

DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF OIL AND GAS MANAGEMENT

OIL AND GAS TECHNICAL ADVISORY BOARD
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Proposal to Modify 25 Pa Code Chapter 78 to address Stray Gas Migrations

Natural gas is a combustible gas. In the right proportions its combustion can be catastrophically violent.

Natural gas is also valuable. Gas wells are essentially a facility designed to extract that value in a controlled manner.

This concept of ‘controlled’ is at the heart of the commonwealth’s Stray Gas Migration concerns. Control of natural gas released from its geologic reservoir is required for the well operator to maximize the economic benefits of their investment. If the release is uncontrolled, the gas is lost. Not only is its value lost but uncontrolled gas can create extreme hazards to people and property. Once control of the gas is lost, the operator not only faces costs to regain control but also potentially expensive and litigious remediation costs. For these reasons, it is a matter of significant public safety and policy that the extraction of natural gas be controlled and regulated to prevent those public hazards and the waste of the resource.

Pennsylvania DEP investigates many cases of alleged gas migration each year. Sometimes the cause is non extraction-related (i.e. ‘sewer gas’ or pipeline problems). However, many are traced back to either orphaned and abandoned wells left by our long history of petroleum production or to present-day wells that prove incapable of controlling the gas. Over the last decade these stray gas migrations have caused or contributed to at least 6 explosions that have killed 4 people and injured 3 others. In addition the threat of explosions has forced 20 Pennsylvania families from their homes, sometimes for months. At least 25 other families have had to deal with the shut-off of utility service or the installation of venting systems in their homes and at least 60 water wells (including 3 municipal supplies) have been contaminated.

The commonwealth recognizes and appreciates that we need to deal with the legacy wells and that the ability to plug those wells comes from fees paid by the modern industry. But the natural gas industry must also recognize and appreciate that modern day wells need to be designed, constructed and maintained to prevent the uncontrolled release of gas from the geologic reservoir into the surrounding community.

DEP is presenting to the Technical Advisory Board it ideas on the regulatory revisions it believes necessary to accomplish the public policy goal of preventing stray gas migrations from modern wells. These ideas come from analysis of common causes uncovered by our investigations and include:

- Outlawing open hole completions

- Mandating testing of the integrity of existing wells
- Mandating the testing of surface casing seals on future wells
- More fully incorporating API cementing standards and standards for casing
- Establishing a protocol for the regulated community if faced with alleged gas migrations which focuses first on stabilization of the situation to protect people and property.
- Clarifying the water supply restoration and replacement obligation when a water supply is affected by an oil and gas well, and
- Adding provisions to ensure safety equipment used in drilling new wells will function properly

We recognize that these ideas have a cost to producers who may never have had migration problems. We also recognize that industry and academic experts may have other steps that, either in conjunction with, or as a substitute for DEP's proposal, will address the problem. Therefore, we have come to the Technical Advisory Board to ask for its technical advice. We know that controversy may ensue, but we are confident that the idea of prevention of health, safety, and property impacts is a fundamental requirement of the production of natural gas. We are equally confident that once Pennsylvania's Natural Gas Industry gives thoughtful consideration to the issue, it will arrive at the same conclusion.