

PLEASE NOTE THAT ALL USES OF THE WORD OPERATOR IN THIS DOCUMENT REFER TO THE ACT 13 DEFINITION OF "WELL OPERATOR" AND THUS, REFERENCE THE PERMIT HOLDER (PERMITEE) FOR THE WELL. ANY ENFORCEMENT ACTIONS UNDER 25 PA. CODE SECTION 78.88 WILL BE PURSUED AGAINST THE WELL OPERATOR.

1. UPDATE 12/12/2014: What wells are regulated under the MIA Program? Must they be drilled, stimulated, and completed? Must they be in production?

The MIA Program applies to all operating wells in Pennsylvania. Operating wells include active wells and abandoned wells that have not been plugged. Exemptions apply to gas storage field wells, wells granted inactive status, and any wells regulated under the EPA's Underground Injection Control (UIC) Program, as these wells must comply with other regulations addressing mechanical integrity. An active operating well is any well that has been drilled to the total measured depth and is not plugged and abandoned.

2. UPDATE 12/12/2014: After a well has been drilled to the total measured depth, when must the operator or designee conduct the first inspection? What about wells that are drilled to the total measured depth near the end of the quarter – must they still be inspected during that quarter?

The first inspection must be performed during the first full quarter after the well has been drilled to the total measured depth.

3. UPDATE 11/5/2013: What does the Department mean when it states that retrofitting wells will not be required to achieve compliance?

Many wells do not have access to certain annular spaces at the surface – these casing strings may be under gravel in well cellars or below grade in wells that are not designed with cellars. In addition, production casing annular spaces or primary/annular production casing may not be equipped with gauges and manometers for measuring pressure and flow, respectively. The Department is not requiring that casing strings below grade be dug out or that wells be equipped with gauges and manometers to complete inspections under the MIA Program. For wells where certain parameters cannot be measured based on the existing surface configuration, only those components of the inspection that can be completed must be completed. All wells where drilling commenced after February 5, 2011 must be capable of complying with the minimum inspection components required under Section 78.88.

4. If escaping gas is noted from an annular space that is not under the wellhead and a bubble count is performed to quantify the volume of leaking gas, should the number of bubbles counted be provided under cell/box **15**?

The regulation requires either a "Measurement" or "Best Estimate" of escaping gas in situations such as this and that estimate must be provided in standard cubic feet per day (scfpd). In this case it is recommended that a comment be entered indicating how the estimate was

determined. The method used to estimate the gas flow should be applied consistently during each quarterly inspection unless the well is eventually retrofitted to provide a more precise measurement or estimate.

5. If an operator or designee chooses to shut-in the production annulus every quarter and report a pressure, is there a recommended duration for the shut-in test?

There is no recommended shut-in time for wells assessed in this manner. However, the duration of the shut-in test performed on an individual well should remain consistent from quarter-to-quarter.

6. UPDATE 12/12/2014: If a well is plugged during a quarter, must the operator or designee still provide inspection data for the quarter during which the well was plugged?

Inspection results are not required during the quarter in which an operating well is plugged and abandoned in accordance with Chapter 78. The plugging certificate verifies completion of this work and must be on file with the Department. Please note that inspection results are still required for the quarters preceding plugging. The last quarter of inspection data prior to plugging should be reported to the Department for conventional well sites.

7. UPDATE 11/5/13: If a well that previously produced annular gas is modified in such a way that the annulus is no longer physically tied to production, can you just select the button labeled “No” in cell/box **7**?

For cases such as these, enter either ‘0’ or, if that annulus is gauged and shut-in, enter the actual gauge pressure in cell/box **13b** for the remaining inspections during that year and add a comment noting the change in operation. During the following year, use the “RESET” function to set up the well so that it no longer includes annular production. Any cases where a well undergoes a significant modification related to construction or operation (cells/boxes **4a** through **10**) should be handled in a similar manner.

If the annulus remains physically tied to production, but is no longer produced because the gas-bearing zone is mostly depleted, continue to enter the shut-in gauge pressure in cell/box **13b**.

8. What is meant by “profiling” a well inventory?

Some operators, especially those with very large well inventories, may already have software available for conducting routine well inspections. These operators may wish to categorize their inventories by well design, e.g., 3-string gas well, 2-string gas well, single-string oil well, etc. and then use Form A to determine what inspection elements are required for each well category or type. This process is called profiling. Operators can next use their existing software to extract the required inspection elements for the MIA Program and submit them to the Department using Form B or a properly formatted Excel spreadsheet.

