

Kansas Administrative Regulations

Kansas Corporation Commission

Article 3.—Production and Conservation of Oil and Gas

82-3-407. Mechanical integrity requirements; penalty.

(a) Each injection well shall be completed, equipped, operated, and maintained in a manner that will prevent pollution of fresh and usable water, prevent damage to sources of oil or gas, and confine fluids to the interval or intervals approved for injection.

An injection well shall be considered to have mechanical integrity if there are no significant leaks in the tubing, casing, or packer and no fluid movement into fresh or usable water. Mechanical integrity shall be established on each well by one of the following:

(1) Pressure test. The annulus above the packer, or the injection casing in wells not equipped with a packer, shall be pressure tested at least once every five years under the supervision of a representative of the operator. The date for this test shall be mutually agreed upon by the operator's representative and a representative of the commission. Test results shall be verified by the operator's representative. A minimum of 25 percent of the tests conducted each year shall be witnessed by a representative of the commission. The test shall be conducted in accordance with subsection (b). Injection wells within tubing shall be tested in accordance with K.A.R. 82-3-406.

(2) Alternate tests. Alternative test methods approved by the commission, including radioactive tracer surveys and temperature surveys, may be used to establish mechanical integrity if conditions are appropriate. The test shall be run at least once every five years under the supervision of a representative of the operator. The date for this test shall be mutually agreed upon by the operator's representative and a representative of the commission. Test results shall be verified by the operator's representative and shall be interpreted as specified in commission-approved procedures. A minimum of 25 percent of the tests conducted each year shall be witnessed by a representative of the commission.

(3) Monitoring. Once a month, the operator shall monitor and record, during actual injection, the pressure or fluid level in the annulus and any other information deemed necessary by the conservation division. An annual report of information logged shall be submitted to the conservation division in accordance with K.A.R. 82-3-409.

(4) Dually completed injection wells. For dually completed injection wells, the testing requirements shall include the following:

(A) The operator shall determine the fluid level in the annular space in the production casing and the fluid level within the injection tubing. All fluid level determinations shall be performed under static well conditions. The minimum shut-in time shall be 24 hours before determining the fluid level. Fluid level tapes shall be submitted as verification of measurements.

(B) The operator shall measure and report the oil-to-water ratio of produced fluids from the well. In the case of gas wells, the operator shall report changes in monthly production volumes.

(C) The fluid level determination and oil-to-water ratios shall be performed once every three months during the first year of the well's five-year test cycle, and then once a year for the next four years. The repeat test cycle of quarterly reports for one year and annual reports for four years shall begin on the five-year anniversary of the first fluid level test.

(b) Before operating a well drilled or converted to injection after December 8, 1982, an operator choosing to use a pressure test for the initial mechanical integrity test shall perform the test in the following manner:

(1) Wells constructed with tubing and a packer shall be pressure tested with the packer in place. A fluid pressure of 300 psig shall be applied. If the operator requests a pressure in excess of 300 psig on the injection application, a test pressure up to the requested pressure may be required. The duration of the test shall be at least 30 minutes. Maintenance of the fluid pressure during the test shall provide assurance of the integrity of the injection casing.

(2) For wells constructed with tubing and no packer, a retrievable plug or packer shall be set immediately above the uppermost perforation or open hole zone. A fluid pressure of 300 psig shall be applied. The duration of the test shall be at least 30

minutes. Maintenance of the fluid pressure during the test shall provide assurance of the integrity of the injection casing.

(3) For wells constructed with tubing and no packer, a method of pressure testing known as fluid depression may be conducted with prior approval and under guidelines established by the appropriate district office. The fluid in the well shall be depressed with gas pressure to a point in the wellbore immediately above the perforations or open hole interval. The minimum calculated pressure required to depress the fluid in the wellbore shall be no less than 100 psig.

(4) For simultaneous injection wells, the following requirements shall be met:

(A) Mechanical integrity shall initially be demonstrated at a pressure of 300 psig before installation of downhole simultaneous injection equipment and shall be demonstrated in the same manner each time that the downhole simultaneous injection equipment is removed; and

(B) after the initial mechanical integrity test, the operator shall monitor the well once each month and record the oil-to-water or gas-to-water ratio. The operator shall report the oil-to-water or gas-to-water ratio to the commission within 30 days for the first month and then annually at the time of filing the annual report according to K.A.R. 82-3-409. The operator shall immediately report an oil-to-water or gas-to-water ratio at or in excess of 10% over the prior month's ratio to the appropriate district office.

