

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Office of Oil and Gas Management

- DOCUMENT NUMBER:** 800-0810-003
- TITLE:** Guidelines for Development of Operator Pressure Barrier Policy for Unconventional Wells
- EFFECTIVE DATE:** Upon publication of notice as final in the *Pennsylvania Bulletin*
- AUTHORITY:** The 2012 Oil and Gas Act (58 Pa.C.S. §§ 3201–3274)
The Clean Streams Law (35 P.S. § 691.1 *et seq.*)
Solid Waste Management Act (35 P.S. § 6018.101 *et seq.*)
Oil and Gas Conservation Law (58 P.S. § 401 *et seq.*)
25 Pa. Code §§ 78a.54-78a.58 and 78a.60-78a.61, 78a.71, 78a.72, 78a.74, 78a.76, 78a.84, 78a.87, 79.12
- POLICY:** Unconventional operators should follow these guidelines to develop a Pressure Barrier Policy (PBP) prior to the commencement of well drilling. The PBP should consider when pressure barriers are needed to control fluids in a manner that will reasonably ensure well control and protection of public health, public safety and the environment.
- PURPOSE:** The purpose of these guidelines is to assist unconventional operators developing the PBP component of a Preparedness, Prevention and Contingency (PPC) plan. Recommendations relevant to maintaining compliance with the requirements of Chapter 78a, including associated American Petroleum Institute (API) Recommended Practices incorporated therein, and any additional requirements set forth in The Clean Streams Law, Solid Waste Management Act, the 2012 Oil and Gas Act and other applicable laws and regulations are summarized. These guidelines have been developed to facilitate appropriate well control incident risk mitigation.
- APPLICABILITY:** This guidance document applies to unconventional operators drilling wells in the Commonwealth of Pennsylvania.
- DISCLAIMER:** The policies and procedures outlined in this guidance are intended to supplement existing requirements. Nothing in the policies or procedures shall affect regulatory requirements.
- The policies and procedures herein are not an adjudication or a regulation. DEP does not intend to give this guidance that weight or deference. This document establishes the framework, within which DEP will exercise its administrative discretion in the future. DEP reserves the discretion to deviate from this policy statement if circumstances warrant.
- PAGE LENGTH:** 18 pages

I. BACKGROUND

Section 78a.55 (relating to control and disposal planning; emergency response for unconventional wells) outlines the requirements for the development and maintenance of Preparedness, Prevention and Contingency (PPC) plans for unconventional well sites. *See* 25 Pa. Code § 78a.55. DEP developed this guidance and accompanying worksheet procedure, set forth below, to address certain requirements of this section relating to the maintenance of well control. Specifically, Section 78a.55(d) requires unconventional well operators to develop a Pressure Barrier Policy (PBP). *See* 25 Pa. Code § 78a.55(d). DEP interprets this provision as requiring unconventional operators to consider and identify when pressure barriers may be needed during oil and gas operations; including, but not limited to, drilling (casing and cementing), hydraulic fracturing, completion, alteration, plugging, workover activities and maintenance and/or repair of associated equipment. Further, and in accordance with 25 Pa. Code § 78a.72(i), at least two *mechanical pressure barriers* are required between the open formation and the atmosphere that are capable of being tested during well drilling and completion operations. Related requirements can be found in Sections 78a.71 (relating to use of safety devices – well casing), 78a.72 (relating to use of safety devices – blow-out prevention equipment) and associated API Recommended Practices incorporated by reference, 78a.74 (relating to venting of gas), 78a.84 (relating to casing standards), 78a.76. (relating to drilling within a gas storage reservoir area), 78a.87 (relating to gas storage reservoir protective casing and cementing procedures) and 79.12 (relating to waste prevention).

An operator may find that a PBP prepared for one well is applicable to another well. Subsurface conditions, as evaluated by the operator, dictate whether or not that is the case. When applicable, the operator may use one PBP for more than one well, but should clearly identify the wells at which the PBP applies and also provide justification for the applicability of the plan to multiple locations. The PBP may also exist under a separate cover and be referenced in the PPC plan, but should be available at the well site during all identified operations where pressure barriers are used at the well site.

