POLICY FOR THE REPLACEMENT OR RESTORATION OF PRIVATE WATER SUPPLIES IMPACTED BY UNCONVENTIONAL OPERATIONS (DEP ID: 800-0810-002)

COMMENT RESPONSE DOCUMENT

August 8, 2020

Pennsylvania Department of Environmental Protection
Office of Oil and Gas Management

LIST OF COMMENTATORS

1. Marcellus Shale Coalition
   24 Summit Park Drive
   Pittsburgh, PA 15275

2. Jeffrey P. Walentosky, P.G.
   Senior Associate & President
   Moody & Associates, Inc.
   199 Johnson Road Building #2, Suite 10
   Houston, PA 15342

3. Emily Krafjack
   1155 Nimble Hill Road
   Mehoopany, PA 18629

4. The Responsible Drilling Alliance
   P.O. Box 502
   Williamsport, PA 17703-0502

5. Darlene Marshall
   1070 Highland Street Extension
   DuBois, PA 15801

6. Chevron Appalachia LLC
   800 Mountain View Drive
   Smithfield, PA 15478

COMMENTS AND RESPONSES

1. **Comment:** Thank you for taking comments on your "Policy for the Replacement or Restoration of Private Water Supplies Impacted by Unconventional Operations." It is my understanding that this document is only to provide guidance to ensure compliance with legal requirements and I appreciate the opportunity to comment on this valuable resource. (5)

   Response: The Department acknowledges the comment. The purpose of this technical guidance document is to inform Department staff, the regulated community and the public of how to comply with the private water supply restoration and replacement requirements in the 2012 Oil and Gas Act, The Clean Streams Law and 25 Pa. Code Chapter 78a.

2. **Comment:** As a Pennsylvania resident located in Brady Township, I've learned a lot in the last five years about unconventional well operations after the proposal of an injection well for disposal of waste in our area. Ensuring our water supplies are never impacted has been the main goal of our neighborhood and local communities, so we thank you for establishing and sharing these guidelines to provide the framework for your policy to help us understand regulations. (5)

   Response: The Department acknowledges the comment.

3. **Comment:** Page i, Purpose: This should be revised to be consistent with respect to the scope of the document and contain the applicable sections of the laws and regulations cited. Updated below:

   "The purpose of this guidance is to inform Department staff, the regulated industry and the public how to comply with the water supply restoration and replacement requirements ***for private water supplies*** *in the 2012 Oil and Gas Act,* ***Section 3218****. The Clean Streams Law,* ***Section XXX (m)****. and 25 Pa. Code Chapter 78a****, Section 78a.51."*** (1)

   Response: The Department agrees with the first portion of the comment and has added the word "private" to this paragraph. However, it is appropriate to provide the citations already provided in this section instead of the suggested specific citations, because multiple sections of each law cited may apply. Specific citations are included in the body of the final guidance where appropriate.

4. **Comment:** Page i Applicability: The applicability of the Policy needs to be clarified that it is to be for new water supply complaints that originated on or after October 8, 2016. An applicability definition indicating that if the investigation is more than 6 months old it is not subject to this guidance document would help to provide industry with clarity on the path forward for existing complaints. This language should be added to this section. (1)

   Response: The Department respectfully disagrees that October 8, 2016 (Chapter 78a's effective date) is the appropriate date for the applicability of this document. While Chapter 78a codified the Department's interpretation of the water supply restoration and replacement standards in Section 3218 of the 2012 Oil and Gas Act, these statutory requirements were enacted on February 14, 2012, with an effective date of April 16, 2012, subject to the repeal provisions in Sections 3 and 4 in the act of February 14, 2012 (P.L. 87, No. 13).

5. **Comment:** Both the Authority and Purpose statements on page I refer to the Clean Streams Law, but it is unclear exactly which provisions of the Clean Streams Law are being referenced. The applicable provisions of the Clean Streams Law, if any, should be described in the Background section on pages 1-2, the same way as the Oil & Gas Act provisions are explained therein. (1)

   Response: The Department has amended the "Background" section to include discussion and citations to specific applicable provisions in The Clean Streams Law.

6. **Comment:** The Policy statement on page i states *"DEP will follow the guidance presented in this document"* however, the Disclaimer section on page i states, *"DEP reserves the discretion to deviate from this policy."* DEP should reconcile the conflict between the two statements. (1)

   Response: It is the Department's intent to follow the guidance outlined in this document to ensure statewide consistency. This document contains the Department's interpretation of existing statutory and regulatory requirements as a statement of policy to follow under different specific circumstances. Where appropriate and as circumstances warrant, it is reasonable and appropriate for the Department to deviate from this statement of policy to ensure compliance with the applicable law.

7. **Comment:** Page 1 Background Paragraph 1: The following revision should be made so that the language matches the referenced Oil and Gas Act (3218(a)) exactly:

   *"Section 3218(a) provide that the quality of a restored or replaced water supply must meet the standards established under the Pennsylvania Safe Drinking Water Act (35 P.S. §§ 721.1-721.17) or is comparable to the quality of the water that existed prior to pollution if the water quality **exceeded those** standards."* (1)

   Response: The Department declines to make the suggested edit and cite only to the statutory provision. The statement in the background section about the water quality standard for restored or replaced water supplies is stated in a manner intended to remove any ambiguity to the Department's interpretation of the statutory language. This language is consistent with the language in 25 Pa. Code § 78a.51(d)(2) which was adopted in 2016 to codify the Department's interpretation of 58 Pa.C.S. § 3218(a).

8. **Comment:** Page 1 Background, Paragraph 3: The DEP should consider adding language in this paragraph that the Department is the lead in an investigation and has the sole responsibility to make a determination of impact. Additionally, DEP should define the applicable roles and responsibilities of both the DEP and Pennsylvania Department of Health (DOH) so that operators and landowners understand to whom they should submit a complaint. (1)

   Response: The purpose of the paragraph is to state the intent of the Department to share information with the Pennsylvania Department of Health. The Department cannot prescribe what agency (federal or state) will have primacy over any particular case. Additionally, the Department cannot define what responsibilities the Department of Health may choose to exercise.

9. **Comment:** Page 1 Background Paragraph 4: The term "casual [sic] connection" is not defined in regulation or in the Act. The presumption buffer from the vertical wellbore is clearly defined

in the Act. If the definition of "casual [sic]connection" varies from this, it should be defined, or it should be removed from the Policy altogether. (1)

Response: The phrase "causal connection" refers to the Department's determination that the cause of the water supply impact and the oil and gas operation being investigated are connected. As such, the Department believes it is appropriate to use the phrase here to clarify the requirements in Section 3218 of the 2012 Oil and Gas Act.

10. **Comment:** While wanting to support the Department's efforts, we find a number of areas of the proposed policy to be inadequate to protect the health and quality of life of families living in the shale fields. We have seen water supplies impacted far beyond the presumptive zone. We believe those families, or the Commonwealth if its waters are compromised, should be compensated if it can be determined where the impact came from, regardless of the distance or the time involved. (4)

    Response: The Department agrees with the commentator about protecting water supplies but respectfully disagrees with the commentator's characterization of the applicable law. Section 3218(a) requires all water supplies impacted by oil and gas operations regardless of the presumptive zone must be restored or replaced.

    Section 3218(c) of the 2012 Oil and Gas Act establishes the presumption of liability. The presumption encompasses situations in which the water supply is within 2,500 feet of the unconventional well bore, and the pollution takes place within twelve months of the later of several listed activities. The Environmental Quality Board does not have regulatory authority to expand the scope of the statutory presumption.

    However, in cases where the water supply falls outside of the area of rebuttable presumption, the Department will conduct a water supply investigation when a request has been made to the Department. When the Department determines that a water supply has been adversely impacted by oil and gas operations, the expectations in the technical guidance document for the permanent restoration or replacement of the water supply are the same as when the water supply falls within the rebuttable presumption area.

11. **Comment:** Page 1 Background Paragraph 5: The citation at the end of this paragraph should be updated as follows: "See 58 Pa.C.S. § 3218(c)***(2)"*** (1)

    Response: The citation has been corrected.

12. **Comment:** Page 1 Background Paragraph 6: To be consistent with the Act, item 1 should be revised as follows:

    "The pollution existed prior to the drilling**, stimulation** or alteration activity as determined by a pre-drilling or pre-alteration survey." (1)

    Response: The language has been corrected.

