

Kansas Administrative Regulations

Department of Health and Environment

Article 45.—Underground Hydrocarbon Storage Wells and Associated Brine Ponds

28-45-6a. Storage well and cavern permitting requirements.

(a) Each permittee of an existing storage well that is not authorized by a facility permit shall submit a facility permit application within one year of the effective date of this article of the department's regulations.

(b) Each permittee that wants to convert a permitted well to a storage well or to construct and operate a new storage well shall submit a request for a permit modification to the secretary, at least six months before construction begins.

Construction shall not begin until the secretary has issued a permit modification.

(c) Each request for a permit modification for a new storage well and cavern shall include the information specified in K.A.R. 28-45-10a.

(d) Upon review by the secretary of each request, the permittee shall receive one of the following:

(1) A permit modification, if the request is approved; or

(2) a notice that the request has been denied, if the permittee has not met the requirements of this article of the department's regulations.

(e) Each permittee shall submit a drilling report, including a sample log of well cuttings from any new storage well drilled at the facility, within 90 days of drilling completion. The sampling of well cuttings shall meet all of the following requirements:

(1) Well cuttings shall be collected, described, and logged.

(2) A professional geologist or a professional geologist's designee shall supervise the collection of well cuttings.

(3) A professional geologist shall describe and log the well cuttings.

(f) Each permittee shall submit open-hole logs for any new storage well within six months of drilling completion. The logging interval shall be from the surface to 100 feet below the top of the salt section. Each permittee shall submit at least the following logs:

- (1) A gamma ray log;
- (2) a neutron log if the source is registered in Kansas;
- (3) a density log; and
- (4) a caliper log.

(g) Each permittee shall use logs specified in subsection (f), unless authorized by the secretary in writing to use an alternative log. Each permittee shall submit the following information for each log:

- (1) A description of the information that the log provides;
- (2) a description of the field conditions under which the log can be used;
- (3) the procedure for interpretation; and
- (4) an interpretation upon completion.

(h) Each permittee shall submit a written plan for the solution mining of any storage cavern to the secretary for review and consideration for approval, at least 60 days before the solution mining begins. At a minimum, the plan shall include the following information:

- (1) A list of acceptable blanket pad materials; and
- (2) methods for monitoring the solution mining.

(i) Each permittee shall submit the following monitoring records to the secretary monthly, on a form provided by the department:

- (1) The weekly injection and withdrawal volume for each cavern;
- (2) the weekly injection and withdrawal ratio for each cavern; and
- (3) a summary of weekly minimum and maximum injection pressures for each cavern.

(j) Each permittee shall submit annually the information for each solution mining well specified in K.A.R. 28-45-19.

(k) Each permittee shall complete a sonar survey during the solution mining of each storage cavern, as specified in K.A.R. 28-46-30a.

(l) Each permittee shall ensure that the bedded salt, stored product, and substances used in the solution mining of each storage cavern are compatible.

(m) Each permittee of any storage well and cavern shall maintain a salt roof thickness of at least 100 feet. Each permittee of a storage cavern with a salt roof

thickness of less than 100 feet but more than 50 feet shall comply with additional monitoring requirements specified in K.A.R. 28-45-16. Additional information, including a geomechanical study from core analysis, may be requested by the department to verify cavern integrity. Storage caverns with a salt roof thickness of 50 feet or less shall not be allowed, unless authorized by the secretary in writing.

(n) Underground communication between storage caverns shall be prohibited, unless authorized by the secretary in writing.

(o) Each permittee of any storage well and cavern shall maintain at least 100 feet of web thickness between adjacent caverns. Any permittee may request approval from the secretary for continued operation of a storage cavern with a web thickness of more than 50 feet but less than 100 feet, according to the following:

(1) The request shall include justification, including an analysis of the following information:

(A) The ratio of web thickness to maximum diameter;

(B) cavern shape and cavern roof configuration;

(C) cavern shape and volume change over the life of the facility due to brine saturation management or creep; and

(D) operating practices, including maximum and minimum operating pressures, rate of pressure changes, and inventory practices of adjacent caverns.

(2) Web thickness shall be reevaluated every five years as specified in K.A.R. 28-45-16.

(3) Web thickness less than 50 feet shall be prohibited, unless authorized by the secretary in writing.

(4) Additional information, including a geomechanical study from core analysis, may be requested by the secretary.

(p) Each permittee of any storage well and cavern shall ensure that the maximum horizontal diameter of each cavern does not exceed 300 feet, unless authorized by the secretary in writing.

(q) Each permittee shall ensure the mechanical integrity before commissioning any new storage well into service. Operations may begin when the permittee notifies the department of completion of the storage well and each new storage well is inspected by

the department. If the storage well fails the inspection, the permittee shall not begin operations.

(Authorized by and implementing K.S.A. 2022 Supp. 55-1,117; effective, T-28-4-1-03, April 1, 2003; effective Aug. 8, 2003; amended Aug. 9, 2024.)

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