Finally, the guidelines that follow should be considered by the operator when developing a PBP, but requirements need not be addressed in the specific format presented in the worksheet procedure. Further, in some cases DEP has recommended that other information be assembled in the PBP for clarifying purposes, but it is not required that such information be included if no specific regulatory or statutory provision exists, or if the regulatory or statutory provision that is referenced is not directly applicable to the corresponding unconventional well or well operation.

II. DEFINITIONS

This section of the document provides DEP's interpretations of terms used in the 2012 Oil and Gas Act, Chapter 78a and this guidance. The terms defined in this section are italicized throughout the document.

Fluids – Natural gas, including coal bed methane; condensate; oil; brine; or other liquids associated with geologic formations.

Kick – A flow of formation *fluids* into the well bore during drilling operations (adapted from Schlumberger Oilfield Glossary).

Mechanical pressure barriers – A subset of physical barriers that feature mechanical equipment which are capable of being tested; this does not include cement or a hydrostatic fluid column, which would also be considered pressure barriers. Examples of mechanical barriers include well heads, ram-type blow-out preventers (BOPs) and annular-type BOPs (adapted from API RP 65-2, 3.1.34, 2016).

Pressure barrier policy – A plan developed by an unconventional operator prior to the commencement of well drilling identifying the combination of *well barrier elements* that together constitute a method of containment of *fluids* within a well that prevents uncontrolled flow of *fluids*, i.e., gas, oil, and brine, into another formation, or to escape at surface to be used during identified operations (adapted from International Well Control Forum (IWCF) Well Control and Barrier Definitions).

Well barrier element or *barrier element* – Barrier component of a well designed to prevent *fluids* from flowing unintentionally from a formation, into another formation or to escape at surface (adapted from IWCF Well Control and Barrier Definitions).

Well control emergency – An incident during drilling, operation, work-over or completion that, as determined by DEP, poses a threat to public health, welfare or safety, including a loss of circulation *fluids*, *kick*, casing failure, blowout, fire and explosion. 58 Pa.C.S. § 3203.

Well control incident/loss of well control – A scenario where the treatment pressure, producing pressure, and/or annular pressure of the well being treated deviates from anticipated pressures in a manner that indicates mechanical integrity has been compromised and continued operations pose a risk to personnel safety, equipment integrity, or the environment (adapted from API RP 100-1, 9.4.5, 2015).

III. OPERATIONS ADDRESSED IN PRESSURE BARRIER POLICY

This guidance identifies the following operations to be addressed in a PBP:

- (1) When drilling a well that is intended to produce natural gas from an unconventional formation.
- (2) When drilling out solid core hydraulic fracturing plugs to complete a well.
- (3) When well head pressures or natural open flows are anticipated at the well site that may result in a *loss of well control*.
- (4) Other identified operations requiring a pressure barrier, as determined by the operator.

The operator should reference all information contained in this document to develop the required PBP for identified operations. The operator should also consider how to address situations when primary pressure barriers or other *barrier elements* in a well, e.g., casing or cement fail unexpectedly.