13. **Comment:** Page 1 Background Paragraph 6: To be consistent with the Act, item 3 should be revised as follows:

"The water supply is not within 2,500 feet of an unconventional ***vertical*** *well****bore****."* (1)

Response: The language has been corrected.

14. **Comment:** Page 2 Background Paragraph 6: "Unconventional wells" should be removed from item 4, since the beginning of the document limits the scope of the Policy to these wells. The item should be revised as follows:

"The pollution occurred more than 12 months after the later of completion, drilling, stimulation or alteration activities." (1)

Response: The Department believes the existing language is appropriate given the distinctions made in the Act regarding presumption of liability for unconventional and conventional wells.

15. **Comment:** Page 2 Background Paragraph 6: To be consistent with the Act, item 5 should be revised as follows:

*"The pollution occurred as a result of a cause other than drilling****, stimulation*** *or alteration activity. Given the technical nature of this defense, a report documenting the cause should be prepared, signed and sealed by a geologist licensed in this Commonwealth or accompanied by an explanation of why a geologic analysis was unnecessary based on the facts."* (1)

Response: The language already used in this paragraph is consistent with the language found in the Section 3218(d)(2)(v) 2012 Oil and Gas Act.

16. **Comment:** Page 2 Background Paragraph 7: DEP should add the following sentence to the end of this paragraph in the case that a water supply owner does not wish it to be replaced:

"*If the Department receives landowner notification that restoration or replacement is not desired, then the Department will consider the complaint closed and notify the landowner and operator that the operator has no further statutory obligation to restore or supply water to the landowner."* (1)

Response: The Department respectfully disagrees with the comment. The Department's statutory obligations to ensure that impacted water supplies are restored or replaced in accordance with the applicable law are not fulfilled by notification that the landowner does not desire a restored or replaced water supply. That said, the Department will consider a landowner's interests in addressing impacted water supplies when ensuring compliance with the applicable law. Additionally, the Department is also obligated to respond to the needs of the users of the water supply. The landowner and the users of a water supply may not be the same entity.

17. **Comment:** On page 2 under the "Procedures" section, there is a fundamental flaw of not going into further details of the necessary requirements of Water Supply Impact Determination procedures. These outlined procedures can be generalized but should be used as a guideline for the Department and Operator representatives to complete a proper investigation. This procedure

can easily be included in this TGD and Document # 820-4000-001 titled "Standards and Guidelines for Identifying, Tracking and Resolving Oil and Gas Violations". The necessary requirements/parameters of any water supply impact investigation include:

a. Type of complaint – water quality/quantity.

b. Timing of oil/gas activities in comparison with the type of complaint.

c. Any documented water quality/quantity issues with the supply in question prior to the start of oil/gas activities?

d. Any issues experienced during the drilling, cementing and stimulation of the oil/gas well(s) in question?

Any other variables that need to be considered as part of this complaint (geology, water supply construction, low yield characteristics of local aquifer, change in usage of the supply, etc.)? (1, 2)

Response: These concerns fall outside of the scope of this document and the "Standards and Guidelines for Identifying, Tracking and Resolving Oil and Gas Violations" (herein "TGD #820-4000-001"). The guidance in this document assumes that a private water supply has been determined to be impacted and either falls under the rebuttable presumption criteria or the Department has made a positive determination that the impact was caused by oil and gas operations. A separate document for water supply impact determination procedures may be developed in the future.

18. **Comment:** Page 2 Procedures A. Paragraph 2: This paragraph is not consistent with the regulatory text in section 78a.51(b) and (h). The Policy states that "*all water supply concerns related to oil and gas operations should be referred to the appropriate Oil and Gas Division Office*," and refers to Appendix A for the contact information, which is limited to those local phone numbers and addresses. This paragraph should be revised to be consistent with section 78a.5l(b) and (h) and include the exact language. Please see additional information below:

Section 78a.51(b), which applies to landowners and affected persons, also allows for calling a state-wide phone number (800) 541-2050. This option should be included in the Policy.

Section 78a.51(h), which applies to operators, requires the notification to the Department to be made electronically through its website, so the reference to the Division offices and Appendix A would not be appropriate for those notifications. (1)

Response: The Department respectfully disagrees with the first comment. The Office of Oil & Gas Management statewide toll-free phone number for oil and gas related complaints is included in the policy.

The Department agrees with the second comment, and a paragraph has been added to specify the circumstances contemplated in section 78a.51(h).

19. **Comment:** Page 2 Procedures A. Paragraph 4: Add the following to this paragraph:

"Once the Department makes a positive determination that an unconventional well operator is responsible for adverse impacts to a water supply, the Oil and Gas District Offices should use the procedures outlined in this document **and in TGD 820-4000-001** as guidance to ensure adequate and timely replacement or restoration of an affected water supply. Oil and Gas District Offices should follow this guidance unless the circumstances of a specific case warrant a different approach to resolving the case, within the requirements of the law." (1)

Response: The suggested language has been added.

20. **Comment:** The technical guidance document leaves too much opportunity to result in the water supply owner hanging dealing with the issue themselves. For example, impacted supplies beyond the presumptive zone are not promptly provided with water. Thus, the water supply owner has immediate needs which they must address themselves. Water costs money. Should the operator be proved negligent a reimbursement of these expenses from the get go is appropriate. (3)

Response: The Department acknowledges this comment. Section 3218(c.1) of the 2012 Oil and Gas Act requires an operator to provide temporary water if the affected water supply is within the rebuttable presumption area and the presumption applies. The Environmental Quality Board does not have the authority to expand the scope of this statutory requirement. Importantly, in "Standards and Guidelines for Identifying, Tracking, and Resolving Oil and Gas Violations" (document number 820-4000-001), the Department's stated policy is to request the operator provide temporary water to the water supply user if the Department observes a potential impact to the water supply and the water supply is not within the rebuttable presumption area. Further, nothing in this document or the applicable law prevents a water supply owner or user from pursuing damages from the operator as a private legal matter.

21. **Comment:** Page 2 Procedures B Paragraph 1: DEP should add a sentence to this paragraph indicating that a landowner may decline water from the operator. An operator should not be required to provide water if the property owner declines its delivery, whether for immediate need or as a temporary water supply. (1)

Response: The Department is obligated to respond to the needs of the users of the water supply as well as the landowner. Because the landowner and the users of a water supply may not be the same entity, a landowner seeking to decline temporary water does demonstrate compliance with the applicable law.

22. **Comment:** Page 2-3 Procedures B Paragraphs 2 & 3: Make the following revisions:

"*The Department will notify the water supply user/owner that the rebuttable presumption applies to their specific case,* ***and whether or not the operator has rebutted the presumption****, and provide a fact sheet explaining rebuttable presumption and their rights under the 2012 Oil and Gas Act.*

The Department ***will*** *rescind its request to an operator to ensure delivery of water to the water supply user within 24 hours, if the operator provides a valid statutory defense to the rebuttable presumption of liability to the Department."* (1)

Response: The Department believes it is important for the fact sheet to be delivered to the homeowner as soon as possible and should not be held up while the Department is reviewing information provided by the operator in order to rebut the presumption. The Department cannot guarantee the timeframe it needs to determine that presumption has been rebutted by the operator. Therefore, the phase "may rescind" is appropriate.

23. **Comment:** Page 3 Procedures B Paragraph 4: DEP should add to the last sentence that whenever a water supply user/owner is notified in writing of a determination that the operator will be copied on the correspondence. Revise the paragraph as follows:

"If the Department makes a determination that unconventional operations have adversely impacted a water supply, in which rebuttable presumption does not apply, the Department will request that the responsible operator takes measures to ensure delivery of water to the user within 24 hours of being notified of its findings. The Department will also notify the water supply user/owner of the determination in writing, ***while providing a courtesy copy to the operator."*** (1)

Response: The Department has amended the paragraph to reflect this comment.

