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REGULATIONS COMPILER

ENERGY AND ENVIRONMENT CABINET

Department for Natural Resources

Division of Oil and Gas

(Amended After Comments)

805 KAR 1:060. Plugging wells.

RELATES TO: KRS 211.892, 211.893, 353.120, 353.170, 353.180(1), 353.550, 353.990

STATUTORY AUTHORITY: KRS 353.560(1), 353.739

NECESSITY, FUNCTION, AND CONFORMITY: KRS 353.560(1) requires the department to promulgate administrative regulations to regulate the plugging of all wells. This administrative regulation establishes the minimum acceptable requirements to plug or temporarily abandon wells.

Section 1. [~~Definitions.~~

~~(1) "Abandoned" is defined by KRS 353.510(12).~~

~~(2) "Cement" is defined by KRS 353.010(4).~~

~~(3) "Pool" is defined by KRS 353.510(9).~~

~~(4) "TENORM" is defined by KRS 211.862(13), and is subject to the exemption established in KRS 211.863(5).~~

~~(5) "Unit" is defined by KRS 353.010(18).~~

~~(6) "Well" is defined by KRS 353.510(14).~~

1 ~~Section 2.~~] Temporary Abandonment Permit. (1) An owner or operator shall not leave a well
2 drilled for oil, gas, salt water disposal, or any other purpose in connection with the production of oil
3 and gas unplugged after the well is no longer used for the purpose it was drilled or converted.
4 (2) An owner or operator who wants to temporarily abandon a well shall apply for a permit
5 from the division on the Temporary Abandonment Permit form OG-12 [~~ED-12~~].
6 (3)(a) Nothing herein shall prevent the division, upon application and for good cause shown,
7 from issuing a temporary abandonment permit[~~,~~] for a period not to exceed two (2) years. Nothing
8 shall alter the provisions of KRS 353.170 relative to utilizing a well for the purpose of introducing
9 air, gas, water, or other liquid pressure into or upon the producing strata for the purpose of recovering
10 oil and gas. The temporary abandonment permit may be renewed on or before the expiration of the
11 two (2) year period. To renew, the permittee shall reapply on the Temporary Abandonment Permit
12 form OG-12 [~~ED-12~~].
13 (b) All wells on which a temporary abandonment permit has been issued shall be cased and
14 capped prior to temporary abandonment in a manner to protect all potential oil, gas, and fresh water
15 zones.
16 (4) Each oil and gas well drilled through coal bearing strata shall be cased and vented to
17 prevent the accumulation of gas in the casing annulus or bore hole.
18 (5) Pursuant to KRS 353.739, the division shall order a well drilled through a workable coal
19 bed to be plugged and abandoned if:
20 (a) The well's permit conditions cannot be satisfied by remediation; or
21 (b) The operator is not able to comply with the ordered remediation.
22 (6) If a well is ordered plugged and abandoned pursuant to KRS 353.739, then a temporary
23 abandonment permit shall not be granted.

Section 2[~~3~~]. Notice for Plugging an Oil or Gas Well. (1)(a) Before work is commenced to plug and abandon a well, the owner or operator shall give notice to the division of the intention to abandon the well.

(b) A representative of the division shall provide plugging and abandonment direction and may be present at the time of plugging the well.

(2) The notice for plugging **a well** [~~wells~~] shall include at a minimum:

(a) The permit number of the well;

(b) The location of the well; and

(c) A fixed time when the work of plugging and filling will be commenced. The time shall not [~~to~~] be less than five (5) days after the day on which the notice is received by the division.

(3)(a) In addition to the requirements of subsection (2) of this section, an operator of a well drilled through a workable coal bed shall notify, by certified mail, the owners of record, lessee of record, and operators of the coal bed and the proper oil and gas inspector of the intention to plug and abandon the well.

(b) A representative of the coal operator or owner may be present at the plugging and filling of the well.

Section 3[4]. Plugging an Oil and Gas Well in Non-coal Bearing Strata. A well drilled through non-coal bearing strata shall be plugged as established in subsections (1) through (6) of this section.