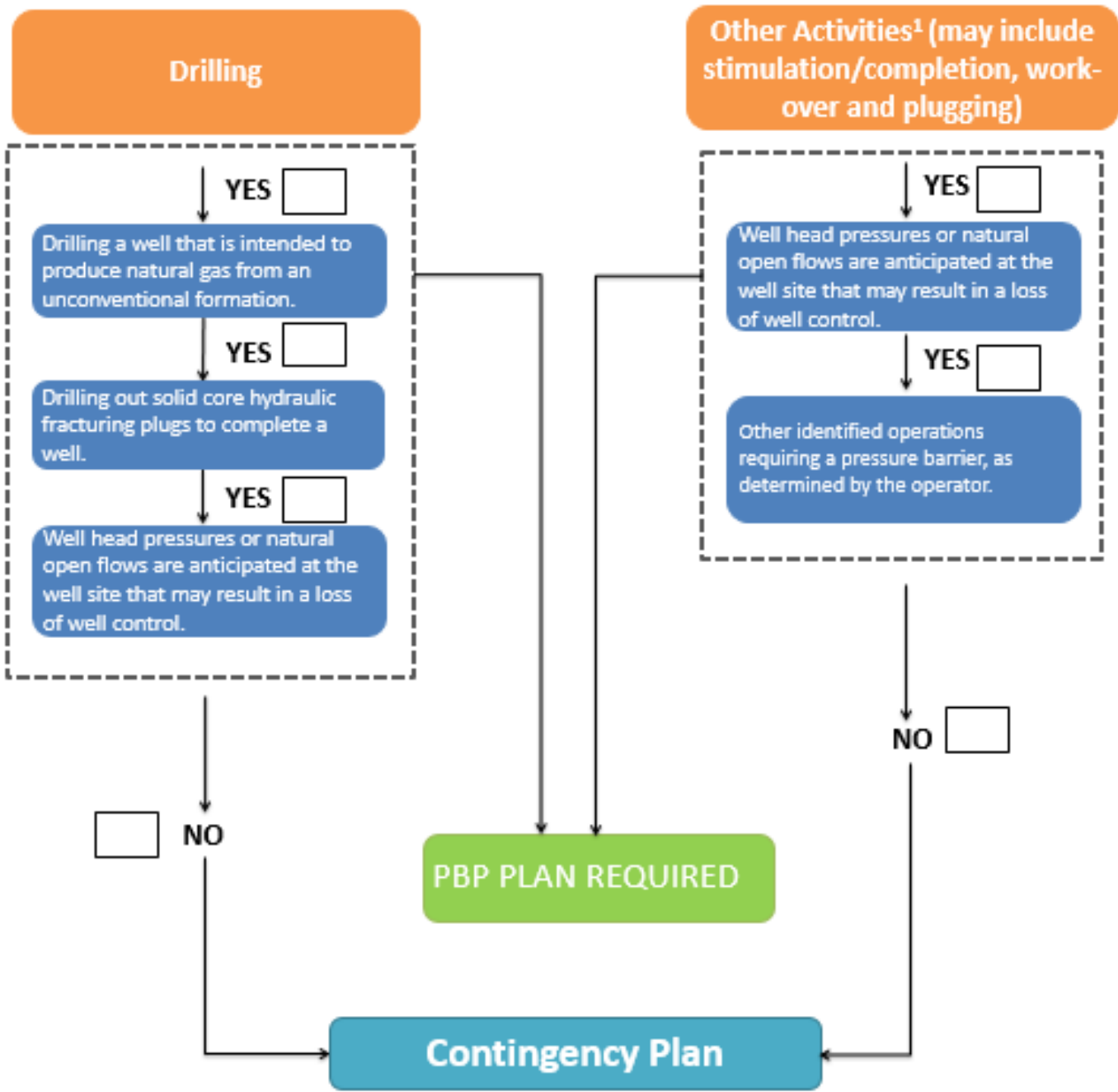
Note that since several stages are involved in well development activities, there may be instances when the operator determines a pressure barrier is not necessary, e.g., installing conductor pipe or drilling the surface-hole section of an unconventional well and installing surface casing. For stages not included in the PBP, DEP recommends the operator develop a contingency plan. For

example, an operator drilling shallower hole sections of an unconventional well that penetrate gob or other zones capable of flow may specify what measures are in place to effectively mitigate an unanticipated *well control emergency* or *well control incident/loss of well control* through use of a contingency plan in lieu of the use of *mechanical pressure barriers* during the operation. Please also note that when an operator determines its PBP does not need to cover certain operations tied to production activities or wells on inactive status, DEP recommends that a contingency plan be available to address any potential casing and/or equipment failures that could result in a *well control emergency* or *well control incident/loss of well control*. Finally, while an operator should address all worksheet items in the applicable sections of this document associated with relevant, specific regulatory citations in its PBP; DEP may determine, on a case-by-case basis, that other items are necessary during operations to safely drill, complete, alter, or plug a well.

IV. PROCESS CHART FOR IDENTIFYING OPERATIONS

The following process chart is meant only to serve as guidance to aid in determining what operations require a PBP. If an operator responds affirmatively to any of the items, the PBP should contain information about the pressure barriers that will be used at the well during the identified *operation*.

Figure 1. Process Chart for Identifying Operations



Footnotes:
¹Other activities or operations, as identified by the operator in PBP.