24. **Comment:** Page 3 Procedures B Item 1 Paragraph 2: Revise this language for consistency with wording in TGD 820-4000-001:

"If the operator fails to ensure delivery of potable water to address immediate **human consumption** water needs of the impacted party within 24 hours of the Department's notification, the Program Manager **may** issue an administrative order directing the operator to provide potable water immediately." (1)

Response: The Department respectfully disagrees with the suggestion in the comment to add the language "human consumption." "Standards and Guidelines for Identifying, Tracking, and Resolving Oil and Gas Violations" (document number 820-4000-001) does not use the term "human consumption." Section 3218 (c.1) of the 2012 Oil and Gas Act states, "The temporary water supply provided under this subsection shall be adequate in quantity and quality for the purposes served by the supply." This is why the Department also has clarifying language in the paragraph preceding the one cited by the commenter which states, "Additional quantities of water may be necessary to address immediate needs depending on the use of the water supply (e.g., animals dependent on the impacted water supply, including pets and livestock)."

The Department agrees with the second suggestion to change the language from "will" to "may" to ensure consistency with the language in "Standards and Guidelines for Identifying, Tracking, and Resolving Oil and Gas Violations."

25. **Comment:** Page 3 Procedures B Item 2: Update the title of this section to: "*Temporary Water Supply* ***and/or Treatment"*** (1)

Response: The Department believes it is reasonable and appropriate for the title to stay the same as the existing title already covers all aspects of temporary water supplies, of which temporary treatment is only one part.

26. **Comment:** Page 3 Procedures B Item 2 Paragraph 1: DEP should include water buffalo and bottled water (consistent with section 78a.5l(f)) as well as portable temporary treatment systems (treated for known contaminants) to be utilized as temporary water supplies. Otherwise, the use of temporary treatment systems could be interpreted as precluded by section 78a.5l(f) and only the use of water buffalo with delivered water could be used to provide replacement water within 72 hours due to the length of time it takes to get MCL samples back from a laboratory (2-3 months). (1)

Response: The Department believes it is reasonable and appropriate not to be prescriptive on the containers used to store a temporary water supply provided that the containers used meet the standards detailed in the document. While a treatment system is a viable way to provide for the temporary water needs to the affected parties, it can only be considered as an option after the impacted water supply has been analyzed and the proper treatment techniques have been identified to treat the impacted water supply to ensure that the treatment system will provide temporary water that meets Pennsylvania Safe Drinking Water Standards. Language has been added to the document specifying when a treatment system may be utilized to provide temporary water.

27. **Comment:** The technical guidance document notes that "the temporary water replacement is only acceptable for a period approved by the Department in writing." Perhaps past experience has illustrated that this is a variable period? Unfortunately, this writer doesn't have this information any more than the owner of the impacted water supply. DEP needs to define how long this period would extend. It must not be vague enough to allow operators to delay solving the problem. (3)

Response: The Department has an obligation to ensure that an impacted water supply is restored or replaced with a permanent water supply. It is reasonable and appropriate to evaluate the timeframe for temporary water supplies on a case-by-case basis. The Department recognizes that there are variables that factor into the time it takes to permanently restore or replace an impacted water supply. The Department will ensure that a temporary water supply is not used indefinitely. When necessary, the Department will document as to when an operator must replace a temporary water supply with a permanent water supply. Any pre-defined amount of time for an operator to provide temporary water would allow the operator to either delay their obligation to provide a readily available permanent solution or be forced to provide a hastily chosen permanent solution due to time constraints. Every case must be evaluated and resolved on a case-by-case basis based upon its complexity and not be resolved based upon arbitrary time schedules. Clarifying language has been added to the document to reflect this position.

28. **Comment:** Page 3 Procedures B Item 2 Paragraph 1: The last sentence states that *"Temporary water replacement is only acceptable for a period approved by the Department, in writing, and does not relieve the operator of the obligation to restore or replace the water supply."* This sentence should be revised. There are no current regulations or laws to support the DEP requiring operators to obtain written approval for temporary water replacement and how long it may take to come to terms with landowners during negotiations. The sentence should state:

"Temporary water replacement does not relieve the operator of the obligation to restore or replace the water supply." (1)

Response: The Department has an obligation to ensure that an impacted water supply is restored or replaced with a permanent water supply. It is reasonable and appropriate for the Department to specify how and for how long an operator provides temporary water supplies. The Department will not allow a temporary water supply to be used indefinitely and believes that having that understanding in place early in the process should provide clear guidance. Clarifying language has been added to reflect the Department's position.

29. **Comment:** Procedures B Item 2 Paragraph 2: The reference to "sanitary purposes" should be deleted since requiring compliance with drinking water standards for anything other than human consumption is inconsistent with section 78a.51(e). (1)

Response: The term "human consumption" includes the use of water for sanitary purposes. To provide clarity, the term "sanitary purposes" has been removed and replaced with a definition for "human consumption." Additionally, section 78a.51(e) pertains to permanently replaced/restored supplies and not temporary water supplies, which is the focus of the paragraph the commenter has referenced.

30. **Comment:** Procedures B Item 2 Paragraph 2: 25 Pa. Code § 109.606 does not require temporary water storage tanks and associated plumbing to be certified and in conformance with ANSI/NSF Standard 61. This sentence should either be removed, or at a minimum, the wording *"must be certified"* in this sentence should be replaced with a concept of ***"should be considered"***. (1)

Response: Citing the Pennsylvania Safe Drinking Water Act (35 P.S. §§ 721.1-721.17) and 25 Pa. Code Chapter 109 (relating to safe drinking water) in this sentence pertains to the water supply being used as the source for temporary water. Using storage tanks and associated plumbing that are NSF/ANSI Standard 61 certified is necessary to ensure that the temporary water is adequate in quality. This requirement will ensure that unintended contamination of the temporary water supply does not occur from the leaching of contaminants from products made of materials that are not meant to store potable water.

31. **Comment:** The temporary water supply connected to the home's plumbing if necessary must provide for plumbing alterations to meet the medical needs of any person in the household requiring certain modifications. For example, chlorinated water may require an in-home filtration for certain medical conditions. (3)

Response: The Department agrees with the comment. Section 3218(c.1) of the 2012 Oil and Gas Act states, "The temporary water supply provided under this subsection shall be adequate in quantity and quality for the purposes served by the supply." The technical guidance also reinforces this provision twice in the section pertaining to temporary water supplies. Operators are required to provide a temporary water supply that meets people's medical needs, if the water supply had to meet certain criteria for documented medical needs that existed prior to the oil and gas operations' impact on the water supply.

32. **Comment:** Procedures B Item 2 Paragraph 3: DEP should justify the quantity of water being required to be provided, "*at least 75 gallons per person."* DEP has provided no reference that supports the need for 75 gallons per person, per day. Older septic systems may have been sized on only the number of bathrooms and/or the number of residents (usually not both) and may not support the proposed amount. (1)

Response: The United States Geological Survey estimates that each person in the United States on average uses about 80-100 gallons of water per day. The 75 gallons per person per day amount comes from the Department's guidance document titled, "Water Supply Replacement and Compliance" (document number 562-4000-101). The 75 gallons per person per day quantity is based on an average individual's daily consumptive, sanitary and other domestic uses of water and was chosen to be consistent with other DEP programs. Any septic system issues should be brought to the attention of the local government's Sewage Enforcement Officer.

33. **Comment:** Procedures B Item 2 Paragraph 3: The reference to "*potable water"* should be removed as it is inconsistent with section 78a.5l(e). There are domestic uses other than human consumption that may not require *"potable"* water. Additionally, the requirement *"to be plumbed into the existing water supply system"* should be removed since section 78a.5l(f) clearly allows tank trucks and bottled water as temporary supplies and those should not be required to be *"plumbed into existing supply systems."* (1)

Response: Section 78a.51(e) pertains to permanently replaced/restored supplies and not temporary water supplies, which is the focus of the paragraph the commenter has referenced. A temporary water supply needs to be adequate in quantity and quality for the purposes served by the supply. A temporary water supply is not adequate for the purposes served by the supply if the affected water supply users have to do without the other purposes the impacted water supply provided while reliant upon a temporary water supply until such time a permanent solution is implemented. Having one potable source of water and one non-potable source of water serve a house would lead to an unacceptable health risk to those occupying the structure, since most structures do not have adequate cross connect controls in place, if any. Therefore, all water used for domestic uses needs to be potable, and the temporary water supply needs to be plumbed into the structure to provide service for all domestic uses that were previously provided by the impacted water supply in order to meet the applicable standard of being adequate in quality and quantity for the purposes served.

