

## **EXECUTIVE SUMMARY**

### **Oil and Gas Well Casing and Cementing (Amendments to Chapter 78)**

The proposed rulemaking would update existing requirements regarding the drilling, casing, cementing, testing, monitoring and plugging of oil and gas wells, and the protection of water supplies. The new and amended sections are §§78.1, .51, .52, .71-.73, .81-.85, .88, .89, .91-.96, .121 and .122. The proposed modifications include updated material specifications and performance testing and revised design, construction, operational, monitoring, plugging, water supply replacement, and gas migration reporting requirements. The additional requirements will minimize gas migration and will provide an increased degree of protection for both public and private water supplies.

With the development of the oil and gas industry in Pennsylvania, the potential exists for natural gas to migrate from the wellbore (via either improperly constructed or old, deteriorated wells). This stray gas may adversely affect water supplies, as well as accumulate within or adjacent to structures such as residences and businesses. If a well is not properly constructed and operated there could be potential threat of a fire or explosion. These situations represent a threat to public safety, health and welfare.

Properly cementing and casing a well is critical to preventing gas migration. The updated casing and cementing requirements will provide an increased degree of protection for homeowners and water supplies. The proposed construction standards will align Pennsylvania's regulations with other states' rules as well as current industry standards. Casing pressure tests will detect deficiencies before a well could create a potential safety or environmental problem. Minimizing annular pressure will reduce the potential for gas migration. The new quarterly inspections and annual reporting will result in early detection of possible well integrity problems before impacts to the environment or public safety occur. The proposed regulations also outline the procedures the operator and the Department will utilize if there is a reported gas migration event.

Prior to drilling a well, operators will now be required to develop a casing and cementing plan that shows how the well will be drilled and completed. Use of centralizers (which keep the casing centered in the well bore) must be used at prescribed locations to ensure that cement is evenly distributed between the casing and the well bore. Cement meeting ASTM criteria for oil and gas wells must be used. Used or welded casing must be pressure tested as well as casing strings attached to heavy duty blow-out preventers. Documentation of the cement quality and cementing practices used at the well must be available for Department inspection.

Operators must inspect all of their wells quarterly and report the findings of the inspections to the Department annually. If defective casing, evidence of leaks, or if excessive pressure within the well bore is discovered, the operator must immediately notify the Department and take corrective action.

The Oil and Gas Act requires any operator who contaminates or diminishes a water supply to restore or replace the supply with one that is adequate in quantity and quality for the purposes

served. Case law on these requirements has defined when an operator must provide compensation for increased operation and maintenance costs and for what duration. The regulations codify these and other relevant holdings to clearly describe the operator's responsibility. The regulations also limit the operator's duty to restore the quality of the supply to Safe Drinking Water Act standards.

The new regulations impose a duty on operators to immediately investigate a gas migration complaint and to notify the Department if they receive such a complaint. If natural gas is found at elevated levels the operator must immediately notify emergency responders and initiate mitigation measures.

The regulations revise well plugging standards to require operators to plug wells through the producing formation rather than setting the cement plug immediately above the formation. This practice will better ensure that any residual gas or oil does not somehow channel through the plug as the cement is setting.

The proposed rulemaking was presented to the Oil and Gas Technical Advisory Board (TAB) for their consideration on September 17, 2009. Because of the scope of the changes, TAB requested additional time to review and provide comment. As part of their review, TAB formed a technical committee with representatives from various companies, trade groups and consultants. Since the initial meeting in September, the Department has met with TAB and their subcommittee on October 28, 2009, January 14, 2010, January 21, 2010 and March 25, 2010.

In addition to TAB's input, the Department received input from industry representatives, consultants and environmental groups. On January 30, 2010 the Department published an Advanced Notice of Proposed Rulemaking for a 30 day comment period. The Department received comments from 87 individuals representing industry, consultants and environmental groups. The current proposal is based on the comments received during the public comment period and comments submitted by TAB members. At its March 25, 2010, meeting, TAB voted unanimously to recommend that the EQB offer these regulations as a proposed rulemaking.

The rulemaking will become effective upon publication in the *Pennsylvania Bulletin*, which is anticipated to occur in Fall 2010. The Department recommends a 30-day public comment period for the proposed rulemaking. No public meetings are planned.