V. WORKSHEET PROCEDURE

The following worksheet serves only as one model for assembling a PBP and does not take the place of a complete PPC plan under a separate title and heading which is prepared for and kept at the well site during well site activities. DEP recommends that operators complete the worksheet(s) or develop a suitable alternative. Operators may maintain this information under a separate cover and make them available to DEP at the well site in order to provide clarity for DEP Oil and Gas Inspectors assessing PBP for compliance with all applicable rules, regulations, and laws. If the model below is used, a separate worksheet is recommended for each *operation* requiring a pressure barrier, provided the mechanism for maintaining well control is different for the operation. The operator should also consider the use of separate worksheets on a hole-section basis, as equipment ratings and functionality may change with respect to the depth interval of the well.

VI. WORKSHEET QUESTIONS

I. Applicability (see Figure 1):

I.1. Is a BOP required under §§ 78a.72 or 78a.87(a)(1)-(2), or has the operator identified other operations requiring a pressure barrier? See § 78a.55(d).

I.1.a. If no, please proceed to Section IV - Contingency Plan.

I.1.b. If yes, please proceed to Section II - Equipment.

II. Equipment (for any applicable worksheet item specifically referenced in Chapter 78a as a requirement, “Yes” should be checked or an explanation provided in the PBP):

II.1. Are there at least two *mechanical pressure barriers* in place during well drilling and completion operations, as required under § 78a.72(i)?

II.1a. If yes, please **briefly** describe.

II.2. Are there *well barrier elements*, including one or more casing strings of sufficient cemented length and strength to address unexpected events such as blowouts, explosions, fires, and casing failures during installation, completion and operation per § 78a.71?

II.2a. **Briefly** describe procedures in place to address an event where a casing string may malfunction or become defective.

II.3. Will any fluid barriers be used during this *operation*?

II.3a. If yes, please provide a **brief** description (including type, i.e., oil-based mud (OBM), synthetic-based mud (SBM) or water-based mud (WBM),

and anticipated pounds per gallon (ppg) weight) of the *fluids* and how they will be used.

- II.4. Identify all operations during which a BOP must be used under §§ 78a.72 or 78a.87(a)(2).
- II.5. Please provide a **brief** description of the BOP and ancillary equipment, casing and well head configurations that will be available and may be utilized during drilling and stimulation/completion, per § 78a.71(a) and 78a.72(i); and workover and plugging of the well, if specified by the operator per § 78a.55(d). Please include BOP inspection sheets as part of the description or have them available on site.
- II.6. What is the maximum anticipated pressure (MAP) in pounds per square inch (psi) for the relevant operations that the BOP and ancillary equipment, casing and well head could be subjected to? If the casing must be pressure tested in accordance with § 78a.84(d) or (f), this information is required.
- II.7. Please provide a **brief** description of how the MAP was determined. For example, estimates using available pressure gradient maps represent one acceptable procedure.
- II.8. What is the pressure rating (PR) (psi) of the BOP?
- II.9. For a BOP with a PR greater than 3,000 psi, are controls accessible for actuation and additional controls present, not associated with the hydraulic system of the rig, at a minimum distance of 50 feet, per § 78a.72(c)?
- II.10. Has/Will a comprehensive test of the ram-type BOP and related equipment been/be completed for both pressure and ram operation prior to placing it into service, per § 78a.72(e) or in a manner consistent with API Recommended Practice 53?
- II.11. Is there a procedure in place to have the annular type BOP tested per the manufacturer's published instructions, or the instructions of a professional engineer, prior to the device being placed in service, per § 78a.72(e) or in a manner consistent with API Recommended Practice 53?
- II.12. Has/Will a shoe test been/be performed? Note: A shoe test may include a Formation Integrity Test (FIT) or Leak Off Test (LOT). If gas will be produced inside of the intermediate casing, a shoe test is required, per § 78a.83c(b).
 - II.12a. If yes, what was the FIT/LOT test pressure (psi)?
 - II.12b. If no, how has the competency of the casing seat been determined, per § 78a.72(a)?
- II.13. Based on the competency of the casing seat and MAP, is a hard shut-in permissible?