34. **Comment:** On page 4 under the "Short Term Water Supply Impacts" section, the Department should not use a six-month cutoff before going the route of permanent replacement or restoration of the supply. I understand that the Department does not want to let these complaints stay unresolved for the long term. However, it is possible to see progress in water quality improvement with the supply, yet not have the water quality return to baseline conditions. Please add an option of allowing an additional 6 months of monitoring of a supply that is obviously trending back to comparable water quality to baseline conditions. (2)

Response: The Department agrees with the comment. There is a sentence in the referenced section that states, "This period should not exceed six months without written Department approval." This sentence indicates that the Department is willing to consider the need to extend the six-month observation period.

35. **Comment:** Page 4 Procedures C Paragraph 1: DEP should extend the timeframe for a temporary impact to at least one year in order to allow for the effects of seasonal differences and fluctuations to be properly evaluated in the analysis. We appreciate DEP adding the possibility of an extension upon approval, however the six-month time frame is too short for appropriate investigation. (1)

Response: Please see the response to Comment 34. The Department is willing to consider the need to extend the six-month observation period.

36. **Comment:** Page 4 Procedures C Paragraph 1: Remove the word "the" in the fifth sentence:

"In lieu of a restoration or replacement plan, under these circumstances, an operator should submit a corrective action/monitoring schedule outlining ***the*** *what measures will be taken by the operator to demonstrate that the quality and/or quantity of the water supply is improving and the issues may be temporary (e.g., water samples and other empirical measurements)."* (1)

Response: The sentence has been corrected.

37. **Comment:** Page 4 Procedures D: DEP should consider adding information within this section on the proper ways to address long term attenuation and instances where the water quality returns to pre-drill conditions within 5 years. (1)

Response: The Department acknowledges the comment and that attenuation can occur over a very long timeframe. However, the Department believes that impacted water supplies that have not returned to baseline conditions within six months (or a Department-approved additional six months) must be permanently replaced. This approach allows for the possibility of natural attenuation to be balanced against the inconvenience to the water supply owner of temporary water supply replacement when oil and gas operations have impacted the water supply. Please also see the response to Comment 34.

38. **Comment:** On page 4 under the "Permanent Restoration or Replacement of Private Water Supply Requirements," in the first paragraph the Department wants the supply restored or replaced within 30 days of the final positive determination. It should be clarified that the final positive determination comes in form of a letter. Also, in this section (on Page 6), it is mentioned that the Department can facilitate the review and approval of the water supply restoration/replacement if the Operator and water user can't come to an agreement. This paragraph should be emphasized as the second paragraph in this section, as the operator and water user quite often will not come to an agreement on many of the restoration/replacement logistics. (2)

Response: The language in the guidance document states that within 30 days of positive determination, the Department will issue a letter Notice of Violation or a written Request for Corrective Action serving as written notice of a final positive determination setting timeframes for the operator to submit a permanent water supply restoration or replacement plan. This does not mean that the water supply must be restored or replaced within 30 days. Also, the Department believes that the paragraph pertaining to conferences should remain where it is located.

39. **Comment:** Page 4 Procedures D Paragraph 1: This paragraph states that the water supply must be restored or replaced within 30 days of the final positive determination. Language should be added to indicate that this determination comes in the form of a letter. In addition, on page 6, the Policy states that the Department can facilitate the review and approval of the water supply restoration/replacement if the operator and water user cannot come to an agreement. This paragraph should be moved to page 4 as the new second paragraph in that section. It is typical that the operator and water user often will not come to an agreement on many of the

restoration/replacement solutions. The first two paragraphs under Procedures Section D should read:

"If the Department determines that a private water supply must be restored or replaced due to pollution or diminution, within 30 days following a final positive determination ***(via a formal letter)****, the Department should issue, as appropriate, a Notice of Violation or a Request for Corrective Action requesting, among other things, a permanent water supply restoration or replacement plan (PWS Plan) with specified time frames for milestones. See "Standards and Guidelines for Identifying, Tracking, and Resolving Oil and Gas Violations" (Document number 820-4000-001).*

As provided in section 78a.51. if the well operator and the water user are unable to reach agreement on the means for restoring or replacing the water supply the Department or either party may request a conference under Section 3251 of the 2012 Oil and Gas Act (relating to conferences) to help facilitate the review and approval of the means for permanently restoring or replacing the water supply." (1)

Response: Please see the response to Comment 38.

40. **Comment:** Operators will continue to see a great deal of water quality/quantity issues because of the lack domestic water well and water supply regulation to ensure qualified contractors are completing the work to an established standard, which will safeguard the health of the citizens of the Commonwealth. (2)

Response: The Department acknowledges the comment. The fact that the Commonwealth lacks established private drinking water wells construction standards further reinforces the need for oil and gas operators to conduct thorough water supply surveys prior to conducting oil and gas operations to rule out operators' liability for preexisting quality/quantity issues.

41. **Comment:** The TGD does not indicate whether or not the water supply owner receives a copy of the sample plan. At the very least, should a water supply owner request a copy they need to be provided a copy. (3)

Response: The Department agrees that the water supply owner/user should receive a copy of any plans mentioned in the document. Language has been added to the document to reflect this position.

42. **Comment:** Page 4 Procedures D Paragraph 3: A PE/PG stamp and involvement is unnecessary and not something within current laws or regulations for the siting, developing, or implementation of replacement domestic water wells in the Commonwealth. This should be deleted, as someone with expertise on this subject matter should be all that is required. Lastly, in the third sentence in this paragraph a comma is needed between "calculations" and "photographs." (1)

Response: The Department respectfully disagrees that this paragraph needs to be edited to address this comment. The sentence being referred to states, "The PWS Plan should state what measures will be taken by the operator to permanently restore or replace the impacted water supply and be prepared and signed by a qualified professional (e.g., P.E., P.G.) with expertise on the subject matter in the proposal." P.E. and P.G. are provided here only as examples of

professionals that may be a qualified professional with expertise on the subject matter in the proposal.

43. **Comment:** Page 5 Procedures D Item a Paragraph 1: For consistency with section 78a51(e), the Department should make the following revisions:

"The quality of a restored or replaced water supply ***used for human consumption*** *must meet the standards established under the act of May 1, 1984 (P.L. 206, No. 43), known as the Pennsylvania Safe Drinking Water Act, or is comparable to the quality of the water supply before it was affected by the operator if that water supply exceeded those standards. See 58 Pa.C.S. § 3216(a); see also 25 Pa. Code § 78a.51(d)(2)* ***and 78a.51(e)****."* (1)

Response: Please see the responses to Comments 7, 29 and 30.

44. **Comment:** Page 5 Procedures D Item a Paragraph 2: A water supply owner does not have the authority to request additional treatment. Only DEP has that discretion, so "the water supply owner" should be removed from the sentence. The Department should add the following language:

"If deemed necessary by the Department, *additional treatment of a public drinking water supply used to replace an impacted water supply may be required to meet these conditions."* (1)

Response: The Department agrees with the comment, and the language has been updated.

45. **Comment:** On page 5, section b, the quantity requirements are discussed. There needs to be an additional clarifying statement in this section that ensures that the water user will not increase the water demand requirement for replacement because of their "future plans" for water usage. (2)

Response: The Department does not believe that additional clarification is needed as the terms used in the referenced section mirror the requirements in 25 Pa. Code § 78a.51(d)(3)(i).

46. **Comment:** Page 5 Procedures D Item b: The quantity of an impacted water source needs to be restored to pre-drill conditions. However, there needs to be additional language that ensures that the water user will not increase the water demand requirement for replacement because of unplanned or unknown "future plans" for water usage. (1)

Response: Please see the response to Comment 45.

47. **Comment:** Page 5 Procedures D Item h: The following language in previous drafts of the Policy has been removed in this final draft version:

"If necessary, the Department will use the Bureau of Mining Programs' "Cost Calculation Comparison for Existing and Replacement Supplies" (Document Number 5600-FM-BMP0451) as guidance for calculating increased operation and maintenance costs."

DEP should insert this language under item h. The gas industry and DEP must be given some standard guidance on how to calculate operation and maintenance costs. DEP should apply consistent parameters across other industries with similar complaints within the Commonwealth.