(1) The bottom of the hole shall be filled to the top of each producing formation, or a bridge shall be placed at the top of each producing formation, and in either event a cement plug not less than fifteen (15) feet in length shall be placed immediately above each producing formation if possible.

(2) A cement plug not less than fifteen (15) feet in length shall be placed immediately below all fresh water bearing strata.

(3)(a) A surface cement plug not less than fifteen (15) feet in length shall be placed at the top of the well and cemented to surface.

(b) The casing shall be cut off three (3) feet below surface so as not to interfere with soil cultivation.

(4) An uncased rotary hole drilled with the aid of liquid shall be plugged with heavy mud, approved pursuant to 805 KAR 1:020, Section 1(1)(c) [~~805 KAR 1:020, Section 2(1)(e)~~], up to the base of the surface string at which point a plug of not less than fifteen (15) feet of cement shall be placed. The hole shall be capped similar to other abandoned holes.

(5) Any well in which casing has been cemented from surface to total depth and casing cannot be pulled may be plugged as established in paragraphs (a) and (b) of this subsection.

(a) The bottom of the hole shall be filled to the top of the producing formation and a cement plug not less than fifteen (15) feet in length shall be placed above this fill.

(b) A surface plug shall be placed as established in subsection (3) of this section. An intermediate plug shall not be required.

(6) The operator shall have the option as to the method of placing cement in the hole by:

(a) Dump bailer;

(b) Pumping through tubing; or

(c) Other method approved by the director to accommodate unforeseen well conditions.

(7) Within thirty (30) days after the plugging of a well has been completed, the owner or operator shall file with the division a completed and notarized [~~an~~] Affidavit to Time and Manner of Plugging and Filling Well, Form OG-38 [~~ED-38~~].

Section 4[~~5~~]. Plugging an Oil and Gas Well in Coal-bearing Strata. Each well drilled through a workable coal bed, including for the extraction of coal bed methane, shall be plugged and abandoned as established in subsections (1) through (7) of this section. (1) A cement plug shall be placed to a point forty (40) feet below the lowest workable coal bed.

(a) The hole shall be filled with cement from the bottom to a point twenty (20) feet above the top of the lowest oil, gas, or water-bearing strata; or

(b) A permanent bridge shall be anchored thirty (30) feet below its lowest oil, gas, or water-bearing strata, and from the bridge it shall be filled with cement to a point twenty (20) feet above the strata.

(2) Following compliance with the requirements of subsection (1)(a) or (b) of this section a cement plug shall be used to completely seal the hole.

(3)(a) Between the sealing plug referenced in subsection (2) and a point twenty (20) feet above the next higher oil, gas, or water-bearing strata, the hole shall be plugged in accordance with subsections (1) and (2) of this section.

(b) Another cement plug shall be installed above this oil, gas, or water-bearing strata in accordance with subsection (2) of this section.

(4) In accordance with subsection (1) through (3) of this section, the hole shall be filled and plugged or bridged, filled, and plugged, in each of its oil, gas, or water-bearing strata. If these strata are not widely separated and are free from water, the strata may be grouped and treated as a single productive stratum.

(5) After plugging all strata, a final surface plug shall be anchored approximately ten (10) feet below the bottom of the largest casing in the well and from that point to the surface, the well shall be filled with cement.

(6) The operator shall place cement in the hole in one of the following ways:

(a) Dump bailer;

(b) Pumping through tubing; or

(c) A method approved by the director to accommodate unforeseen well conditions.

(7) Within thirty (30) days after the plugging of a well has been completed, the owner or operator shall file with the division an Affidavit to Time and Manner of Plugging and Filling Well, Form OG-38 [~~ED-38~~].

(8) If any of the strata in the well have been completed or stimulated, creating cavities that cannot readily be filled in the manner established in subsections (1) through (7) of this section, the well operator shall follow either of the methods established in paragraphs (a) or (b) of this subsection.