- II.14. Do the casing, pipe fittings, valves and unions placed on or connected to the BOP system have working pressure ratings in excess of the MAP, per § 78a.72(d)?
- II.15. Is there a procedure in place to visually inspect the equipment during drilling operations, per § 78a.72(f)? (Note: Please see Appendix A for citation clarification.)
- II.16. Have all ram testing procedures in place been developed in accordance with API RP 53 or procedure approved by DEP, per § 78a.72(f)?
- II.17. Have/Will the pipe rams been/be tested daily for closure during drilling operations, per § 78a.72(f), or has a different procedure consistent with API Recommended Practice 53 been approved by DEP (See Appendix A)?
- II.18. Have/Will the blind rams been/be tested for closure on each round trip or at least once per day on days with more than one round trip, during drilling operations, per § 78a.72(f), or has a different procedure consistent with API Recommended Practice 53 been approved by DEP?
- II.19. Have/Will all inspection and closure test results been/be recorded in the driller's log before the end of the tour, per § 78a.72(f), or has a different procedure been approved by DEP?
- II.20. Are all lines, valves, and fittings between the closing unit and the BOP stack flame resistant and characterized by working pressures that meet or exceed those of the BOP system, per § 78a.72(g)?
- II.21. Does/Will the minimum cemented intermediate casing meet the requirements set forth in § 78a.72(k), or has an alternative method been approved?
- II.22. Have/Will all welded or used casing strings used to anchor BOPs, or any new casing used to anchor BOPs with pressure ratings greater than 3,000 psi been/be pressure tested after cementing, per § 78a.84(d) or (f)?
- II.22a. Is the pressure test procedure compliant with § 78a.84(d) or (f), i.e., no more than 10% decrease in pressure over a 30-minute period, or has an alternative test method been approved by DEP?
- II.23. Has/Will the certification of the pressure test been/be confirmed by entry and signature of the person performing the test on the driller's log, per § 78a.84(f)?
- II.24. Please provide a **brief** description and schematic of the well head assembly that clearly indicates which string of casing the "A" section of the well head will be attached to during the referenced *operation*. Note that schematics are readily available from well head manufacturers.

II.25. Are there other completed wells on the pad adjacent to the well that is the subject of the PBP?

II.25a. If yes, please **briefly** describe how they have been/will be secured and/or monitored during the current *operation*. At a minimum, the relevant regulatory requirements of § 78a.52a and § 78a.73(c) must be satisfied when the *operation* is hydraulic fracturing.

III. Training/Certification (for any applicable worksheet item specifically referenced in Chapter 78a as a requirement, “Yes” should be checked or an explanation provided in the PBP):

III.1. Is there/Will there be an International Association of Drilling Contractors (IADC) or other individual certified by a DEP-approved organization present on site during operations requiring a BOP, per § 78a.72(h)?

III.1a. If so, is the certification available for review on site, per § 78a.72(h)?

IV. Contingency Plan:

IV.1. If excess gas is encountered during operations not requiring a pressure barrier, can it be flared, captured or diverted in a manner that does not create a hazard to the public health or safety, per § 78a.74?

IV.1a. If yes, document that § 78a.74 will be met by providing a description of the size, construction and length of the equipment used to manage any excess gas encountered. If a flare line will be used, include a **brief** description of the method used to anchor it and any igniters that will be used; and indicate if redundant igniters are present.

IV.2. If BOP equipment will not be utilized during drilling, completion, workover or plugging of the well per the applicable requirements of § 78a.72, please **briefly** explain why or describe what type of *well barrier elements* are in place, and provide the details of a contingency plan for managing unanticipated *kicks* or a *loss of well control*.

IV.3. Is there an IADC or equivalent methodology in place to kill the well or control a *kick*, if required?

IV.3a. If yes, please **briefly** explain the methodology to be employed.

IV.4. Is the operator drilling within a gas storage reservoir per § 78a.87?

IV.4a. If yes, has the drilling as well as the casing and cementing plan been approved by the DEP and provided to the storage operator in accordance with § 78a.76(a)?

IV.4b. If yes, **briefly** summarize the procedure for controlling anticipated gas storage reservoir pressures and flows at all times when drilling from

200 feet above a gas storage reservoir horizon to the depth at which the gas storage protective casing will be installed, per § 78a.87(a)(1)-(2).