It is appropriate to use the existing and established Mining Program TGD for water supply replacement. (1)

Response: The Department acknowledges the comment. Reference to the Bureau of Mining Program's guidance document was removed from a previous draft because water supplies impacted by unconventional oil and gas operations are very different from water supply impacts from mining activities.

48. **Comment:** There must not be any reference to say, a statute in the coal mining program as this is the oil and gas program. There are clearly different water supply impacts with each exploitation and they are different programs. The TGDs or regulations must not be co-mingled. (3)

Response: Please see the response to Comment 47. Reference to the Bureau of Mining Program's guidance document was removed.

49. **Comment:** Page 5 Procedures D Item h: The time frame of replacement costs should be limited to a certain time frame such as 15-20 years or the anticipated life of the replacement equipment; unlimited operation and maintenance costs are unreasonable and not used in other DEP programs. (1)

Response: Section 78a.51(d)(1)(v) states that, "the operator shall provide for permanent payment of the increased operating and maintenance costs of the restored or replaced water supply." This regulatory requirement is not limited to 15-20 years of replacement and therefore the Policy cannot be limited in the way the commenter suggests.

50. **Comment:** A permanent water supply is exactly that, it is permanent to that/those home/s. Thus, as long as the water supply exists the operator must assume and be responsible for all future operating and maintenance costs, no matter who owns the home/s. Of course, the option is always there where they impact water supplies; they can purchase the homes. It's been done. (3)

Response: The Department agrees with the comment. Section 78a.51(d)(1)(v) requires that the responsible operator provide for permanent payment of the increased operating and maintenance costs of the restored or replaced water supply. A one-time payment between the water supply owner and the operator may meet the operator's obligation to provide for permanent payment of any long-term increased operation and maintenance costs.

51. **Comment:** Page 5 Procedures D Item h: The word *"permanent"* should be deleted. The operator should have the opportunity to offer a one-time payment based on the needs of the system to the landowner to cover associated operation and maintenance costs. This should be considered a *"permanent payment"*. (1)

Response: The Department respectfully disagrees that this language should be changed. Please also see the response to Comment 50.

52. **Comment:** In regard to operational costs of the permanent system, the operator needs to bear those costs 100%. (3)

Response: Section 78a.51(d)(1)(v) states:

> (1) A restored or replaced water supply, at a minimum, must:
>
> * * * * *
>
> > (v) Not result in increased costs to operate and maintain. If the operating and maintenance costs of the restored or replaced water supply are increased, the operator shall provide for permanent payment of the increased operating and maintenance costs of the restored or replaced water supply.

The Department cannot require an operator to pay 100% of the cost associated with operating a water supply if there were costs already associated with the operation of the water supply prior to the impact from oil and gas operations. The Department can only require an operator to make provisions to pay for the *increased* cost to operate a water supply that is more that the preexisting cost.

53. **Comment:** We believe all of any ongoing restoration, operation, and maintenance costs should be born by those proven to have caused the problem in the first place, and that includes complete replacement of necessary equipment over time as long as the problem continues, no matter how far into the future. (4)

Response: Please see the response to Comment 52.

54. **Comment:** Page 5 Procedures D Item i: The following revisions should be made to this item to protect operators when a water supply owner continues to ask for additional treatment measures.

"When an impacted water supply is permanently replaced with a public water supply regulated by the Department's Safe Drinking Water Program and provisions for the permanent payment of the increased operating and maintenance costs are made to the affected parties, but the property owner does not wish to be provided with any additional treatment measures to water from the public water supply ***when potentially eligible for such additional treatment****. The Department will consider the remedy as having met the Department's requirement for the responsible operator to permanently restore or replace the affected supply."* (1)

Response: The Department respectfully disagrees that additional clarification in this paragraph is needed.

55. **Comment:** Page 6 Procedures E Item 1: DEP should revise this Item in the following manner to be consistent with section 78a.5l(e):

"Effectiveness - The ability of the remedial response to mitigate the ***impacts from*** *the site specific contaminants* ***affected by oil or gas operations****. Restoration or replacement plans* ***for water supplies used for human consumption*** *must provide responses that meet Pennsylvania Safe Drinking Water Act standards or better. See 25 Pa. Code § 78a.51(d)(2).* ***Restoration or replacement plans for water supplies used for other than human consumption must provide responses that are adequate for the purposes served by the supply. See 25 Pa. Code § 78a.51(e)."*** (1)

Response: The last sentence of the suggested language provided in the comment has been added to the guidance document. Please also see the responses to Comments 29 and 30.

56. **Comment:** I object to the factor of cost being a limiting factor to water restoration. The operator for all intents and purposes "broke" the supply and so they need to permanently fix it – and fix it within the requirements of the law. These operators are making millions of dollars off their exploitation of natural gas. It is well known that they are ripping off royalties and they do not pay their fair share of taxes. None of this reflects the sweet bargain of a deal many landowners expected. The least, and it is the least, these operators can do is properly fix the permanent water supply of those they impact. It is tiresome to continually read or see in action the reckless or devoted manner they follow to protect their own interests and the rest be damned. (3, 4)

Response: The Department acknowledges this comment. Cost should not be a limiting factor for restoring or replacing a water supply and may be only one of many factors the Department will take into consideration when reviewing an operator's proposed Permanent Water Supply Restoration or Replacement Plan. In Section D, the technical guidance document outlines nine criteria that all restored and replaced water supplies must meet regardless of the cost. These requirements are taken from the statutory and regulatory language found in 58 Pa.C.S. § 3216(a) and 25 Pa. Code § 78a.51. Cost may be considered if there is more than one possible solution for restoring or replacing the impacted water supply that achieve the nine required criteria that all restored and replaced water supplies must meet.

57. **Comment:** The water supply owner needs to be included in the preliminary consultation. The water supply owners need to be fully informed and an active party in the replacement process decisions. The commentator suggests adding the option, should a water supply owner desire, to bring their own consultant (qualified water quality specialist/geologist, etc.) to the preliminary consultation. The Department may have different staff members throughout this process. The Department's role is for environmental protection. The unconventional oil and gas regulations are established for environmental protection rather than public health. The water supply owner if they so choose, need to have the option to bring a consultant who is equipped to understand their particular health needs in regards to an impaired water supply and steps to correct it. It may become daunting to a water supply owner who is unaccustomed to dealing with large bureaucracies and has experienced dealing with the operator's representatives. The Department will have their specialists, PE's PG's available to protect the environment, the industry will have their EHS specialists, PE's PG's and possibly even their lawyers present to protect their interests. If the water supply owner desires to bring a consultant to the meeting at their own expense they need to have that option. (3)

Response: The Department acknowledges the comment. The Department respects the water user/owners' right to have any representation they wish to have while dealing in matters involving the Department. The Department encourages water supply users/owners to consult a lawyer and/or a consultant when circumstances warrant their involvement.

Also, the applicable statutes and regulations are implemented and enforced to ensure the protection of public health, public safety and the environment.

This technical guidance document provides guidance regarding a statutory obligation that the Pennsylvania Safe Drinking Water Act standards be met as a minimum when supplying temporary water and when restoring or replacing an impacted water supply.

58. **Comment:** New wells drilled in the same aquifer as the impacted water supply is a ludicrous idea. They are not appropriate and under no circumstances need the Department consider them appropriate. It would be no surprise for some operator to attempt to pull such a reckless action. (3)

Response: In some circumstances, the same aquifer may be the only viable source of water to supply a permanent and reliable source of water. An aquifer may cover large areas and portions of it may be totally unaffected by an impact caused by oil and gas operations. An example of an impact that may not impact an entire aquifer is a spill or release of a polluting substance into the aquifer. Drilling a water well in an uncontaminated portion of the same aquifer up-gradient from the plume may be a reasonable proposal to restore a water supply source. Additional treatment to a newly drilled well in the same aquifer may also be an option to restore the water supply. These options may be preferred to the option of treating a contaminated source of water which may lead to additional treatment requirements and increased long-term operation and maintenance costs. Regardless of the approach taken to replace or restore a water supply, the final water quality standards that need to be met do not change.

59. **Comment:** People need a safe water supply that gives them peace of mind for both health and economic reasons. We question the logic of replacement by drilling into the same aquifer. (4)

Response: Please see the response to Comment 58.

