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## INDEPENDENT REGULATORY REVIEW COMMISSION

333 MARKET STREET, 14TH FLOOR, HARRISBURG, PA 17101

September 8, 2010

Honorable John Hanger, Chairman  
Environmental Quality Board  
Rachel Carson State Office Building  
400 Market Street, 16th Floor  
Harrisburg, PA 17101

Re: Regulation #7-459 (IRRC #2857)  
Environmental Quality Board  
Oil and Gas Wells

Dear Chairman Hanger:

Enclosed are the Commission's comments for consideration when you prepare the final version of this regulation. These comments are not a formal approval or disapproval of the regulation. However, they specify the regulatory review criteria that have not been met.

The comments will be available on our website at [www.irrc.state.pa.us](http://www.irrc.state.pa.us). If you would like to discuss them, please contact me.

Sincerely,

Kim Kaufman  
Executive Director  
wbg  
Enclosure

cc: Honorable Mary Jo White, Majority Chairman, Senate Environmental Resources and Energy Committee  
Honorable Raphael J. Musto, Minority Chairman, Senate Environmental Resources and Energy Committee  
Honorable Camille George, Majority Chairman, House Environmental Resources and Energy Committee  
Honorable Scott E. Hutchinson, Minority Chairman, House Environmental Resources and Energy Committee  
Robert A. Mulle, Esq., Office of Attorney General  
Andrew Clark, Esq., Office of General Counsel

# Comments of the Independent Regulatory Review Commission



## Environmental Quality Board Regulation #7-459 (IRRC #2857)

### Oil and Gas Wells

September 8, 2010

We submit for your consideration the following comments on the proposed rulemaking published in the July 10, 2010 *Pennsylvania Bulletin*. Our comments are based on criteria in Section 5.2 of the Regulatory Review Act (71 P.S. § 745.5b). Section 5.1(a) of the Regulatory Review Act (71 P.S. § 745.5a(a)) directs the Environmental Quality Board (Board) to respond to all comments received from us or any other source.

#### **1. Advanced Notice of Final-Form Rulemaking.**

In the Preamble to the proposed regulation, the Board has expressly asked for input on five specific areas. Those five areas include the following:

- Definition of “deepest fresh groundwater;”
- Requirements for additional safety equipment and procedures;
- Placement of centralizers;
- The concept of creating a zone of critical cement at the casing seat; and
- A provision providing the Department the ability to set more stringent local standards if needed for pollution prevention and to establish quantitative temperature limits for water used in cement mixing.

In order to give the regulated community and other interested parties an opportunity to provide input on any revisions made as a result of the Board’s requests, we recommend that the Board publish an Advanced Notice of Final Rulemaking (ANFR). An ANFR would provide the opportunity to review and resolve remaining issues before submittal of a final-form regulation.

#### **2. Additional casing string - Need; Fiscal impact.**

This proposed regulation provides standards for proper construction of oil and gas wells, including cement and casing installation. The Preamble states that if cement is not returned to the surface or when excessive pressure is placed on the surface casing seat, the regulation requires the operator to install an additional string of casing. The Marcellus Shale Coalition (Coalition) and



several of its supporters express a general concern with the use of an additional casing string. According to the Coalition, there are two reasons for their concern. First, in the Preamble (Summary of Comments and Response Section) the Board states, “it is the Department’s experience that poorly cemented casing is the reason for many gas migration cases.” However, these commentators contend that there is no technical justification for the additional casing string. Second, the Preamble also states that the “construction cost for the additional string [if cement is not returned to the surface] of casing is about \$10,000 per well.” However, commentators suggest that actual costs range from \$300,000 to \$500,000 per well, depending on depth and area.

The Board should explain the apparent cost discrepancy for construction, and provide the technical justification for the additional string of casing in the final-form regulation.

### **3. Clarity; Implementation procedures; Compliance.**

Commentators indicate that it is unclear whether the regulation applies to both existing and new wells, and the varying types of wells (for example, shallow gas wells, oil wells, Marcellus Shale wells, etc). The Lycoming Audubon Society suggests that the regulation be revised so that there are separate provisions for each well type. We note that the Regulatory Analysis Form (RAF# 15) indicates that the regulation applies to both new and existing wells. However, to improve clarity, we recommend that the Board define “new” and “existing” wells, and use the terms, when appropriate, throughout the final-form regulation.