9. What is meant by “customizing” Form B?

“Customizing” Form B means that operators or designees may gray-out or shade cells/boxes pertaining to inspection items that are not required for the well design under consideration. For example, if Form A is used to “profile” a well inventory and only three annular spaces must be monitored for escaping gas and flowing liquids, the other annular spaces available on Form B may be shaded as a reminder that no information is needed in those locations on the form. Columns and rows in Form B should NEVER be deleted, as doing so will generate errors in the annual reporting format.

10. What about wells in which gas does not naturally flow, such as wells on a vacuum system that may have negative primary production pressures?

A value of “0” should be entered for the wellhead pressure requirement in cell/box **13a** or **13b**. It is recommended in this situation that a comment be added to indicate that the gas is produced using a vacuum system.

11. UPDATE 12/12/2014: Is it possible to pull this information from the production data prior to January 1, 2014 to provide operators with a list of wells where inspections are required and what must be evaluated? Can an XML form or other formats be provided to the operators or used by operators to collect the required well information and required inspection data?

Operators can obtain a summary of wells that are currently listed in their inventory by accessing the Department’s website and selecting “Oil and Gas Reports” from the left side menu. Next, select the “SPUD Data Report”. Finally, enter “01/01/1800” for the SPUD begin date and the current date for the SPUD end date. Be sure to select the correct operator from the drop down box and press the “View Report” button on the right side of the heading area. This will generate a list of all active wells that are included in an operator’s inventory.

The Department has developed a process flowchart guide that details the logic associated with the computer coding in Form A and also has provided a report template with information on data configuration and formatting for operators who prefer to modify their own software to implement this program and ensure that properly formatted data are submitted by the reporting deadline.

12. UPDATE 11/5/13: What is the policy for reporting pressures instead of flow rates for outer casing strings?

The only provision for reporting annular pressures in the current regulation is associated with the production annulus, if it is shut-in. Operators who have outer casing strings under the wellhead and keep them shut-in do not need to report annular pressures if the valves are functioning properly. If any gas is escaping (venting or leaking) from outer casing strings, a measurement or best estimate of quantity must be provided in accordance with the regulation. As there is no provision for reporting pressures, all outer casing strings must be assessed in the state under which they are routinely maintained (shut-in or vented).

13. Will reporting extensions be granted to operators due to the final form being unavailable until the last day of the third (3<sup>rd</sup>) quarter of 2013 and the significant amount of data input necessary on the leading edge of the MIA Program's implementation?

The Department recognizes that it may be difficult to compile well construction information, in particular for older wells. A portion of this information may simply not exist. The Department also recognizes that it may be challenging to complete some inspection elements, especially if the required equipment and supplies are not yet available for well tenders. For these reasons, inspections must start during the fourth (4<sup>th</sup>) quarter of 2013, but only those inspections conducted during the first (1<sup>st</sup>) quarter of 2014 and beyond need to be submitted to the Department. All operating wells must be inspected during every quarter of 2014 and the first annual inspection report is not due until February 15, 2015, although the Department is seeking to work with individual companies prior to that date to assist with development of the reporting website.

To facilitate implementation, the Department strongly recommends that operators begin gathering well construction information as early as possible during the fourth (4<sup>th</sup>) quarter of 2013. When necessary, well site visits should be completed to enhance what may be available on well records.

During the first full year of the program (2014), operators should dedicate resources, if they are limited, to wells that have the highest likelihood of revealing mechanical integrity or other safety issues, although all wells should continue to be inspected on a quarterly basis. For inspection components that cannot be completed, documentation should be provided in the comments section of the form.

Finally, the Department has added a button in cell/box **4b** of Form A that establishes minimal inspection components for the first round of inspections completed during the fourth (4<sup>th</sup>) quarter of 2013 and the first (1<sup>st</sup>) quarter of 2014 in situations where well records cannot be acquired and entered in time. Construction details for these wells should be updated, if possible, during inspection year 2014 prior to the February 15, 2015 report submission deadline.

14. Is certification necessary or are there any other requirements for individuals performing well inspections under the MIA Program?

There are no statutory or regulatory requirements necessitating certification, nor are there any plans to require certification in the future. Individuals inspecting wells should be qualified based on their experience in oil and gas field operations.