60. **Comment:** Page 7 Procedures F Item 2.a: The term "post-drilling" is not defined in the Act, regulation, or the Policy and needs to be defined or clarified with respect to the purpose of this section. Confirmation of whether the water supply has been restored properly will be a comparison to the applicable standards or background water quality guidance summarized in Paragraphs 2.a.(i) through (vi). It is unclear what "post-drilling" analytical results are referring to. Furthermore, if the term remains, it should be changed since water quality impacts could occur prior to drilling (pad construction). DEP should revise this term to be "**post treatment**". (1)

Response: The Department agrees with the comment and the term "post-drilling" has been changed to "post-restoration" because Section F, Subsection 2 pertains to restoration of a water supply.

61. **Comment:** Page 7 Procedures F Item 2.a: DEP should remove the words *"quality and/or quantity"* from the first sentence as it is redundant. (1)

Response: The Department agrees with the comment, and the words have been removed.

62. **Comment:** Page 7 Procedures F Item 2.a: DEP should consider including a subparagraph after (iii), specific to methane. Methane does not have a primary or secondary drinking water standard established under the Pennsylvania Safe Drinking Water Act, and it has been established that current treatment options will result in about an 80% maximum reduction in the concentration. Assuming an impact of a water supply where pre-drill results indicate methane

was at a relatively low concentration (less than 1 mg/L) or not detected, the post treatment methane concentration may not be "comparable" to the pre-impact water quality as stated in current subparagraph (iii). It is recommended that a standalone paragraph address methane using language that references DEP's action level of 7 mg/I or that it may be addressed by DEP on a case by case basis. (1)

Response: The Department acknowledges the comment. The Department added a new subparagraph (vi) to address the issue of contaminants with no MCLs in any of the established environmental standards used by the Department when dealing with water contamination. Currently, methane is an example of a water contaminant that would be addressed using this criteria.

63. **Comment:** Page 7 Procedures F Item 2.a.iv: The statement *"or be better than"* should be deleted. If the parameter was unknown, then we are only required to treat to Pennsylvania Safe Drinking Water Act MCLs in accordance with the statute and regulations. (1)

Response: The Department agrees with the comment. The phrase "or be better than" has been stricken in this section.

64. **Comment:** Page 8 Procedures F Item 2.a.vi: DEP should list or reference the *"acceptable standards, determined by the Department"* for restored water supplies. (1)

Response: The phrase in question when used in context of the entire paragraph shows that the "acceptable standards, determined by the Department" are to be formulated by the Department on a case-by-case basis to, "allow those uses that were dependent on the impacted water supply to continue." Note, this subparagraph has been moved to the new Section G.

65. **Comment:** On page 8, subsection vi, what are the acceptable standards to be determined by the Department? This should be detailed up front for clarity purposes. (2)

Response: The "acceptable standards" referred to in this section must be determined on a site-specific basis, taking into account the available treatment technology and other site-specific considerations, including the demands and uses that are required of the restored or replaced water supply to meet the previous agricultural, commercial or industrial uses of the impacted water supply. Therefore, such standards will be developed on a case-by case basis. Note, this subparagraph has been moved to the new Section G.

66. **Comment:** Page 8 Procedures F Item 2.b Paragraph 1: The second half of the sentence of this item should be deleted. Per 78a.5l(d)(2), an operator is only required to meet the Pennsylvania Safe Drinking Water Act standards DEP should revise the item as follows:

"The sample plan needs to demonstrate that the remedial actions for the water quality parameter(s) determined to be impacted by oil and gas operations meet, at a minimum, the drinking water MCL standards found in the Pennsylvania Safe Drinking Water Act, ***if any****."* (1)

Response: The Department has amended the document to clarify that the sample plan needs to demonstrate meeting the applicable standards outlined in Section F 2 a(i-vi).

67. **Comment:** Page 8 Procedures F Item 2.b. Paragraph 2: This paragraph should be revised as follows:

"For restored water supplies utilizing a treatment system or if multiple treatment systems are employed serially, one post treatment water sample should be collected to ensure the effectiveness of the entire treatment system(s) as a whole." (1)

Response: The Department respectfully disagrees with limiting the samples needed. Additional samples may be necessary for a variety of reasons. For example, there may be discrepancies between split samples, the need for more samples to optimize the treatment system, or QA/QC issues with the samples. Samples may need to be taken at different points of the treatment train to ensure optimization of a specific treatment unit and to ensure that a treatment unit is not adding a contaminant that may be resulting in a higher concentration level than its respective MCL.

68. **Comment:** Page 8 Procedures F Item 2.b Paragraph 3: In accordance with section 78a.51(d)(2), DEP does not have an open-ended ability to require operators to test for any water quality parameter; these are limited by the Act and current regulations. DEP should make the following revisions to paragraph 3:

"The Department may request that the operator collect samples to analyze for parameters found in Appendix B of this document, as determined by the Department to identify possible presence of parameters of concern. If any parameters are identified from Appendix B, the operator will be required to sample to confirm the adequacy of restoration for a period of no longer than one year." (1)

Response: The Department's authority to require testing for contaminants of concern is not derived solely from the 2012 Oil and Gas Act and regulations promulgated thereunder. Including the language suggested in the comment would be contrary to the Department's authority under the other statutes referenced in this document.

69. **Comment:** Page 9 Procedures F Item 3.a: The reference to the Appendix should be B, not A. (1)

Response: The language has been corrected.

70. **Comment:** Page 9 Procedures F Item 3.c: DEP should make the following revisions to this item:

"When polluted water well(s) are being abandoned, properly abandon the impacted groundwater supply in accordance with Act 610 ***of 1955****, the Water Well Drillers License Act. Guidance on water well abandonment procedures can be found in the Department's document titled, "Groundwater Monitoring Guidance Manual" (Document number 383-3000-001).* (1)

Response: The Department has amended the reference to the Water Well Drillers License Act and included the proper citation.

71. **Comment:** On page 9, subsection c, I would suggest language adding that a Pennsylvania licensed water well driller completes water well abandonment procedures. (2)

Response: It is not reasonable or appropriate to require a licensed water well driller to complete well abandonment procedures as this is not required in the Water Well Drillers License Act, its implementing regulations or in "Groundwater Monitoring Guidance Manual" (document number 383-3000-001).

72. **Comment:** Page 9 Procedures F Item 3.d Paragraph 1: The second half of the last sentence of this item should be deleted. Per section 78a.51(d)(2) an operator is only required to meet the Pennsylvania Safe Drinking Water Act standards. DEP should revise this item as follows:

"Include a sample plan in the PWS plan to demonstrate that the new water source meet all primary and secondary MCL standards established under the Pennsylvania Safe Drinking Water Act." (1)

Response: The Department respectfully disagrees with the comment. The operator is responsible for remediating all pollution to a water supply that is proven to be a result of oil and gas operations or if presumption cannot be rebutted. Please also see the responses to Comments 66 and 68.

73. **Comment:** Page 9 Procedures F Item 3.d Paragraph 3: The DEP may consider providing additional details on how many rounds of sampling the Department requires to confirm the adequacy of the new water source should be included. This should consist of an initial sampling round and one confirmation sample. (1)

Response: The Department believes it is reasonable and appropriate for the amount of sampling needed to confirm the adequacy of the new water source to be made on a case-by-case basis.

74. **Comment:** On page 9, subsection d (Sample plan), 3rd paragraph, further details on how many rounds of sampling the Department requires to confirm the adequacy of the new water source should be included. I would suggest an initial sampling round and one confirmation sample. (2)

Response: Please see the response to Comment 73.

75. **Comment:** Page 10 Procedures F Item 3.e Paragraph 1: If the replacement well that produces greater than 10,000 gallons per day on average is not used for drinking water purposes, there are currently no guidelines under Pennsylvania regulation (other than Act 220 for reporting) to mandate the well construction or well replacement to be completed in accordance with public water supply standards. DEP should make this clarification explicit in the Policy. (1, 2)

Response: The Department clarified this paragraph to state that these measures should be taken under these circumstances. A water well withdrawing an average rate of 10,000 gallons a day in a 30-day period has a consumptive use rate that may potentially stress an aquifer. The Department is not imposing any water well construction standards in the document. Instead, the Department is only specifying some additional planning measures should be taken to ensure that a proposed water well with a high yield does not have a negative impact on the aquifer and affect other uses of the aquifer.