While the regulation imposes standards for various well types, it does not set forth the consequences for failure to comply. The Oil and Gas Act (58 P.S. §§ 601.101— 601.605) defines both unlawful conduct as well as collections of fines and penalties. See 58 P.S. §§ 601.509 and 601.510. We recommend that the final-form regulation provide penalties and, where appropriate, include cross-references to these sections of the Oil and Gas Act. The final-form regulation also should clarify the amount of time necessary for existing wells to comply with the new standards imposed by the regulation.

### **4. Section 78.1. - Definitions. - Implementation procedures; Clarity.**

#### *General*

The following terms are used in the regulation but are not defined: “anticipated fresh groundwater zones;” “blow-out prevention equipment;” “shallowest productive horizon;” “area of alternative methods;” “natural gas migration incident;” “centralizers;” “agricultural water supplies;” “shoe test;” “operating well;” and “pressure rating.” We recommend that the Board include definitions for these terms in the final-form regulation.

### *Deepest fresh groundwater*

In the Preamble to the proposed regulation, the Board requested public comments concerning this existing definition. We raise three issues.

First, Associated Petroleum Industries of PA commented that the term itself is included within the body of the definition. According to the *PA Code and Bulletin Style Manual* (Manual), the term being defined may not be included as part of the definition. See *PA Code and Bulletin Style Manual* § 1.7(e). Accordingly, we recommend that the revised definition be written in a manner that complies with the Manual.

Second, the Coalition and several of its supporters commented that the definition is confusing because there are no water well construction standards in this Commonwealth, and that several of the terms used in the definition are out of date. Commentators urge that the definition be linked to numerical water standards and production of sufficient water quality and quantity for intended use. The Board should address the commentators' concerns in the revised definition of "deepest fresh groundwater."

Finally, we recommend that the term "drillers log" be replaced with a more current term such as "IADC Daily Drilling Report."

### *Cement job log*

Both Earthjustice and Highland Sewer and Water Authority suggest that the log should be sealed or certified by an expert, such as a registered professional geologist or engineer. Has the Board considered requiring such certification of compliance?

### *Surface casing*

The proposed regulation defines this term as: "casing used to isolate the wellbore from fresh groundwater and to prevent the escape or migration of gas, oil and other fluids from the well bore into fresh groundwater. The surface casing is also commonly referred to as the water string or water casing." Commentators suggest that these provisions conflict with other sections of the regulation because they result in re-defining surface casing as a water string, as opposed to a pressure containing casing string. The Board needs to clarify how it intended to define this term and if necessary, remove the term "water string" and replace it with "pressure containing casing string."



**5. Section 78.51. - Protection of water supplies. - Protection of public health, safety and welfare; Conflict with statute; Implementation procedures; Clarity.**

*Subsection (d)(1)(iii)*

In Subsection (d)(1)(iii), what will be considered “excessive maintenance” and who makes that determination? The final-form regulation should clarify these issues.

*Subsection (d)(2)*

This subsection 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 – 721.17) [Act] or is comparable to the unaffected water supply if that water supply did not meet these standards.” We raise two issues.

First, commentators question whether Subsection (d)(2) conflicts with Section 208 of the Oil and Gas Act (58 P.S. §§601.208(a)), which 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.” The Preamble to the final-form regulation should explain how Subsection (d)(2) is consistent with provisions contained in the Oil and Gas Act.

Second, Section 206 of the Oil and Gas Act states that: “restoration activities required by this act or in regulations promulgated hereunder shall also comply with all applicable provisions of the Clean Streams Law.” § 601.206(e). However, Subsection (d)(2) makes no reference to this section of the Oil and Gas Act. The Preamble to the final-form regulation should also clarify how this subsection is properly conformed with the Clean Streams Law.

*Subsection (d)(3)(ii)*

This Subsection defines “reasonably foreseeable uses.” Who will determine what meets the definition of “reasonably foreseeable uses?” The Board needs to clarify whether it is the duty of the operator or the Department to determine compliance with this definition.

Also, what is considered the “reasonable expansion of use” and who makes that determination?

*Subsection (h)*

This subsection requires a well operator who receives notice of pollution in a water supply to notify the Department within 10 calendar days. Several commentators object that this is too long for the Department to be alerted about a possible threat to public health, safety and welfare, and suggest that the timeframe for notification be one day. We share the concern that the 10-day period may not be protective of public health and safety, and recommend that the final-form regulation either include a shorter timeframe, or an explanation of why the 10-day timeframe is appropriate.