VII. SPECIAL CONSIDERATIONS FOR SENSITIVE OFFSET ENVIRONMENTS DURING DRILLING AND COMPLETIONS ACTIVITIES

Well Design

Casing plans and well design should be developed and completed in consideration of proximity to mine workings, underground gas storage facilities, and the protection of other sensitive offset environments. More specifically, an assessment of underground mining operations, including sealed/unsealed status, should be conducted for any mine within a technically justified, pre-determined distance prior to completions activity. Any requirements or guidance developed by DEP's Bureau of Mine Safety relating to drilling plans should also be considered in the operator's *pressure barrier policy*. To ensure safety regarding material selection, the operator must utilize equipment and safety devices in compliance with § 78a.71 and § 78a.72 in order to equip the well in a manner which will withstand the more severe environmental conditions expected in association with unconventional development, including higher formation pressures and the presence of larger quantities of free hydrogen.

Pre-Frac and Post-Frac Well Operations

Prior to hydraulic fracturing operations, a shallow geology review assessing fracture propagation directions and formations should be undertaken to understand zones susceptible to flow and confining zones. All pertinent data, including all known operator wells and essential emergency contacts, should be captured in a mapping/data system that allows for quick retrieval in the event of an emergency situation associated with well control. Such information should include:

- (1) Location of drill site.
- (2) Location of active underground mines (sealed and unsealed workings).
- (3) Safety/emergency point-of-contact for mine operator.
- (4) Safety/emergency point-of-contact for offset oil and gas operators and underground gas storage facilities.
- (5) Safety/emergency point-of-contact for unconventional operator completing hydraulic fracturing.
- (6) Safety/emergency point-of-contact for other offset sensitive environments.
- (7) Contact information for well control contractor. Note that during the response to a *well control incident* or *well control emergency*, the operator may need to relinquish full control of the unconventional asset to the well control contractor and that the well control contractor may find it necessary to implement actions in accordance with national standards and best management practices.

A contact protocol and emergency contact numbers should be established and maintained at all times by the operator conducting hydraulic fracturing. The protocol should include contacts with applicable regulatory agencies, mine operators, offset oil and gas and underground gas storage operators, and those responsible for other sensitive environments during all phases of completions activity when operations are proximal (see predetermined distance in Well Design subsection).

The operator should provide pre-frac notifications to the mine operator, offset oil and gas and underground gas storage operators, and the point-of-contact for other offset sensitive environments in an agreed-upon timeframe when completions activity will be taking place proximal (see predetermined distance in Well Design subsection) to an active underground mine, other oil and gas or gas storage operations, or other sensitive environments.

During completions activity, an unconventional operator should provide a daily progress update to the mine operator, other oil and gas or gas storage operators, or the point-of-contact for other offset sensitive environments when proximal (see predetermined distance in Well Design section).

During the production stage of the well, the production annulus should have passive production relief valves so that in the event of a failure, the relief valves would discharge into existing well site facilities and/or pipelines. Pressure thresholds should be known and sufficient to manage any flows that may occur.

Well Control During Stimulation

The production annulus of unconventional wells should not be cemented through mining horizons. As a precautionary measure to manage the potential loss of control at a well where gas could travel up the annulus to the surface during stimulation, the operator should install equipment prior to the completion operation for safely directing and managing any fluid flows. Examples include choke manifolds, flare stacks and tanks.

An operator should utilize plugs at a distance sufficient to ensure safety and well control of every stage during completions activity that are proximal to sensitive environments (see predetermined distance in Well Design section).

In the event of a *well control incident/loss of well control* or a *well control emergency* during completions activity, simultaneous evacuation plans should be implemented for non-essential well site personnel and for miners at an underground mine when operations are proximal (see predetermined distance in Well Design section). The operator conducting hydraulic fracturing should immediately notify, maintain regular contact, and provide timely updates to proximal mine operators and regulatory agencies until the incident is resolved.

Until such time that a well control incident/loss of well control, or a well control emergency, is resolved, the well should not be shut in or otherwise be operated in a manner that causes a loss of fluid into the surrounding strata, until a risk assessment is complete addressing the potential inundation to the atmosphere of proximal underground mines.