(a) If the stratum that has been completed or stimulated is the lowest one in the well, there shall be placed, at the nearest suitable point but not less than twenty (20) feet above the stratum, a plug of cement or other suitable material that shall completely seal the hole; but if the completion or stimulation has been done above one (1) or more oil or gas-bearing strata in the well, plugging in the manner established shall be done at the nearest suitable point, but not less than twenty (20) feet below and above the stratum completed or stimulated.

(b) If the cavity is in the lowest oil or gas-bearing stratum in the well, a liner shall be placed that shall extend from below the stratum to a suitable point, but not less than twenty (20) feet above the stratum in which the completion or stimulation has been done; but if the completion or stimulation has been done above one (1) or more oil or gas-bearing strata in the well, the liner shall be placed so that it shall extend not less than twenty (20) feet above or less than twenty (20) feet below the stratum in which completion or stimulation has been done. After the liner is placed, it shall be compactly filled with cement, clay, or other nonporous sealing material.

1 (9)(a) Once a well drilled through coal-bearing strata has been filled and securely plugged to
2 a point forty (40) feet below the lowest workable coal bed, and in the judgment of the well operator,
3 the coal operator, and the division, a permanent outlet to the surface is required, the outlet shall be
4 provided as established in subparagraphs 1. through 3. of this paragraph.

5 1. A plug of cement shall be placed in the well at a depth[;] not less than ten (10) feet below
6 the lowest workable coal bed. In this plug and passing through the center of it shall be securely
7 fastened an open pipe, not less than two (2) inches in diameter, which shall extend to the surface.

8 2. At or above the surface, the pipe shall be provided with a device that shall permit the free
9 passage of gas and prevent obstruction.

10 3. After the plug and pipe are set, the hole shall be filled with cement to a point ten (10) feet
11 above the lowest workable coal bed.

12 (b)1. If there are additional overlying workable coal beds, they shall be treated similarly, if
13 this treatment is necessary in the reasonable judgment of the well operator, the coal operator, and the
14 division.

15 2. If the parties cannot agree, the decision of the division shall control.

16 Section 5[6]. Oil and Gas Wells used as Fresh Water Wells. (1) If a well drilled through
17 noncoal-bearing strata is to be plugged and can safely be used as a fresh water well, and if the
18 utilization is desired by the landowner, the well need not be filled above the required sealing plug
19 set below fresh water. A written authority for the use shall be secured from the landowner and filed
20 with the division.

21 (2)(a) If the well to be plugged is drilled through coal-bearing strata and can safely be used
22 for a fresh water well, and the utilization is desired by the landowner and is agreeable to the owner
23 or operator of all coal-bearing strata beneath the location of the well, the well shall not be filled

1 above the required sealing plug set below fresh water. A written authority for the use shall be secured
2 from the landowner, and coal owner or operator, and filed with the division.
3 (b) In order for the operator to be released of any further plugging responsibility, the operator
4 shall provide to the division evidence of compliance with the domestic water well construction
5 requirements pursuant to 401 KAR 6:310 as administered by the Department for Environmental
6 Protection.
7 Section 6[~~7~~]. Downhole Disposal of TENORM Contaminated Material. (1) On-site
8 downhole disposal of tubular goods, sludge, and scale containing TENORM shall be allowed by the
9 Division of Oil and Gas in combination with plugging and abandonment of an oil or gas production
10 well if an inspector from the Division of Oil and Gas is present for the duration of the disposal and
11 plugging activity and the standards established in paragraphs (a) through (g) of this subsection are
12 met.
13 (a) The operator shall certify that the owner of the oil and gas rights covering the depths and
14 formations where the TENORM waste is proposed to be disposed has consented, by lease or other
15 document, to allow the on-site disposal of TENORM waste.
16 (b) The TENORM waste shall be limited to that generated at the lease, pool, or unit where
17 disposal is proposed.
18 (c) The TENORM waste shall be placed in the well at a depth of at least 200 feet below the
19 base of the deepest encountered underground source of drinking water with a total dissolved solids
20 concentration of 10,000 ppm or less.
21 (d) The TENORM waste shall be placed in the well in a manner approved by the division to
22 ensure proper placement and containment.

