



January 30, 2018

Pennsylvania Department of Environmental Protection
Office of Policy
Rachel Carson State Office Building
400 Market Street
Harrisburg, PA 17101

Re: Interim / Final Guidelines for Chain Pillar Development and Longwall Mining Adjacent to Unconventional Wells (800-0810-004)
Submitted via ecomment@pa.gov

To Whom It May Concern:

The Marcellus Shale Coalition (MSC) was formed in 2008 and is comprised of approximately 220 natural gas producing, midstream, transmission and supply chain members who are fully committed to working with local, county, state and federal government officials and regulators, to facilitate the development of the natural gas resources in the Marcellus, Utica and related geological formations. Our members represent many of the largest and most active companies in natural gas production, gathering, processing and transmission in the country, as well as the suppliers and contractors who service the industry.

The MSC appreciates the opportunity to comment on the proposed Interim / Final Guidelines for Chain Pillar Development and Longwall Mining Adjacent to Unconventional Wells Technical Guidance Document (TGD). The MSC recognizes the effort the Pennsylvania Department of Environmental Protection (PA DEP) made to work collaboratively with industry in developing a process for the responsible development of coexisting natural resources. The MSC offers the following comments on the TGD for consideration.

1. Footer Information (page i)

Because the 12/16/17 PA Bulletin Notice identified this document as New “Interim Final” Technical Guidance, the word “DRAFT” in the Footer on every page should be revised to read “INTERIM FINAL” as follows:

“800-0810-004 / ~~DRAFT~~ INTERIM FINAL December 16, 2017 / Page # “

2. “Effective Date” Section, (page i)

Because the 12/16/17 PA Bulletin Notice identified this document as New “Interim Final” Technical Guidance with an Effective Date of December 16, 2017, the “Effective Date” section on page i, should be revised to read “December 16, 2017” rather than “Upon Publication of notice as final in the *Pennsylvania Bulletin*” as follows:

“EFFECTIVE DATE: December 16, 2017 ~~Upon publication of notice as final in the *Pennsylvania Bulletin*”~~”

3. “Authority” Section, (page i)

The reference to “101-105” at the end of this section should be revised to read “78a.101-105” for consistency with how the references are cited in the rest of this section, and to avoid confusion that it may be inappropriately referring to 25 Pa. Code §§ 101-105. The revised section should read:

“The Oil and Gas Act of 2012 (58 Pa.C.S. § 3201 *et seq.*), the Clean Streams Law (35 P.S. § 691.1 *et seq.*), the Coal and Gas Resource Coordination Act (58 P.S. § 501 *et seq.*), and 25 Pa. Code §§ 78a.73, 78a.78, 78a.81, 78a.91-92, and 78a.101-105.”

4. “Authority” Section, (page i)

The “Authority” Section includes 25 Pa. Code 78a.78 as one of the relevant regulatory authorities, which then refers to the Coal Pillars TGD 550-2100-006, which subsequently refers to the “Gas Well Pillar Study of 1957.” Given those references, the MSC recommends the PA DEP develop a clearer explanation in this TGD (such as in the “Purpose” Section on page i, or Section I.A on page 1, or Section III.G on page 18) as to how this TGD relates to and interacts with TGD 550-2100-006.

5. Section I – Background

a. Section I.A. – Regulatory/Statutory Framework and Guidance Development Process (page 1)

In the 2nd paragraph, the 2nd sentence should be modified as shown below, to more clearly tie this discussion of the referenced Gas Well Pillar Study to the corresponding regulatory text at § 78a.78 and associated TGD 550-2100-006. That sentence should be revised as follows:

“The amendments mandated a comprehensive evaluation and update of the Joint Coal and Gas Committee Gas Well and Pillar Study (Gas Well Pillar Study) commissioned in 1956 by the Department of Mines and Mineral Industries and cited in 25 Pa. Code 78a.78 by reference to Technical Guidance Document 550-2100-006, where it is referred to as the Gas Well Pillar Study of 1957.”

b. 3rd paragraph, 3rd sentence (page 1)

The word “available” should be “applicable,” as follows:

“In addition to the committee work and this guidance, the provisions of Section 3224 of the Oil and Gas Act (58 Pa.C.S. § 3224) are directly applicable ~~available~~”



to any coal and oil and gas operators in scenarios where a pillar must be permitted in advance of coal mining.

