant systems to prevent blowouts should be required.

6. The regulations should ensure the long-term integrity of the well. Production wells can be operated for decades. The proposed regulations (Section 78.88) require operators to test wells quarterly and report signs of problems or degradation. I support these inspection requirements.

7. Pre-drilling surveys of water quality conducted by the drilling operator must be reported to the DEP and surface landowner.

Under the regulations (Section 78.52), operators may to conduct a pre-drilling survey to show that pollution of a water supply existed prior to the drilling of a well. All test results should be disclosed to DEP and the landowners as soon as the operator receives them, regardless of whether the results show pollution or not.

One last point: Before the enthusiasm for Marcellus Shale gas developed, the state and the coal industry were touting large parts of Pennsylvania as appropriate for carbon sequestration. It should be clear that carbon cannot safely be sequestered in areas that have been drilled to great depths for gas. Let's remember that sequestration is supposed to last forever. The plan cannot call for it to be sequestered for a few years. Because carbon sequestration begins by compressing it at great pressure, the state must declare Marcellus regions off limits for carbon sequestration.

Respectfully submitted,

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