(5) In lieu of paragraph (b)(3), the casing may be tested before perforating, upon approval of the conservation division. A fluid pressure of 300 psig shall be applied. If the operator requests a pressure in excess of 300 psig on the injection application, a test pressure up to the requested pressure may be required. The duration of the test shall be at least 30 minutes. Maintenance of the fluid pressure during the test shall provide assurance of the integrity of the injection casing.

(c) The operator of any well failing to demonstrate mechanical integrity by one of the above methods shall have no more than 90 days from the date of initial failure in which to perform one of the following:

- (1) Repair and retest the well to demonstrate mechanical integrity;
- (2) plug the well; or

(3) isolate the leak or leaks to demonstrate that the well will not pose a threat to fresh or usable water resources or endanger correlative rights.

(d) Mechanical failures or other conditions indicating that a well is not, or may not be, directing the injected fluid into the permitted or authorized zone shall be cause to shut in the well. The operator shall orally notify the conservation division of any of these failures or conditions within 24 hours of knowledge of any failure or condition. The operator shall submit written notice of a well failure to the conservation division within five days of the occurrence together with a plan for testing and repairing the well. Results of the testing and well repair shall be reported to the conservation division, and all information shall be included in the annual monitoring report to the conservation division. Any mechanical downhole well repair performed on the well that was not previously reported shall also be included in the annual report.

(e) If the district office has approved the use of any chemical sealant or other mechanical device to isolate the leak before use, the injection pressure into the well shall not exceed the maximum mechanical integrity test pressure. Additionally, the well shall demonstrate mechanical integrity on an annual basis for the duration the well is completed in this manner.

(f) Each operator choosing a pressure mechanical integrity test on a well permitted for injection before December 8, 1982 or on a well having passed an initial pressure mechanical integrity test as specified in subsection (b) shall conduct the test in the following manner:

(1) Wells located in areas having saltwater-bearing zones with sufficient bottom-hole pressure to sustain a static fluid level at or above fresh or usable water bearing zones shall be pressure tested as specified in paragraphs (b)(1) and (2), except that the maximum required test pressure shall be limited to 300 psi.

(2) Wells located in areas without saltwater-bearing zones with sufficient bottom-hole pressure to sustain a static fluid level at or above fresh or usable water bearing zones shall be pressure tested as specified in paragraphs (b)(1) and (2), except that the maximum required test pressure shall be limited to 100 psi.

(3) For wells constructed with tubing and no packer, a method of pressure testing known as fluid depression may be conducted with prior approval and under guidelines

established by the commission. The fluid in the well shall be depressed with gas pressure to a point in the wellbore immediately above the perforations or open-hole interval. The minimum calculated pressure required to depress the fluid in the wellbore shall be no less than 100 psi unless otherwise approved by the appropriate district office.

(g) No injection well shall be operated before having passed a mechanical integrity test. The operator's failure to test a well to show its mechanical integrity or to report the oil-to-water or gas-to-water ratio as required under paragraph (b)(4)(B) above shall be punishable by a \$1,000 penalty, and these wells shall be shut in until the required test has been passed or the reports have been furnished.

(Authorized by K.S.A. 55-152, K.S.A. 2000 Supp. 55-164, as amended by L. 2001, ch. 5, sec. 191, K.S.A. 55-901, as amended by L. 2001, ch. 5, sec. 198; implementing K.S.A. 55-152, K.S.A. 2000 Supp. 55-164, as amended by L. 2001, ch. 5, sec. 191, K.S.A. 55-901, as amended by L. 2001, ch. 5, sec. 198, and K.S.A. 55-1003; effective, T-83-44, Dec. 8, 1982; effective May 1, 1983; amended, T-87-46, Dec. 19, 1986; amended May 1, 1987; amended May 8, 1989; amended April 23, 1990; amended April 5, 2002.)

***** Authenticated Kansas Administrative Regulation *****