(e) A cement plug shall be placed below the TENORM waste, isolating the waste from any producing formation and preventing migration of TENORM waste below the disposal interval. The well shall be cemented from above the TENORM waste to the top of the well.

(f) The cement of the surface plug shall be color dyed with red iron oxide.

(g) A permanent marker that shows the three (3) bladed radiation symbol shall be placed at the top of the surface cement plug or welded to a steel plate at the top of the well casing at ground level.

(2) The operator shall apply to dispose of TENORM downhole, on Application for Authorization for Down-hole Disposal of TENORM Materials in Well Plugging and Abandonment Operations, form ED-39, which shall, at a minimum, contain:

(a) A description of the type of TENORM waste disposed;

(b) The approximate volume of each type of waste disposed;

(c) Results of activity concentration analysis of combined Ra-226 and Ra-228 in picocuries per gram (pCi/g) or radiation exposure or dose rate measured through the use of portable radiation detector appropriate for the radiation being measured, calibrated at least annually, and reported in microroentgen per hour (μR/hr) or microrem per hour (μrem/hr);

(d) The name, permit number, and GPS location of the well to be plugged in which TENORM waste is proposed to be disposed; and

(e) The formation or formations from which the TENORM waste originated.

(3) A copy of the Application for Authorization for Down-hole Disposal of TENORM Materials in Well Plugging and Abandonment Operations, form ED-39 shall be provided to the Cabinet for Health and Family Services, Radiation Control Branch, the owner of the oil and gas

1 rights covering the depths and formations where the TENORM waste is proposed to be disposed,
2 and to the owner of the surface estate at the time of filing of the application with the division.
3 (4) The division shall review the Application for Authorization for Down-hole Disposal of
4 TENORM Materials in Well Plugging and Abandonment Operations, form ED-39 for completeness
5 and for compliance with the information in subsection (2) of this section in order to prevent migration
6 of TENORM contaminated wastes from the borehole.
7 (5) The division shall provide written notice to the applicant of its approval or denial of the
8 application. If the application is denied, the division shall notify the applicant in writing of the
9 additional information necessary to satisfy the requirements of this section.
10 Section 7[8]. If a person fails to comply with this administrative regulation, any person
11 lawfully in possession of land adjacent to or in the neighborhood of the well may enter on the land
12 upon which the well is located and plug the well in the manner established in KRS 353.180(1) or
13 this administrative regulation, and may maintain a civil action against the owner or person
14 abandoning the well, jointly or severally, to recover the cost of plugging the well. This section shall
15 not apply to persons owning the land on which the well is situated and drilled by other persons.
16 Section 8[9]. Well Plugging Prioritization. The prioritization for reclaiming abandoned
17 storage tanks, properly plugging and abandoning eligible wells, and addressing imminent threats
18 pursuant to KRS 353.562 shall be in accordance with the Kentucky Abandoned Storage Tank and
19 Orphan Well Prioritization Schedule.
20 Section 9. Incorporation by Reference. (1) The following material is incorporated by
21 reference:
22 (a) "Affidavit to Time and Manner of Plugging and Filling Well", Form OG-38, June 2019;
23 [~~ED-38, July 2017,~~]

1 (b) "Temporary Abandonment Permit", Form OG-12, June 2019; [~~ED-12, July 2017; and~~]

2 (c) "Application for Authorization for Down-Hole Disposal of TENORM Materials in Well

3 Plugging and Abandonment Operations", Form ED-39, September 2017; and

4 (d) "Kentucky Abandoned Storage Tank and Orphan Well Prioritization Schedule", June

5 2019.