76. **Comment:** Page 10 Procedures F Item 3.e Paragraph 1: This paragraph should be revised as follows:

*"Additional measures **<u>are</u>** to be taken when proposing water well(s) as **<u>a</u>** remedy for water replacement, **<u>where the</u>** total withdrawal or withdrawal **<u>from</u>** one or more points of withdrawal within a watershed operated as a system either concurrently or sequentially exceeds an average rate of 10,000 gallons a day in a 30-day period."*

Additionally, it is not clear if pages 10-12 are only intended to apply in situations where the withdrawal exceeds the 10,000 gallons a day in a 30-day period, as this paragraph appears to imply, or if pages 10-12 of the Policy would apply if the withdrawal is less than 10,000 gallons a day in a 30-day period. DEP should provide additional clarification regarding how the 10,000 gallons per day is to be applied within the Policy. Alternatively, it may be appropriate to move this information to F.3.e.(v) on page 11. (1)

Response: The Department agrees with the comment and has added clarifying language.

77. **Comment:** Page 10 Procedures F Item 3.e Paragraph 2: DEP should make the following revisions to this paragraph for clarity:

*"For helpful information related to water well construction, refer to the Hydrogeologic Report requirements in the "PUBLIC WATER SUPPLY MANUAL" (Document number 383-2125-108); the "AQUIFER TESTING GUIDANCE FOR PUBLIC WATER SYSTEMS" (Document Number **<u>394</u>**-2125-001; and the well abandonment procedures of the "GROUNDWATER MONITORING GUIDANCE **<u>MANUAL</u>**" (Document number 383-3000-001)."* (1)

Response: The language has been corrected.

78. **Comment:** On page 10, subsection (i) **–** Well Siting, in the 3rd paragraph regarding potential impacts to special protection waters, it is possible that a previous withdrawal had been impacting the watershed. If the impact is the same as the previous use, why would the Operator be obligated to address this issue when the existing water user did not prior to oil/gas activities? (2)

Response: If the groundwater withdrawal has potential to impact special protection waters, regardless of previous and continuing activities, the operator drilling the new groundwater well should create a plan to address those impacts.

79. **Comment:** Page 10 Procedures F Item 3.e.i Paragraph 3: Regarding potential impacts to special protection waters, it is possible for a withdrawal to exist within these watersheds. If there was potential to impact due to existing withdrawals, it does not seem appropriate to require the operator to address these potential issues when developing a new withdrawal, especially when the existing water user did not identify potential impacts and prepare a plan prior to oil/gas activities. DEP should provide additional clarification with respect to existing water withdrawals in special protection watersheds. (1)

Response: Please see the response to Comment 78.

80. **Comment:** Page 11 Procedures F Item 3.e.iii Paragraph 1: The time for the Department Professional Geologist should be listed in business days and that time should be 15 business days

and not 30 days. In addition, DEP should move the last sentence in this paragraph to the middle of the paragraph, as shown below:

After the site survey is conducted, the professional geologist should prepare and submit a well drilling plan to the appropriate Oil and Gas District Office. See Appendix A. The plan should establish a preliminary hydrogeologic understanding of the project site, a monitoring plan for aquifer testing (quality and quantity) and the proposed well construction design of the water well(s). Well drilling should not commence until the well drilling plan is reviewed by a Department Professional Geologist. ***The Department Professional Geologist will review the plan within 15 business days of its submission to the Department.*** *For existing wells being proposed as a source of replacement water supply, a plan should still be submitted to the Department establishing a preliminary hydrogeologic understanding of the project site, a monitoring plan for aquifer testing (quality and quantity) and any available information on the existing water well(s), such as well driller logs and field tests.* (1)

Response: The Department agrees with the comment recommending that the last sentence be moved to the middle of the paragraph and has made this change. While the Department does not agree with the 15 business days suggestion provided by the commenter, the word "calendar" was added to the paragraph to provide more clarity to the 30-day time frame for the Department Professional Geologist's review.

81. **Comment:** On page 11, subsection (iii) – Well Drilling Plan, in the 1st paragraph regarding the review by a Department Professional Geologist, it is stated that the review will take 30 days. It should be stated how many business days, in addition, that is a long time to review a simple drilling plan submission. I would suggest a 15-business day review period. (2)

Response: This provision represents the maximum amount of time allotted for the review of any well drilling plan. The word "calendar" has been added to the sentence to provide more clarity to length of the 30-day review period.

82. **Comment:** Page 11 Procedures F Item 3.e.iii Paragraph 3: Within regulation and guidance the Department has stated that drilling activities do not constitute earth disturbance. Operators are not required to maintain E&S permit coverage for stabilized sites. Why would water wells require E&S controls when the act of well drilling is not considered earth disturbance? Delete this paragraph. (1)

Response: The paragraph in question states that all earth moving activities must follow erosion and sediment control measures under applicable law and regulation. For example, under section 102.4(b)(1), the "implementation and maintenance of E&S BMPs are required to minimize the potential for accelerated erosion and sedimentation, including those activities which disturb less than 5,000 square feet." In addition, while an earth disturbance *permit* most likely will not be required for an act of drilling a drinking water well, the water returned to surface from the act of drilling a well may cause accelerated erosion and a discharge of sediment into waters of the Commonwealth if not properly controlled. The Department expects preventative measures to be taken in accordance with any applicable regulation to prevent such occurrences.

83. **Comment:** My bottom line suggestion for the Department and for the Commonwealth of Pennsylvania is in regards to the lack of domestic water supply regulation and guidance. As the

Commonwealth has the 2nd most number of private water supplies in the Union, it is hard to fathom that the Department of Environmental Protection and Department of Health does not make these regulations a necessity. A domestic water supply regulation (much like Maryland and West Virginia) will help ensure water supplies are installed in accordance with industry standards, which will go a long way to protect human health and the environment. (2)

Response: The Department acknowledges the comment and has supported the development of legislation pertaining to the proper construction, operation, and maintenance of private water supplies.

84. **Comment:** Page 12 Procedures F Item 3.e.v: In the last sentence "aquifer" is spelled incorrectly, "aquafer." (1)

Response: The spelling error has been corrected.

85. **Comment:** Page 12 Procedures F Item 3.f.ii: *"Capital costs and long term cost"* should be limited to the 20-year lifespan of a typical domestic water well. The Department should not interfere in the negotiations an operator conducts with a water supply owner to settle potential cost increases. (1)

Response: Please see the responses to Comments 49 and 50. Section 78a.51(d)(1)(v) states that, "the operator shall provide for permanent payment of the increased operating and maintenance costs of the restored or replaced water supply." This regulatory requirement is not limited to 20 years of replacement, and therefore the Policy cannot be limited in the way the commenter suggests.

86. **Comment:** Page 12 Procedures F Item 3.f.iv Paragraph 1: DEP should make the following revisions:

*"Include a sample plan **with** sampling requirements **based** on the public water system's classification as follows:"* (1)

Response: The Department agrees with the comment, and the language used in the paragraph was updated.

87. **Comment:** Page 13 Procedures F Item 3.f.iv Last Paragraph: In the first sentence the comma should be removed between the words *"water supply"* and *"post treatment."* (1)

Response: The Department added clarifying language making it clear that the applicability of the second clause is conditional upon the occurrence of the actions in the first clause.

88. **Comment:** Page 13 Procedures F Item 3.f.iv Last Paragraph: This second sentence states *"Any other water quality parameter(s) deemed a concern by the Department for which the treatment system is targeting."* In accordance with section 78a.51(d)(2), the DEP does not have an open-ended ability to require operators to test for any water quality parameter; these are limited by the Act and current regulations. DEP should make the following revisions to the second sentence of this paragraph:

"Any **other** water quality **parameter(s) found in Appendix B of this document, if appropriate, deemed a concern by the Department for which the treatment system is targeting."** (1)

Response: The Department respectfully disagrees with the comment. Please see the response to Comment 72.

89. **Comment:** Page 13 Procedures G Paragraph 2: Who does the Department considered to be *"properly trained?"* There are not current certifications or licenses to collect these samples. DEP should make the following revisions:

*"Additionally, all **samples** to be submitted to a laboratory for **volatile organic chemical (VOC)** analysis should be collected by **a person experienced in appropriate methods of collecting such samples."*** (1)

Response: The Department updated the document to be consistent with the sampling expectations found in section 78a.52(c).

