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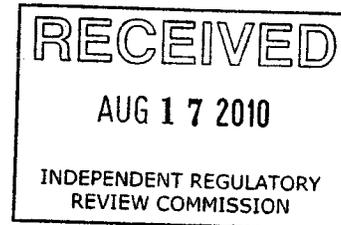


**SIERRA  
CLUB**  
FOUNDED 1892

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August 6, 2010

Environmental Quality Board  
P.O. Box 8477  
Harrisburg, PA 17105-8477



Dear Board members,

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

The Sierra Club was founded in 1892 to explore, enjoy, and protect our planet. The Sierra Club has about 23,000 Pennsylvania members. Nationally and locally, the Sierra Club has been a leader in conservation practices and environmental protection. Natural gas drilling and production comes with an environmental cost to the Commonwealth. The present gas rush in the Marcellus Shale will cause water pollution problems in our rivers and streams unless state-of-the-art equipment is installed and procedures adopted to prevent the kind of disasters that have already been experienced in Pennsylvania, West Virginia, and the Gulf of Mexico.

Pennsylvania has had a long history of oil and gas drilling. Its legacy of water pollution, spills, abandoned wells and scarred landscape indicate that tighter and better regulations are necessary if Marcellus Shale drilling is to be conducted responsibly in this state.

We are also concerned that bonding procedures will be not 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. There will be accidents. Regulators must consider worst case scenarios in developing regulations.

In March 2010, in response to an advanced notice of proposed rulemaking, EarthJustice, Sierra Club and other organizations submitted technical comments on the proposed rules on cementing and casing. Many of the comments were prepared by Ms. Susan Harvey, a petroleum and environmental engineer and a principal of Harvey Consulting, LLC. On the basis of her 23 years of experience, Ms. Harvey has developed a set of recommendations designed to ensure that revised Chapter 78 regulations represent industry best practices, protect public health and the environment, and satisfy DEP's stated goals of: (1) minimizing public concerns associated with gas migration into public drinking water supplies.; (2) updating material specifications and performance testing requirements; and (3) revising design, construction, operations, monitoring, plugging, water supply replacement, and gas migration reporting requirements. We join in the comments submitted by EarthJustice (Aug. 9, 2010) and wish to highlight additional points.

1. More stringent casing and cementing regulations are necessary to the public health, safety, and welfare.

The quality of a cement job is a critical factor in the prevention of gas or fluid movement from deeper zones into groundwater. To effectively seal off all production horizons and isolate freshwater aquifers, the cement must be set continuously and evenly throughout the annular space to preclude the formation of any gaps, channels or other malformations. As DEP points out, "A properly cased and cemented oil and gas well is critical to protecting fresh groundwater and public safety." In conjunction with EarthJustice, Sierra Club submitted comments on the advanced notice of proposed rulemaking and noted that best management practices have not yet been incorporated into the proposed regulations. These protective practices have been adopted in other states; there is no reason the industry cannot follow them in Pennsylvania.

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. All surface and intermediate casing should be new pipe. Pipe standards should explicitly require that all casing be of sufficient quality to prevent any migration of oil, gas or water from one geological horizon to another throughout installation, cementing, drilling, and production. 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. A longer wait time may be necessary to ensure that the cement has set. 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. The existing 50-foot buffer in subsection 78.83(c) is insufficient to ensure the complete isolation of vulnerable underground aquifers. DEP previously rejected our suggestion that the minimum buffer distance be at 100 feet. Other states, Michigan and Wyoming, have adopted a 110 foot buffer. In order to properly protect groundwater sources from contamination, the surface casing must be set and permanently cemented into an impervious formation or consolidated zone that is at least 110 feet below the deepest freshwater aquifer.

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.

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 drinking water standards. Replacement water should meet drinking water standards at a minimum.

Indeed, 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] Because water supplies generally serve many purposes, including providing drinking water, protecting this “purpose served” requires meeting drinking water standards.

Section 78.51(h) imposes a requirement to notify DEP of a water quantity or quality complaint. It is important that the Department know when a complaint about water supply has been lodged with the operator. Many events can occur at the well site, or nearby sites, which could have caused the complaint. The Department needs timely notice in order to investigate the source of the complaint. The Sierra Club supports a requirement that the operator notify the Department within **one day** of a receipt of a complaint (in lieu of the ten days in the proposal). Notification can be accomplished via a simple phone call.

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. DEP has requested that operators install certain equipment and follow certain procedures, but not yet incorporated into regulation. These include:
1. A snubbing unit, which prevents pipes from ejecting uncontrollably from a well, must be used to clean out the composite frac plugs and sand during post-fracturing (post-frac) if coil tubing is not an option;
  2. A minimum of two pressure barriers must be in place during all post-frac cleanout operations;
  3. Any blowout preventer equipment must be tested immediately after its installation and before its use. Records of these tests must be kept on file at the well site or with the well site supervisor;
  4. At least one well site supervisor who has a current well control certification from a recognized institution must be on location during post-frac cleanout operations; and
  5. A remote-controlled, independently powered blowout preventer unit, which allows workers to control what’s happening on the rig at a safe distance, must be located a minimum of 100 feet from the well and operational during all post-frac cleanout operations.

These requirements should be included in the proposed regulations to ensure state-of-the-art best management practices.

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. We 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. A property owner who consents to have the tests

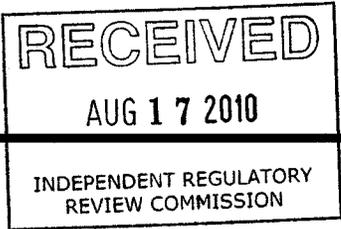
conducted should be apprised of the results, and may wish to take additional steps to protect the water supply.

Respectfully submitted,

Thomas Y. Au  
Conservation Chair  
Sierra Club, Pennsylvania Chapter

2857

Cooper, Kathy



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**From:** Thomas Au [thomxau@gmail.com]  
**Sent:** Friday, August 06, 2010 1:51 PM  
**To:** EP, RegComments  
**Subject:** Comments on Proposed Rulemaking, Environmental Quality Board, 25 Pa. Code Chap. 78, Oil and Gas Wells  
**Attachments:** Chapter 78 comments - final.pdf

Attached is a PDF file of the comments by the Sierra Club, Pennsylvania Chapter on the proposed rules. Please call me if you have difficulty opening the document.

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