15. UPDATE 12/12/2014: Almost all oil wells produce some gas and many gas wells produce some oil. What process should operators or designees use to properly classify their wells as either oil, gas, or combination (combo) wells?

The operator or designee should always inspect the well as it is currently being operated, even if it was permitted differently. The definition of *Hydrocarbon Production* in the Form A instructions should also be consulted. Wells that produce minor amounts of a secondary hydrocarbon (either oil or gas) in addition to the primary hydrocarbon that is produced, in particular when the minor component is either disposed of, vented, or sold infrequently, i.e., once every several years; should NOT be categorized as combination (combo) wells. Finally, wells that produce condensate, i.e., natural gas liquids, in addition to a lighter gas fraction, should be classified as gas wells.

16. UPDATE 11/5/13: What if the production annulus supplies house gas to a line with a very low pressure (2 oz. line pressure) but is not equipped to measure the flowing pressure associated with the producing formation?

For wells where drilling commenced prior to February 5, 2011, if there is no way to report the flowing or shut-in pressure for any produced gas without retrofitting the well, the operator or designee may report "0" in cell/box **13a** or **13b**. A comment should be entered in cell/box **20** indicating that the well is not equipped to measure wellhead pressure. The operator is not required to retrofit the well with a pressure gauge in this situation.

17. Can the average pumping time between quarterly inspections in cell/box **13f** instead be reported in barrels if an operator or designee tracks produced fluid volumes?

If the operator or designee normally tracks produced fluid in barrels, it is acceptable to report it this way on the form.

18. UPDATED 12/12/14: Will the data summary sheet be submitted to the Department to meet the annual reporting requirements of the regulation?

Based on recent updates to Mechanical Integrity Testing program by the Department's Bureau of Information Technology, only one data summary sheet can be submitted per Operator (OGO number). The single data summary sheet can be submitted through the PADEP GreenPort website beginning on January 1, 2015. If multiple Form As were used to assemble integrity data, the results should all be transferred to a single data summary sheet.

19. How should coalbed methane access holes be handled? What about gob wells?

Coalbed methane and gob wells should both be classified as gas wells. Access hole inspections are not required under the MIA Program, but any integrity concerns associated with the access hole should be addressed by the operator or designee.

20. How should wells without API numbers be handled?

All wells requiring inspections under the MIA Program have assigned API numbers.

21. UPDATE 11/5/13: How should wells equipped with two “tubing” strings be handled? For example, some older gas wells have 4-3/4” surface casing installed to around 1,000 feet, 3” tubing installed to around 1,600 feet on a packer, and 2” tubing installed to around 2,000 feet, which may or may not be set on a packer.

The MIA Program does not contemplate tubing pressures. For this particular design, however, two possible outcomes apply. If the 2” tubing is free hanging, the 3” tubing would actually be considered production casing and the primary production gas pressure under cell/box **13a** should be measured inside of the 3” tubing and outside of the 2” tubing. If the produced zone is isolated with a packer on the 2” tubing, the 2” tubing would actually be considered a production casing string and the pressure under cell/box **13a** should be measured inside the 2” string. In this case, the 2” by 3” annulus would be considered the production annulus assessed under cell/box **14**.

22. UPDATE 11/5/13: How should gas wells equipped with a single casing string (water string) and tubing set on a packer at the same depth as the water string be handled, in particular if the water string is not equipped with a pressure gauge?

The MIA Program does not contemplate tubing pressures. For this particular design, however, the tubing is effectively serving as production casing, as it is isolating the next outer casing string – the water string – from production-zone pressures and fluids. The well should be classified as having freshwater casing only under cell/box **6** and under cell/box **9**, a “2” should be entered. The primary production pressure inside the tubing should be entered in cell/box **13a**. If the tubing annulus is shut-in, the pressure should be reported as “0” in cell/box **14c**, as no gauge is present and retrofitting is not required. A comment should be provided indicating that the primary production string annulus is not equipped with a pressure gauge. If this annulus is open and venting, a best estimate of quantity must be entered in cell/box **14b** if any escaping gas is observed.

23. UPDATE 11/5/13: How should gas wells equipped with a single casing string and cemented-in tubing be handled?

The MIA Program does not contemplate tubing pressures. However, for this particular design, the well tubing is actually serving as production casing and the primary production gas pressure under cell/box **13a** should be measured inside of the tubing. The annulus outside of the tubing and inside of the water string is considered the production annulus, and the relevant inspection components must be entered under cell/box **14**. The only exception to this would be instances where that annulus is produced, in which case the relevant inspection components must be entered under cell/box **13b**.