6 (2) This material may be inspected, copied, or obtained, subject to applicable copyright law,

7 at the Division of Oil and Gas, 300 Sower Boulevard, Frankfort, Kentucky 40601, Monday through

8 Friday, 8 a.m. to 4:30 p.m., **Eastern Prevailing Time**

805 KAR 1:060 approved for filing.
Pages (1-11)

10/14/2019

Date

Charles G. Snavely, Secretary
Energy and Environment Cabinet

REGULATORY IMPACT ANALYSIS AND TIERING STATEMENT

Administrative Regulation No.: 805 KAR 1:060
Contact Person: Michael Mullins

Contact number: (502) 782-6720
Email: michael.mullins@ky.gov

(1) Provide a brief summary of:

(a) What this administrative regulation does: This administrative regulation identifies the minimum acceptable requirements to plug or temporarily abandon wells.

(b) The necessity of this administrative regulation: This administrative regulation is necessary to establish plugging requirements for oil and gas wells.

(c) How this administrative regulation conforms to the content of the authorizing statutes: KRS 353.560 requires the department to regulate the plugging of all wells. This administrative regulation conforms to the authorizing statutes by establishing plugging requirements for oil and gas wells.

(d) How this administrative regulation currently assists or will assist in the effective administration of the statutes: This administrative regulation assists in the effective administration of the statutes by providing oil and gas operators the necessary information to meet the division's plugging requirements.

(2) If this is an amendment to an existing administrative regulation, provide a brief summary of:

(a) How the amendment will change this existing administrative regulation: This amendment will incorporate by reference a document detailing the method the division intends to prioritize orphan wells and abandoned storage tanks for the Kentucky Abandoned Storage Tank and Orphan Well (KASTOW) fund. The amendment made in response to comment simply changes the term "wells" to "a well" in order to clarify that a notice must include, if more than one well is proposed for plugging, the permit number, location, and fixed time for commencement for each well. The administrative regulation is also amended to insert "eastern Prevailing Time" into the incorporation by reference section.

(b) The necessity of the amendment to this administrative regulation: This amendment is necessary to incorporate by reference the division's prioritization schedule for the KASTOW fund. The amendment in response to comment was necessary to ensure that it was clear that notices for plugging included the required information for each well if more than one well is proposed to be plugged and also to clarify that the time for copying material incorporated by reference is "Eastern Prevailing Time".

(c) How the amendment conforms to the content of the authorizing statutes: KRS 353.560 requires the department to regulate the plugging of all wells. This

amendment will prioritize those orphan wells and abandoned storage tanks for the KASTOW fund. The amendment in response to comment conforms to the authorizing statute by clarifying the intent of the administrative regulation related to notices prior to plugging a well.

(d) How the amendment will assist in the effective administration of statutes: These amendments assist in the effective administration of KRS 353.560 by establishing a prioritization schedule that will rank the order in which the division will address orphan wells and abandoned storage tanks based on criteria in the document incorporated by reference. The amendment made in response to comment assists in the effective administration of the statutes by clarifying the plugging notice for plugging more than one well shall include the required information for each well and clarifying how the Division's office hours are to be interpreted.

(3) List the type and number of individuals, businesses, organizations, or state and local governments affected by this administrative regulation. There are approximately 1,060 active oil and gas operators in the commonwealth

(4) Provide an analysis of how the entities identified in question (3) will be impacted by either the implementation of this administrative regulation, if new, or by the change, if it is an amendment, including:

(a) List the actions that each of the regulated entities identified in question (3) will have to take to comply with this administrative regulation or amendment: The regulated entities identified in question (3) not be directly impacted by this amendment. The document will only address those wells and abandoned storage tanks that do not have a responsible party associated with them. Therefore, no action is necessary on the part of the regulated entity. The amendment in response to comment will require the entities to provide the required notice information for each well when plugging is intended. The entities will also need to be aware that the Division's listed hours of operation in the material incorporated by reference section are Eastern Prevailing Time.

(b) In complying with this administrative regulation or amendment, how much will it cost each of the entities identified in question (3): There will be no additional costs to the regulated entity for plugging orphan wells and abandoned storage tanks.