**6. Section 78.72. - Use of safety devices - blow-out prevention equipment. - Clarity.**

The citation to the Oil and Gas Conservation Law (Law) in Subsection (a)(4) appears incorrect, as it only references a portion of the Law. In the final-form regulation, the citation should be changed to (58 P.S. §§401—419).

The Coalition and several of its supporters also point out a typographical error in Subsection (h). The “Independent” Association of Drilling Contractors is actually the “International” Association of Drilling Contractors. The final-form regulation should correct this error.

**7. Section 78.73. - General provisions for well construction and operation. - Clarity.**

In Subsection (e), how does the Board intend for excess gas to be diverted away from a drilling rig “in a manner that does not create a hazard to the public health or safety?” This phrase is vague and should be clarified in the final-form regulation.

**8. Section 78.75a. - Area of alternative methods. - Statutory authority; Clarity.**

Subsection (a) permits the Department to unilaterally designate an area of alternative methods. However, Section 211 of the Oil and Gas Act states that a “well operator may request the authority to use an alternative method.” 58 P.S. §601.211. What is the Department’s statutory authority for making this designation without an initial request from a well operator?

PA American Water also indicates that the references to the “Department” actually refer to both the Bureau of Oil and Gas and the regional Bureau of Water Supply. The final-form regulation should clarify this issue.



**9. Section 78.82. - Use of conductor pipe. - Clarity.**

In Paragraph (3), the final-form regulation should clarify under what circumstances the Department would approve material other than steel to make a conductor pipe.

**10. Section 78.83a. - Casing and cementing plan. - Implementation procedures; Clarity.**

This section requires the operator to create a casing and cementing plan for how the well should be drilled and completed. We raise three issues.

First, Subsection (c) states that the operator provides the plan for Department approval upon request. Several commentators question the absence of requirements that the Department always approve the plan. Why doesn't the Department review and approve every casing and cementing plan?

Second, Highland Sewer and Water Authority suggests that the plan be sealed by an expert. Has the Department considered such a requirement?

Finally, commentators note that the regulation does not address how to revise a casing and cementing plan. We agree and recommend that the final-form regulation provide a process for revision, including whether Department approval is necessary and when drilling can begin subsequent to a change in the plan.

**11. Section 78.83b. - Casing and cementing—lost circulation. - Implementation procedures.; Clarity.**

Subsection (a) provides a list of four options for what an operator should do if cement in a well is not circulated to the surface. Commentators suggest that a 5<sup>th</sup> alternative should be added based on the language in Subsection 78.83(j), which states that: "if it is anticipated that cement used to permanently cement the surface casing can not be circulated to the surface, a cement basket may be installed immediately above the depth of the anticipated lost circulation zone." Has the Board considered adding this option?

Subsection (a) also states that the operator must notify the Department of lost circulation. Within what timeframe must the operator provide such notification? The final-form regulation should provide a specific timeframe.

Subsection (b) states that the Department may require the operator to determine the amount of casing cemented by logging "or other suitable method." This phrase is vague and should be defined further in the final-form regulation.

**12. Section 78.84. - Casing standards. - Reasonableness; Need; Implementation procedures; Clarity.**

This section sets forth standards for installing casing. We have four concerns.

First, Subsections (b) and (c) refer to the “anticipated maximum pressure” to which the surface casing can be exposed. However, Subsection (f) refers to the “highest expected working pressure.” To improve clarity, the final-form regulation should use one term consistently throughout the section.

Second, Subsection (c) relates to the requirements for used casing. Both the US National Park Service and Group Against Smog and Pollution express concerns with wells constructed with used casing. We request that the Board explain how it determined the standard for a passing pressure test for used casing.

Third, the Lycoming Audubon Society points out that once the used casing is tested in Subsection (c), there is no requirement for repairs or notification to the Department. Has the Board considered including such requirements?

Finally, Subsection (d)(3) requires a welder to be "certified in the applicable American Petroleum Institute's standards for welding casing and pipe or an equivalent training and certification program...." The regulation should specify what constitutes "an equivalent training and certification program."

**13. Section 78.85. - Cementing standards. - Reasonableness; Need; Implementation procedures; Clarity.**

This section establishes the standards for cementing. We raise three issues.