VIII. INCIDENT REPORTING

An operator should report all *well control incidents/losses of well control* and *well control emergencies* within 2 hours of discovery and comply with § 78a.66 for reportable releases. In addition, potential related issues, such as lost circulation (25 Pa. Code § 78a.83b), defective casing and cementing (25 Pa. Code § 78a.86) and gas migration response (25 Pa. Code § 78a.89) must be reported and/or managed per the respective regulatory requirements. For operations not covered with specificity in Section VII. the operator should also develop a list of responsible personnel for well operators, underground gas storage facility operators, and coal operators within 2,500 feet, and notify these personnel as soon as practicable if an incident occurs. Finally, contact information for well control contractors should also be established to facilitate timely incident response and mitigation.

An operator should consider modifying an existing PBP and developing appropriate training if a *well control emergency* or *well control incident/loss of well control* is narrowly avoided, as determined by the operator.

The Oil and Gas Inspector and Supervisor are the appropriate contacts in the Oil and Gas Program. After normal business hours, the operator should reference Appendix B to determine the appropriate DEP Emergency Response point of contact. Nothing in this guidance should be interpreted to prevent the operator from coordinating with local emergency responders, as needed, or abiding by all other relevant DEP rules, regulations, statutes, and policies.

VIII. WORKSHEET

Section	Question	Response (Circle Appropriate Response or Provide Requested Information)	Additional Notes or Information: Provide, As Needed:	Regulatory Citation	Page in Operator Pressure Barrier Policy	Have Requirements Been Addressed in Operator's Pressure Barrier Policy (Y/N)
I.	1.	Y or N		§ 78a.72, § 78a.87(a)(2), or § 78a.55(d)		
II.	1.	Y or N or NA		§ 78a.72(i)		
II.	1a.	Narrative or NA				
II.	2.	Y or N		§ 78a.71		
II.	2a.	Narrative				
II.	3	Y or N or NA				
II.	3a.	Narrative				
II.	4.	BOP to be used during: Circle One: Drilling; Stimulation; Workover; Plugging	May include Hole Section:	§ 78a.72 and § 78a.87(a)(2)		
II.	5.	Narrative or NA		§ 78a.55(d), § 78a.71(a) and § 78a.72(i)		
II.	6.	MAP: _____ or NA		§ 78a.84(d) or (f)		
II.	7.	Narrative or NA				
II.	8.	PR: _____ or NA				

Section	Question	Response (Circle Appropriate Response or Provide Requested Information)	Additional Notes or Information: Provide, As Needed:	Regulatory Citation	Page in Operator Pressure Barrier Policy	Have Requirements Been Addressed in Operator's Pressure Barrier Policy (Y/N)
II.	9.	Y or N or NA		§ 78a.72(c)		
II.	10.	Y or N or Alternate or NA		§ 78a.72(e)		
II.	11.	Y or N or Alternate or NA		§ 78a.72(e)		
II.	12.	Y or N or NA		§ 78a.83c.(b)		
II.	12a.	LOT/FIT: _____ or NA				
II.	12b.	Narrative or NA		§ 78a.72(a)		
II.	13.	Y or N or NA				
II.	14.	Y or N or NA		§ 78a.72(d)		
II.	15.	Y or N or NA		§ 78a.72(f)		
II.	16.	Y or N or NA		§ 78a.72(f)		
II.	17.	Y or N or Alternate or NA		§ 78a.72(f)		
II.	18.	Y or N or Alternate or NA		§ 78a.72(f)		
II.	19.	Y or N or NA		§ 78a.72(f)		
II.	20.	Y or N or NA		§ 78a.72(g)		
II.	21.	Y or N or NA		§ 78a.72(k)		
II.	22.	Y or N or NA		§ 78a.84(d) or (f)		
II.	22a.	Y or N or Alternate or NA		§ 78a.84(d) or (f)		
II.	23.	Y or N or NA		§ 78a.84(f)		
II.	24.	Narrative or NA				
II.	25.	Y or N or NA				

