

805 KAR 1:130. Casing, cementing, plugging, gas detection, and blow-out prevention in oil and gas wells.

RELATES TO: KRS 353.180, 353.510, 353.520, 353.561 – 353.564, 353.590, 353.5901, 353.592, 353.651, 353.652, 353.6601 – 353.6606, 353.730, 353.737, 353.991

STATUTORY AUTHORITY: KRS 353.540, 353.550, 353.560

NECESSITY, FUNCTION, AND CONFORMITY: KRS 353.550 requires the Department for Natural Resources to regulate the drilling and casing of oil or gas wells. This administrative regulation establishes the requirements for the drilling and casing of wells for the purpose of oil or gas extraction.

Section 1. Definitions. (1) "Annulus" means the space between two (2) strings of casing or between a string of casing and the bore hole wall.

(2) "Blow-out preventer" or "BOP" means a device installed on the surface casing, which is the first and largest diameter casing installed in a well with the primary use to make the bore hole stand up and to protect a fresh water zone layer of strata capable of producing or receiving fluids, or installed on the intermediate casing, which is one (1) or more strings of pipes installed in a well in addition to the surface casing in which each string is smaller in diameter than the previous. The device is used to prevent the escape of pressure either in the annulus between casing and drill pipe or in the open hole without drill pipe and that is used during drilling operations.

(3) "Casing" or "casing string" means steel tubes or pipes installed in a well.

(4) "Cement" means hydraulic cement mixed with water or with additives and that is used to fill the annulus of casing string or to plug the well.

(5) "Deep well" is defined by KRS 353.510(16).

(6) "KYEM" means the state Kentucky Emergency Management office under authority of the Department of Military Affairs in Frankfort, Kentucky, with regional offices throughout the Commonwealth.

(7) "Long casing string" means the last casing installed in a well to be used for production or injection purposes.

(8) "Shallow well" is defined by KRS 353.510(15).

Section 2. If an Application for Permit, ED-1, incorporated by reference in 805 KAR 1:140, for a shallow well proposed to be drilled to a depth of less than 4,000 feet or above the base of the lowest member of the Devonian Brown Shale is submitted to the department, the application shall comply with all requirements of 805 KAR 1:020 and shall be exempt from Sections 3 and 4 of this administrative regulation.

Section 3. (1) If an Application for Permit, ED-1, incorporated by reference in 805 KAR 1:140, for a well permit proposed to be drilled below a depth of 4,000 feet or the base of the lowest member of the Devonian Brown Shale, whichever is deeper, is submitted to the department, the operator shall prepare and submit with the permit application a detailed drilling and casing plan on Casing and Cementing Plan, Form ED-7, incorporated by reference in 805 KAR 1:140, for the review by and approval or denial of the department pursuant to this administrative regulation.

(2)(a) This plan shall include a drafted schematic showing the hole size and depth of each casing string.

1. The freshwater string shall be set at least thirty (30) feet below the depth in the approved permit.

2. If fresh water is encountered during drilling operations deeper than the depth in the approved permit, the freshwater casing shall be set at least thirty (30) feet below the actual freshwater depth.

3. A freshwater casing string shall be set and cement circulated to the surface before drilling commences.

(b) The plan shall also include a description of the type, size, and grade of casing to be used and the manner in which the annulus of the casing string and well bore shall be cemented to protect all fresh water, coal, mineral, and oil and gas producing formation in the area proposed for drilling. The volume, class, additives, and weight of the cement to be used shall also be described.

(3) If an open hole packer assembly is included on the long casing string, the number of packers shall be included on the plan.

(4) If drilling fluid is used, it shall comply with 805 KAR 1:020, Section 2(1)(c).

Section 4. (1) The operator shall install a blow-out prevention device capable of:

- (a) Closing the top of the well;
- (b) Controlling the release of fluids;
- (c) Permitting pumping into the well; and
- (d) Allowing movement of the inner string of drill pipe.

(2)(a) The device shall be installed on a shallow well drilled below 4,000 feet or the base of the lowest member of the Devonian Brown Shale, whichever is deeper, capable of withstanding a working pressure of 1,500 psi and a test pressure of 3,000 psi.

(b) The device shall be installed on a deep well and have a minimum working pressure of 3,500 psi and a test pressure of 5,000 psi.

1. A description of this device and its installation shall be included with the drilling and casing plan required in Section 3 of this administrative regulation.

2.a. A test shall be performed to ensure the BOP shall operate at its rated capacity:

- (i) When the device is initially installed;
- (ii) Thirty (30) days after the initial installation;
- (iii) When the operator opens or removes the BOP; and
- (iv) At the request of the cabinet. The results of the test shall be kept at the well site and made available to cabinet personnel upon request.

Section 5. The director shall only waive the requirements for a BOP established in Section 4 of this administrative regulation for a shallow well if the operator submits a written request for the waiver that includes:

- (1) The geologic formations to be drilled through;
- (2) A history of drilling in the vicinity of the proposed well with pressure measurements that show gas pressures were not encountered at levels to require the BOP equipment; and
- (3) The maximum anticipated gas pressure in the proposed well.

Section 6. (1) The operator shall obtain written instructions from the department prior to plugging the well and the department shall approve or deny the commencement of plugging operations.

- (2) Upon the department's request, the operator shall submit:
 - (a) A well log;
 - (b) Completion report; and
 - (c) Geophysical logs used for preparing plugging instructions.

Section 7. (1) The department shall be notified verbally within forty-eight (48) hours of any mechanical failure or other deficiency that may jeopardize the plugging operation or mechanical integrity of the well encountered while conducting any operation or production of a deep well.

(2)(a) KYEM or the department shall be immediately notified if there are any well failures or blow-outs that pose the likelihood of imminent environmental damage or danger to the public.

(b) The operator shall correct deficiencies, such as those established in this section, with due diligence.

Section 8. An operator in noncompliance with the requirements of this administrative regulation shall be subject to penalties pursuant to KRS 353.991. (18 Ky.R. 234; 1022; eff. 9-25-1991; TAm eff. 8-9-2007; 41 Ky.R. 2361; eff. 9-4-2015; Crt eff. 6-27-2018.)