First, Subsection (c) requires that after cementing operations are complete, the casing cannot be disturbed for a minimum of 8 hours. Several commentators question whether the 8-hour requirement is necessary. The Preamble to the final-form regulation should explain how the Board determined this was an appropriate timeframe.

Second, Meiser and Earl, Inc. questioned whether the Department would allow the use of cement additives within the fresh groundwater zone in the vicinity of drinking water wells, and whether the additives meet the requirements of the Act. The Board needs to clarify this issue.

Finally, Subsection (f) requires an operator to maintain a copy of a cement job log for at least 5 years. How did the Board determine this was an appropriate timeframe?



**14. Section 78.88. - Mechanical integrity of operating wells. - Implementation procedures; Clarity.**

Subsection (a) requires operators to conduct quarterly inspections of a well. Several commentators dispute the amount of time between inspections. Some think inspections should occur weekly and others believe only annual inspections are necessary unless a problem is identified. How did the Board determine that quarterly inspections were appropriate?

Subsection (a) also requires inspection results to be retained for 5 years and available for review by the Department. The Board should explain how it determined 5 years was an appropriate timeframe.

Subsection (d)(2) requires the operator to notify the Department at least 7 days prior to initiating a corrective measure on a well. Will the Department approve that measure during this timeframe and must the operator obtain Department approval prior to initiating the corrective measure?

In Subsection (e), what does the Board consider to be a “similar manner approved by the Department?” This phrase is vague and should be clarified in the final-form regulation.

**15. Section 78.89. - Gas migration response. - Implementation procedures; Clarity.**

Subsection (a) sets forth the required response to a gas migration incident. The Allegheny Defense Project suggests that this response not be limited to just natural gas migration, but also to “byproducts of the drilling, hydro-fracturing, and production process such as methane; and to the substances created by the interaction of oil and gas development and the natural and human environment.” Has the Board considered the including responses to these incidents as well?

A commentator also suggests that in the last sentence of Subsection (a), the last phrase should read: “shall **immediately** take measures necessary to ensure public health and safety.” (Emphasis added.) We agree and recommend the term “immediately” be added to the final-form regulation.

In Subsection (e), the Board should explain why the 12-hour reporting requirement for a phone call to the Department and the 3-day timeframe for filing the follow-up report with the Department are appropriate timeframes.

**16. Section 78.93. - Wells in coal areas—surface or coal protective casing anchored with a packer or cement. - Clarity.**

Subsection (a)(1) refers to methods for separating casing and “other method approved by the Department.” This term is vague and we recommend that the final-form regulation include “other method approved **in writing** by the Department.” (Emphasis added.) The same phrase is used in Subsections 78.93 (a)(3), 78.94(a)(1), 78.94 (a)(3), and 78.95 (a)(1).

**17. Section 78.121. - Production reporting. - Reasonableness; Implementation procedures; Clarity.**

This section requires well operators to submit production reports. Are these reports confidential or are they available to the public? The final-form regulation should clarify this issue.

**18. Section 78.122. - Well record and completion report. - Statutory authority; Consistency with other statutes; Clarity.**

Subsection (b)(6) lists all of the information from a stimulation record that must be included in a well completion report, including a “list of hydraulic fracturing chemicals used.” While some commentators support the disclosure of chemicals, others, like Halliburton Energy Services, Inc., object that this listing would result in the release of confidential/proprietary information. Does the Board have a mechanism for determining what information, if any, is to be considered confidential or proprietary? Also, does the Board consider the information raised by commentators to be proprietary and would it be exempt from the PA Right-to-Know Law? See 65 Pa.C.S.A. §67.708(b)(11). If not, what is the Board’s statutory authority for its release?

A commentator also suggests that the completion report be sealed by an expert. Has the Board considered this option?



## Facsimile Cover Sheet



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**INDEPENDENT REGULATORY REVIEW COMMISSION**  
333 MARKET STREET, 14<sup>TH</sup> FLOOR, HARRISBURG, PA 17101

**To:** Debra L. Failor  
**Agency:** Environmental Quality Board  
**Phone:** 7-2814  
**Fax:** 705-4980  
**Date:** September 8, 2010  
**Pages:** 11

**Comments:** We are submitting the Independent Regulatory Review Commission's comments on the Environmental Quality Board's regulation #7-459 (IRRC #2857). Upon receipt, please sign below and return to me immediately at our fax number 783-2664. We have sent the original through interdepartmental mail. You should expect delivery in a few days. Thank you.

Accepted by:

Date:

9-8-10