Generally speaking, any time “tubing” serves to isolate the next outer casing string from gas-production pressures or fluid, it is serving as the primary production casing and should be inspected as such. This is typically accomplished by setting the tubing on a packer and/or cementing it in place. Tubing is not serving as production casing in instances where it is hung or suspended inside of another perforated casing string, even if it anchored inside of the perforated casing string using a packer.

24. UPDATE 11/5/13: How should gas vented inside of the primary production casing string at oil wells be handled? This is a common practice that permits oil to flow into the wellbore at older oil wells.

Any venting gas inside of a primary production string should be recorded by placing a “Y” in cell/box **15m** of Form A. The quantity of gas venting should be estimated and recorded under cell/box **20**.

25. UPDATE 12/12/14: How should operators or designees efficiently consolidate annual report information for submittal to the Department? Some operators would like to dedicate a single “Form A” to each well pad, but for operators that have hundreds of well pads, this either means taking the time to merge all of the data from each pad into one spreadsheet or submitting 100+ reports each year.

The Department’s Bureau of Information Technology has updated how data will be processed in the Mechanical Integrity Testing program. It shall be noted that the only **one** data summary sheet can be submitted per Operator (OGO number). The single data summary sheet can be submitted through the Department’s GreenPort website beginning on January 1, 2015. If multiple Form A’s were used to assemble integrity data, the results should all be transferred to a single data summary sheet.

The Department encourages operators interested in assimilating the MIA Program requirements into their own processes electronically to discuss the details of the program with their information technology staff in order to develop the most efficient solutions for collecting, reporting, and managing data in house. There are computer codes that can be constructed in Visual Basic to combine data from multiple spreadsheets into a single spreadsheet automatically, although some of this coding may take time to develop and often relies on the use of consistent naming conventions for individual spreadsheets. For this reason, it is important to plan long term data management as early on in the process as possible. There are also DOS-prompt commands that can be executed to merge Excel files that are converted to a CSV format. Finally, the Department has developed a process flowchart guide detailing the computer coding used in Form A. This guide may be useful for operators who want to develop their own mechanisms for collecting, reporting, and managing data.

26. NEW 11/5/13: In certain situations, annular spaces outside of the intermediate casing and surface casing may be plumbed to tanks to prevent surface spills and conduct any leaking gas away from the wellhead. Is the operator or designee required to provide a measurement or best estimate of quantity for these annular spaces?

Per the requirement under Section 78.88(b)(3), an operator must determine if gas is escaping from the annular space plumbed to the tank and provide a best estimate or quantity of escaping (leaking or venting) gas for each annular space. If the well is not equipped with the in-line equipment to permit a measurement for the annular space, the tank vent stack may be inspected for methane emissions and if they are present, a "Y" must be entered in cell/box **15m**. The quantity of gas venting from the tank should be estimated and placed under cell/box **20**. If multiple annular spaces and/or wells are plumbed to a single tank, this should also be indicated under cell/box **20**.

27. NEW 11/5/13: If escaping gas associated with annular spaces is directed away from the wellhead by using a vent stack or plumbing the annular spaces to a tank, must the operator or designee still conduct the inspection under cell/box **18**?

The operator or designee is still required to conduct the wellhead/well cellar perimeter inspection to ensure safe venting in this situation. This inspection confirms that any of the piping and other equipment being used to redirect the gas away from the wellhead is functioning properly and free from leaks.

28. NEW 11/5/13: Is an operator permitted to produce annular gas flowing through cement? This includes producing annular gas to operate equipment in the vicinity of the wellhead as indicated in the "Instructions for Quarterly Mechanical Integrity Assessment of Operating Oil and Gas Wells – Form A."

There is currently nothing in the existing regulations and statutes that prevents an operator from producing annular gas that is flowing through cement. In this case, the flowing or shut-in

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pressure associated with the annular gas must be reported quarterly under cell/box **13b** per the requirements of Section 78.88(b)(1).

29. NEW 12/12/14: Can an operator or designee report part of their well inventory on Form A or Form B and the rest of their well inventory on Form C?

You may use either Form A, Form B, or Form C; but you MAY NOT use combinations of these forms.