6. Section II – Permitting Process

a. Introductory Paragraph (page 3)

The 2nd sentence of this paragraph reads “If such a well remained in production while the adjacent longwall panels were extracted, then it would be subject to all the subsidence and pillar deformation mechanisms described in Section I.” However, the same would be true even if the well did not remain in production while the adjacent longwall panels were extracted. It seems as though this sentence is attempting to highlight the increased potential risk if the well were to remain in production during the adjacent mining stage, so a revision to this sentence, as well as a clarifying revision in the last sentence of that paragraph, is recommended, as follows:

“This section addresses the permitting process in situations where an unconventional well or well cluster is in place and producing in an anticipated chain pillar location prior to the commencement of longwall mining. ~~If s~~ Such a well ~~remained in production while the adjacent longwall panels were extracted, then it would~~ will be subject to all the subsidence and pillar deformation mechanisms described in Section I, and would be at increased risk if they remained in production while the adjacent longwall panels were extracted. While chain pillars may be designed to carry the abutment loads, no practical chain pillar can be large enough to isolate a well from non-conventional subsidence. Therefore, for the foreseeable future, all unconventional wells located within chain pillars should be inactivated in accordance with these guidelines, while the adjacent longwall mining process is ongoing.”

b. Section II.A. – Before Longwall Gate Entry Development Mining is Within 500 Feet of Anticipated Pillar (page 5)

In the 1st paragraph of this section, the 2nd sentence should be revised to state clearly that the coal pillar application and accompanying plan are to be submitted to both DEP and the well operator. Also in the 2nd sentence the Form number shown for the “accompanying plan” as “8000-PM-OOGM0007” is incorrect; it should be “8000-PM-OOGM0007A.” The 3rd sentence in this paragraph should also be revised to clarify that the accompanying inactive status application (8000-FM-OOGM0056) is to be submitted by the “well operator” (not the coal mine operator). To incorporate the recommended revisions above, this paragraph should be revised to read:

“In accordance with Section 3224(a) of the Oil and Gas Act, an underground coal mine operator must notify the well operator and DEP prior to advancing longwall chain pillar development mining within 500 feet of any oil or gas wells. The coal

mine operator accomplishes this notification by submitting a coal pillar application (Form 8000-PM-OOGM0007) and submits the accompanying plan (Form 8000-PM-OOGM0007A) to DEP's Oil and Gas Program and to the well operator. Per this guidance, an accompanying conditional inactive status application (8000-FM-OOGM0056) should also be submitted by the well operator for unconventional wells that are to be inactivated within the chain pillar(s). 25 Pa. Code 78a.102(4)(iii) establishes that an inactive status application must be accompanied by "other information necessary for DEP to make a determination on inactive status." DEP's Bureau of Mine Safety (BMS) and the Mine Safety and Health Administration (MSHA) should also be provided with copies of all materials included in the application package."

[Note: see comment below questioning whether the Form numbers 8000-PM-OOGM0007 and 8000-PM-OOGM0007A are what's intended in this 1st paragraph, or whether they should be changed to 8000-PM-OOGM0112 and 8000-PM-OOGM0112A, consistent with subparagraph (1) of Section II.A]

c. Section II.A. – Before Longwall Gate Entry Development Mining is Within 500 Feet of Anticipated Pillar (page 5)

The coal pillar application Form 8000-PM-OOGM0007 and accompanying plan Form 8000-PM-OOGM0007A specified in the 1st paragraph are no longer consistent with the Form numbers shown in the "Conditional Pillar Application" portion of this section, where subparagraph (1) says to use Form numbers 8000-PM-OOGM0112 and 8000-PM-OOGM0112A. It appears that those two forms ending in "0112" may be updated versions intended for use with this TGD, and if that's the case, then the Form numbers referenced in the 1st paragraph should be revised accordingly.

d. Section II.A Conditional Pillar Application (page 5)

In subparagraph (1) under "Conditional Pillar Application," for consistency with the Titles of the Forms, the wording in the parentheses following each Form number should be revised as follows:

"(1) Completed copies of 8000-PM-OOGM0112 (Coal Chain Pillar Application) and 8000-PM-OOGM0112A (Well Chain Pillar Plan)."

e. Section II.A Conditional Pillar Application (page 5)

The following should be added to the end of subparagraph (2) which states, "Copy of cooperation letter between coal operator and unconventional well operator documenting measures taken consistent with provisions of this technical guidance document."