Section	Question	Response (Circle Appropriate Response or Provide Requested Information)	Additional Notes or Information: Provide, As Needed:	Regulatory Citation	Page in Operator Pressure Barrier Policy	Have Requirements Been Addressed in Operator's Pressure Barrier Policy (Y/N)
II.	25a.	Narrative or NA				
III.	1.	Y or N or NA		§ 78a.72(h)		
III.	1a.	Y or N or NA		§ 78a.72(h)		
IV.	1.	Y or N		§ 78a.74		
IV.	1a.	Narrative		§ 78a.74		
IV.	2.	Narrative		§ 78a.72		
IV.	3.	Y or N or NA				
IV.	3a.	Narrative or NA				
IV.	4.	Y or N or NA		§ 78a.87		
IV.	4a.	Y or N or NA		§ 78a.76(a)		
IV.	4b.	Narrative or NA		§ 78a.87(a)(1)-(2)		

APPENDIX A

Regulatory Citation(s):

78a.72. and 78.72 Use of safety devices – blow-out prevention equipment.

Initial Function and Pressure Testing (prior to placing in service on the well)

(e) The operator shall conduct a complete test of ram type blow-out preventer and related equipment for both pressure and ram operation before placing it in service on the well. The operator shall test the annular type flow-out preventer in accordance with the manufacturer's published instructions, or the instructions of a professional engineer, prior to the device being placed in service. Blow-out prevention equipment that fails the test may not be used until it is repaired and passes the test.

Subsequent Function and Pressure Testing (while in service on the well)

(f) When the equipment is in service, the operator shall visually inspect blow-out prevention equipment during each tour of drilling operation and during actual drilling operations test the pipe rams for closure daily and the blind rams for closure on each round trip. When more than one round trip is made in a day, one daily closure for blind rams is sufficient. Testing shall be conducted in accordance with American Petroleum Institute publication API Recommended Practice 53...

Question:

API Recommended Practice 53 establishes BOP testing protocols that differ from those in the Department's regulatory requirements under Chapter 78 (relating to oil and gas wells) and Chapter 78a (relating to unconventional wells). Some operators have expressed concern that more frequent function testing will cause excessive equipment wear. What is the Department's current interpretation of how API Recommended Practice 53 and the regulations under 78a/78.72(e) and 78a/72(f) interface?

Response:

Sections 78.72 and 78a.72 distinguish between two different BOP testing protocols:

- (1) *Initial Function and Pressure Testing* – those protocols to be used prior to operations, i.e., before placing the BOP in service, as described in subsection (e) of each section; and
- (2) *Subsequent Function and Pressure Testing* – those protocols to be used after operations requiring a BOP have commenced, as described in subsection (f) of each section.

For *Subsequent Function and Pressure Testing*, the Department's testing program for rams specifies a greater number of assessments than API's in terms of testing frequency.

In light of recent updates to API Recommended Practice 53 and operational considerations/industry best management practices, the Department will accept both frequency and function testing as compliant, if

they align with all recommended practices in API Recommended Practice 53. For operators choosing to utilize another method after the BOP is placed in service and not described in this FAQ, the procedure should be documented on forms provided by the Department and submitted for review and approval by the Department prior to implementation.

APPENDIX B

DEP Emergency Contact Numbers		
Region	Emergency Phone	Counties Supervised
Southeast	570.826.2511	Bucks, Chester, Delaware, Montgomery, Philadelphia
Northeast	570.826.2511	Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Wayne, Wyoming
South-central	570.327.3636	Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry, York
North-central	570.327.3636	Bradford, Cameron, Centre, Clearfield, Clinton, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga, Union
Southwest	412.442.4000	Allegheny, Beaver, Cambria, Fayette, Greene, Somerset, Washington, Westmoreland
Northwest	814.332.6945 After Hours: 800.373.3398	Armstrong, Butler, Clarion, Crawford, Elk, Erie, Forest, Indiana, Jefferson, Lawrence, McKean, Mercer, Venango, Warren
RCSOB	800.541.2050	Statewide and Interstate

Please note this table is specific to Oil and Gas District Operations (emergency incidents in DEP’s Southeast Region should be reported using the Northeast Regional Office number and emergency incidents in DEP’s South-central Region should be reported using the North-central Regional Office number).