(c) As a result of compliance, what benefits will accrue to the entities identified in question (3): As a result of compliance, entities will benefit from the amendment by having an established cleanup program that will address these orphan wells and abandoned storage tanks. The entities will benefit from the amendments made in response to comment by having clear direction when providing notice when plugging multiple wells.

(5) Provide an estimate of how much it will cost to implement this administrative regulation:

(a) Initially: The division may see a slight increase in the costs associated with running the KASTOW program. However, at this time is difficult to predict the actual cost.

(b) On a continuing basis: The division may see a slight increase in the costs for the implementation of this administrative regulation on a continuing basis.

(6) What is the source of the funding to be used for the implementation and enforcement of this administrative regulation: This program will be funded by the KASTOW fund. Any administrative costs that are associated with running the program are eligible to be charged to the fund.

(7) Provide an assessment of whether an increase in fees or funding will be necessary to implement this administrative regulation, if new, or by the change if it is an amendment. An increase in fees will not be required to implement this program. However, the department will be seeking additional funding for the KASTOW fund to address these sites in future budget requests.

(8) State whether or not this administrative regulation establishes any fees or directly or indirectly increases any fees. This administrative regulation does not establish any fees, nor does it directly or indirectly increase any fees.

(9) TIERING: Is tiering applied? (Explain why tiering was or was not used.)
A tiering structure is used when determining which orphan well or abandoned storage tank will be addressed by the KASTOW program. The document incorporated by reference will clearly establish how this will occur.

FISCAL NOTE ON STATE AND LOCAL GOVERNMENT

Administrative Regulation No.: 805 KAR 1:060 Contact number: (502) 782-6720
Contact Person: Michael Mullins Email: michael.mullins@ky.gov

1. What units, parts or divisions of state or local government (including cities, counties, fire departments, or school districts) will be impacted by this administrative regulation?
This administrative regulation applies to the Division of Oil and Gas.

2. Identify each state or federal statute or federal regulation that requires or authorizes action taken by the administrative regulation. KRS 353.560, 353.562, 353.563, 353.564, and 353.739.

3. Estimate the effect of this administrative regulation on the expenditures and revenues of a state or local government agency (including cities, counties, fire departments, or school districts) for the first full year the regulation is to be in effect.
   (a) How much revenue will this administrative regulation generate for the state or local government (including cities, counties, fire departments, or school districts) for the first year? The proposed administrative regulation will not generate revenue in the first year.

   (b) How much revenue will this administrative regulation generate for the state or local government (including cities, counties, fire departments, or school districts) for subsequent years? The proposed administrative regulation will not generate revenue in subsequent years.

   (c) How much will it cost to administer this program for the first year? The cabinet's budget will receive a transfer of funds to accomplish the goals of the KASTOW program in the first year.

   (d) How much will it cost to administer this program for subsequent years? The cabinet's operating budget will continue to need budget appropriations in future budget cycles.

Note: If specific dollar estimates cannot be determined, provide a brief narrative to explain the fiscal impacts of the administrative regulation.

Revenues (+/-):	There is no known effect on current revenues.
Expenditures (+/-):	There is no known effect on current expenditures.
Other Explanation:	There is no further explanation.

SUMMARY OF MATERIAL INCORPORATED BY REFERENCE
805 KAR 1:060

This administrative regulation incorporates the following documents:

I. Kentucky Division of Oil and Gas Prioritization Schedule for Orphan Wells and Abandoned Storage Tank Facilities (June 2019) This document details how orphan wells and abandoned storage tanks in the KASTOW program will be prioritized for cleanup. This is new document and consists of 1 page.

II. Affidavit to Time and Manner of Plugging and Filling Well, Form OG-38 (June 2019) This form is provided by well owners or operators to notify the division when a well plugging operation has been completed. This is new document and consists of 2 pages.

III Temporary Abandonment Permit, Form OG-12, (June 2019) This form is provided by well owners or operators when requesting a temporary abandonment permit. This is new document and consists of 1 page.