“Communication process between coal and gas operators; to include 6 month notice prior to development mining reaching 500’ from well, 6 month notice prior to longwall reaching 1,500’ from wells, and daily updates while mining 1,500’ from well until 2,500’ past well on each panel.”

f. Section II.A “Activities in Advance of Longwall Mining” Section (page 8)

Subparagraph (2)a. refers to “using a mechanical plug and cement as indicated in f. below,” but the mechanical plug and cement information is in e., not in f., so that sentence in a. should be corrected as follows:

“Measures for safely entering the well and isolating the production zone using a mechanical plug and cement as indicated in e. f., below;”

g. Section II.A “Activities in Advance of Longwall Mining” Section (page 9)

The last sentence of subparagraph (2)f. states that for multi-well pads, the logging should include “at least one well plus 10% of all other wells on the pad.” That only makes sense arithmetically if there are more than 10 wells on a pad, which often will not be the case. For example, if there are only 2 wells on the pad, it’s not clear if only logging one well satisfies this guideline, or if the wording “at least one well plus 10% of all other wells” would require both wells to be logged, which should not be required. This sentence should be revised to either clarify that the “plus 10%” provision only applies if there are more than 10 wells on the pad, or the “plus a percentage” concept should be replaced with a recommendation based on how many wells are present, such as logging at least 1 well if there are 1 to 7 wells on the pad; logging at least 2 wells in there are 8 to 15 wells on the pad, etc.

h. Section II.A “Activities in Advance of Longwall Mining” Section (page 9)

Subparagraph (8) states, “Graphical summary of production histories (including surface-measure wellhead pressures in psi and flow rates in thousand cubic feet per day (Mcfpd)).” The MSC requests that the language be revised to reflect monthly averages of well productions and pressures:

~~“Graphical summary of production histories~~ Monthly averages of well production and pressures (including surface-measure wellhead pressures in psi and flow rates in thousand cubic feet per day (Mcfpd)).”

i. Section II.A “Activities After Longwall Mining” Section (page 11)

The last sentence of subparagraph (1)b. on page 11 refers to subparagraph “(2)f. on page 8,” but (2)f. now appears on page 9, so that page number reference should be corrected as follows:



“Tools run should repeat or be comparable to those described under (2)f. on page 9 8;”

j. Section II.A “Activities After Longwall Mining” Section (page 11)

The re-entry procedure and long-term monitoring described in subparagraph (2) should be amended to read:

Well long-term monitoring procedure defining monitoring activities for the ~~life of~~ duration of the active mine permit and inclusive of the following, minimum components:

k. Section II.A “Activities After Longwall Mining” Section (pages 12)

Paragraph (2) lists “minimum components” of the long-term monitoring activities for the wells, and subparagraphs (2)b., c., and d. on page 12 imply that “real-time continuous electronic monitoring” and “real-time continuous electronic well-integrity monitoring” will be required, without providing any definition or details about what that continuous monitoring terminology is intended to mean.

Similarly, the last paragraph of Section III.E. on page 18 says that this Section II “guidance” on “continuous, long-term monitoring” is to be conducted in all cases. Section III.E. cites 25 Pa. Code 78a.73(a)-(b) and 78a.81(a) as the basis for this monitoring, but neither of those regulatory sections requires “real-time continuous electronic monitoring.” Rather, § 78a.88 requires quarterly mechanical integrity inspections. Lacking any specific regulatory citation or requirement for “real-time continuous electronic monitoring,” subparagraphs (2)b., c., and d. on page 12, should be revised as follows:

(2)b. “a description of how the well will be monitored for integrity for the life of the active mine. Some amount of equipped for real-time, continuous electronic monitoring is recommended, but not required;”

(2)c. “response thresholds and actions associated with the real-time, continuous, electronic well-integrity monitoring;”

(2)d. “unconventional well operator personnel/positions and contact information for individuals responsible for the real-time, continuous, electronic well-integrity monitoring; and”

l. Section II.B Post-Longwall Gate Entry Development (page 12)

The MSC recommends removing the section on Casing Integrity Testing/Implementation of Conditional Inactive Status for the first longwall face within 1500’ of the gas well. We do not feel this should be necessary. Once baseline testing is established pre-mining, the well will be temporarily P&A’d. At

this point, we would wait until all mining is finished to evaluate the wells integrity. Request removal of the casing integrity logging section altogether.

m. Section II.B. – Post-Longwall Gate Entry Development (page 13)

The last paragraph states that after temporary inactivation of the well and prior to advancement of the headgate to within 1,500 ft. of the pillar, the well operator should “electronically submit daily activity reports confirming the operation.” It’s unclear exactly what aspect of “the operation” or “daily activities” are to be reported, given that the temporary inactivation of the well has been completed at this point, nor is it clear that this information is necessary on a daily basis or that DEP clerical staff resources will actually be available to update the information on a daily basis. Unless these daily reports can be appropriately justified as necessary, and more clearly defined, the last paragraph on Section II.B. should be revised as follows:

“Upon successful completion of temporary inactivation and prior to advancement of the first longwall (headgate) face to within 1,500 feet of the anticipated pillar location, the unconventional well operator should electronically submit ~~daily activity~~ a reports-confirming that the temporary inactivation operation has been completed to the inspector so that clerical personnel may update the status of the well appropriately in DEP’s database. In cases where the pillar is located closer than 1,500 feet from the longwall setup entry, the unconventional well operator should submit the information as soon as it can be reasonably compiled.”

n. Section II.D. – Second Longwall (Tailgate) Face 1,500 Feet Beyond Unconventional Well (page 14)

The last paragraph on this section refers to submitting “electronic copies of daily activity reports confirming the operation” along with the application to return the well to active status (8000-FM-OOGM0123). It isn’t clear what “daily activity reports” this is referring to, nor why daily activity reports would be needed in conjunction with the return to active status application. This paragraph should be revised as follows:

“If the well was successfully re-entered and cleaned out, as specified in the re-entry procedure; and the casing pressure tests executed during the re-entry procedure meet the requirements of 25 Pa Code 78a.84(f) (no more than 10% leak-off over a 30-minute test interval), the unconventional well operator should submit the application to return the well to active status (8000-FM-OOGM0123) along with electronic copies of ~~daily activity~~ reports confirming the operation to the DEP Oil and Gas Inspector so that the status of the well can appropriately be updated in DEP’s database. The unconventional well operator should also implement the long-term monitoring plan described in Subsection A of this Section.”

7. III - Contingencies and Alternatives

a. Section III.A. – Minimum Stability Factor (page 15)

A word appears to be missing in the first sentence of this section, which should be revised as follows:

“In instances where a stability factor of 2.0, as described in Section I of this guidance, cannot be met even by remedial backfilling or other approved measures;”

b. Section III.B. – Longwall Gate Entry Development Setbacks (page 15)

In the 1st paragraph of this section discussing the goal of preventing mine development from inadvertently intersecting with a well, the 3rd sentence says that “though the likelihood of this taking place is extremely low, the consequences would be very high because the well is expected to be in full production during this phase.” The statement that “the well is expected to be in full production during this phase” appears to be inconsistent with the guidance earlier in this TGD that would seem to require the well to be inactivated during the adjacent mining phase, in which case the 3rd sentence of this section should be revised as shown below. In the 4th sentence, the word “would” should be revised to “could,” as follows:

“Though the likelihood of this taking place is extremely low, the consequences of intersecting an unconventional well would potentially be very high ~~because the well is expected to be in full production during this phase.~~ An inadvertent well intersection could ~~would~~ be the cumulative result of three kinds of errors:”

a. Section III.B. – Longwall Gate Entry Development Setbacks (page 16)

In the last paragraph on this section, in the 2nd sentence, the wording “as well as minimize the likelihood that mine development will not intercept the well” should be revised to read “as well as minimize the likelihood that mine development will intercept the well” by removing the word “not,” as follows:

“It is suggested that 50 feet from the surface location, or 40 feet from the known seam level location of the well, should be adequate to place the well in the relatively stable central core of the pillar, as well as minimize the likelihood that mine development will ~~not~~ intercept the well.”

b. Section III.E. - Mine Monitoring in Active Longwall Districts (page 18)

Consistent with comments above for Section II.A. “Activities After Longwall Mining” paragraphs (2)b. c. and d., the last paragraph of Section III.E should be revised as follows:



“Section II of this guidance specifies that ~~continuous~~, long-term monitoring of the well be conducted in all cases by the well operator. 25 Pa. Code 78a.73(a)-(b) and 78a.81(a) establishes the basis for this monitoring. For any electronic monitoring that may be performed, protocols should be established whereby warnings are automatically transmitted to the coal operator. A verification protocol should be implemented to confirm that the warnings will be, in fact, transmitted. However, gas pressure and flow vary during normal production, and a hazardous leak may be insignificant compared to the well’s production. In addition, monitoring may be inconclusive during shut-in periods. For these reasons, well monitoring cannot substitute entirely for in-mine monitoring.

8. Section IV. – Systematic Data Collection and Future Development (page 19)

In the list of data elements to be included in the Form 8000-FM-OOGM0159U Assessment, Item (21) contains an incorrect reference to Item (19), which should refer instead to (20), as follows:

“(21) Successful Remediation (Y/N – if Y to (20 19))”

On behalf of the Marcellus Shale Coalition, we appreciate the opportunity to submit these comments for your consideration. Please do not hesitate to contact us should you require additional information or clarification.

Sincerely,



Jim Welty
Vice President, Government Affairs