90. **Comment:** Page 15 Appendix B: DEP should clarify whether this will be the "new" list for which the Department will sample when a complaint is filed. (1)

Response: The Department does not agree that further clarification is needed. The water quality contaminants the Department initially samples for during an investigation are core water quality contaminants that are indicative to oil and gas operations. The list of water quality contaminants and their respective MCLs found in Appendix B is for determining if a new replacement water supply meets Pennsylvania Safe Drinking Water Standards.

91. **Comment:** Page 15 Appendix B: The use of Appendix B as a list of water quality standards that a private well is required to meet, even if it is a new water source, is not appropriate. The list of parameters is from the Pennsylvania Safe Drinking Water Act; however, an operator is most often replacing or restoring private water supplies that are not regulated to the same degree as public water supplies. If a supply is serving less than 25 people, then these parameters should not have to be sampled. A private water supply should only need to meet standards that are comparable to the original source. The parameter lists are too broad for the types of contamination that are associated with E&P activities, e.g., pesticides, etc. (1)

Response: The Department respectfully disagrees with the comment. Replaced water sources need to demonstrate meeting the applicable standards outlined in Section F 3 a (i & ii).

92. **Comment:** Page 15 Appendix B: This list should include dissolved gases, e.g. methane, since they are naturally occurring and most often the underlying reason for a new water supply. (1)

Response: Methane, ethane and propane have been added to the list but will only be required under the circumstances prescribed in the document. Monitoring for these and other contaminants may be necessary to adequately evaluate the quality of the replaced/restored water supply.

93. **Comment:** Page 15 Appendix B Paragraph 1: The last sentence states, "The Department may require monitoring of any other contaminant(s) as determined necessary to adequately evaluate the quality of the replaced/restored water supply." As stated previously, the DEP is not authorized to require operators to test for "any" additional contaminant other than those listed in Appendix B, in accordance with section 78a.5l(d)(2). DEP should revise this sentence as follows:

"The Department may require monitoring of any other contaminant(s) ***listed in Appendix B, if appropriate,*** *as determined necessary to adequately evaluate the quality of the replaced/restored water supply."* (1)

Response: The Department respectfully disagrees with the comment. Please see the response to Comment 72.

94. **Comment:** Page 15 Appendix B Volatile Organic Chemicals: Apart from BTEX, the list contains chemicals that are not associated with oil and gas operations. Pennsylvania's Chapter 245 regulations contain a short list of VOCs that would be more appropriate to use for VOC testing requirements. The MSC recommends the DEP utilize this list, and operators should only be required to be sampled for on a case-by-case basis. (1)

Response: The Department respectfully disagrees with the comment. Please see the response to Comment 72.

95. **Comment:** Page 15 Appendix B Synthetic Organic Chemicals: This list should be eliminated from the sampling program. These chemicals primarily are pesticides that are not utilized in oil and gas operations. (1)

Response: While the list of pesticides in Appendix B may not be used in oil and gas operations, oil and gas operations do occur in areas where these pesticides could be used (e.g., agricultural lands). Therefore, it is reasonable to require the testing of these contaminants for a replacement water supply. Please also see response to Comment 91.

96. **Comment:** Page 15 Appendix B Inorganic Chemicals: DEP should remove the following chemicals, as they are not utilized in oil and gas operations: Antimony, asbestos, beryllium, cadmium, cyanide, fluoride, lead, mercury, nitrate, nitrite, selenium, and thallium. (1)

Response: The Department respectfully disagrees with the comment. Please see the response to Comment 91.

97. **Comment:** Page 16 Appendix B Microbiological Contaminants: The standard is incorrect for this list. There is no current requirement for 3 samples for total coliform concentration testing; one sample for presence/absence should be all that is required. In accordance with the Act and regulations, operators are not required to complete a *"constant rate aquifer test"* and the

coliform sampling is only required for proposing to connect to a public water supply as a restoration method. (1)

Response: The Department agrees with the number of Total Coliforms samples to be taken. The language has been changed in the document. A Total Coliform sample should be taken whenever any work is done to a domestic water system's plumbing or a water supply's distribution system.

98. **Comment:** Page 16 Appendix B Secondary Contaminants and others: DEP should remove the following chemicals as they are not utilized in oil and gas operations: aluminum, silver, and zinc. (1)

Response: The Department respectfully disagrees with the comment. Please see the response to Comment 72.

99. **Comment:** Page 16 Appendix B Microscopic Particulate (MPA): This information is being referenced from the Surface Water Identification Protocol Guidance and should not be included in a Policy for Replacement or Restoration of a Private Water Supply. DEP should delete this section. (1)

Response: The first words in the MPA section are "If applicable". The section defines when an MPA is applicable as follows:

> MPA sampling should be conducted by a qualified person for all new groundwater sources to be used for human consumption which fall within the criteria of the Guidance for Surface Water Identification Protocol. (Document number 383-3500-106).

When a groundwater source is identified as being a "Groundwater Under the Direct Influence of Surface Waters" (GUDI) using the guidance document, a microscopic particulate analysis is necessary to ensure that the ground water source is not susceptible to surface water intrusion and the problems associated with it. Examples of potential problems associated with GUDI water sources include bacteria, viruses and protozoans being present in the water supply. An operator or their consultant should be cognitive of this possibility when siting a potential new water supply source.

100. **Comment:** Page 16 Appendix B Other Contaminants: As stated several times before, under the Act and regulation the DEP does not have an open-ended ability to require operators to test for any water quality parameter. DEP should delete this section. (1)

Response: The Department respectfully disagrees with the comment. Please see the response to Comment 72.

101. **Comment:** The commentator supports the comments of the Water Supply Replacement or Restoration workgroup and Marcellus Shale Coalition. (6)

Response: The Department acknowledges the comment.

102. **Comment:** It would be appreciated if future Pennsylvania guidelines would be established for injection wells for disposal of waste that took into consideration the differences in injection of

waste over time (years) instead of unconventional wells used for the extraction of gas. Many of my comments will focus more on this specific activity although protection of all water sources is vitally important to all Pennsylvania residents. (5)

Response: The Department acknowledges the comment.

103. **Comment:** Water supplies need to be reviewed and monitored so that any impact is traceable to the source and insufficient evidence is not leaving our citizens without water and forcing them to suffer while trying to prove what happened. Policy and regulations need to be implemented to protect our water sources and citizens from any harm and costly accidental incidents that are beyond their control. It is unacceptable to expect residents to prove what happened when they probably are unaware of what happened or maybe don't realize activities are transpiring that may affect their water supplies. (5)

Response: The Department acknowledges the comment and has supported the development of legislation pertaining to the proper construction, operation and maintenance of private water supplies.

104. **Comment:** The rebuttable presumption of liability on a well operator for the pollution of a water supply is a concern, especially for only 2,500 feet. For example, over time an injection well for the disposal of waste is going to move things below ground in directions no one will know depending on many variables (i.e. faults) as fluid migrates and the potential for impact from fluid migration in Pennsylvania's past history has shown up at least five miles away. The other concern is so many old plugged wells in our area that are potential paths of fluid migration if plugging was completed prior to 1984 regulations. (5)

Response: The Department acknowledges the comment. Underground Injection Control (UIC) Wells are subject to the requirements in Section 3218 of the 2012 Oil and Gas Act and are considered conventional wells. Therefore, presumption for conventional oil and gas wells applies to UIC Wells. The Environmental Quality Board does not have regulatory authority to expand the scope of the statutory presumption.

105. **Comment:** Water testing should always be fully comprehensive, especially in the case of injection wells for disposal of waste. Full water testing needs to be done of any and all contaminants with no exceptions. Monitoring should be happening constantly for Pennsylvania residents' protection. Consideration needs to be given to the knowledge that many residents are unable to afford regular water tests of private water supplies that are comprehensive. Placing the burden of proof on these residents is also an unreasonable expectation. It is appreciated that long term costs of remediation are addressed and now we just need to address more preventative measures for future protection of water supplies. (5)

Response: The Department acknowledges the comment. Underground Injection Control (UIC) Wells are subject to the requirements in Section 3218 of the 2012 Oil and Gas Act, Protection of water supplies. UIC wells are considered conventional wells and are regulated 25 Pa. Code Chapter 78. This policy does not explicitly apply to UIC wells since its scope pertains to unconventional wells.