

§ 147.2104

40 CFR Ch. I (7-1-07 Edition)

that the owner or operator of an existing enhanced recovery or hydrocarbon storage well may not be in compliance with the requirement of §§144.28(e) and 146.22, the owner or operator shall when required by the Regional Administrator:

- (1) Protect USDWs by:
 - (i) Cementing surface casing by recirculating the cement to the surface from a point 50 feet below the lowermost USDW; or
 - (ii) Isolating all USDWs by placing cement between the outermost casing and the well bore; and
- (2) Isolate any injection zones by placing sufficient cement to fill the calculated space between the casing and the well bore to a point 250 feet above the injection zone; and
- (3) Use cement:
 - (i) Of sufficient quantity and quality to withstand the maximum operation pressure;
 - (ii) Which is resistant to deterioration from formation and injection fluids; and
 - (iii) In a quantity no less than 120% of the calculated volume necessary to cement off a zone; and/or
- (4) Comply with other requirements which the Regional Administrator may specify in addition to or in lieu of the requirements set forth in paragraphs (b) (1) through (3) of this section as needed to protect USDWs.

[49 FR 45308, Nov. 15, 1984]

§ 147.2104 Requirements for all wells.

- (a) The owner or operator converting an existing well to an injection well shall check the condition of the casing with one of the following logging tools:
 - (1) A pipe analysis log; or
 - (2) A caliper log.
- (b) The owner or operator of a new injection well cased with plastic (PVC, ABS, or others) casings shall:
 - (1) Not construct a well deeper than 500 feet;
 - (2) Use cement and additives compatible with such casing material; and
 - (3) Cement the annular space above the injection internal from the bottom of the blank casing to the surface.
- (c) The owner or operator of a newly drilled well shall install centralizers as directed by the Regional Administrator.

(d) The owner or operator shall as required by the Regional Administrator:

- (1) Protect USDWs by:
 - (i) Setting surface casing 50 feet below the lowermost USDW;
 - (ii) Cementing surface casing by recirculating the cement to the surface from a point 50 feet below the lowermost USDW; or
 - (iii) Isolating all USDWs by placing cement between the outermost casing and the well bore; and
- (2) Isolate any injection zones by placing sufficient cement to fill the calculated space between the casing and the well bore to a point 250 feet above the injection zone; and
- (3) Use cement:
 - (i) Of sufficient quantity and quality to withstand the maximum operating pressure; and
 - (ii) Which is resistant to deterioration from formation and injection fluids; and
 - (iii) In a quantity no less than 120% of the calculated volume necessary to cement off a zone.
- (4) The Regional Administrator may approve alternate casing and cementing practices provided that the owner or operator demonstrates that such practices will adequately protect USDWs.
- (e) *Area of review.* Notwithstanding the alternatives presented in §146.6 of this chapter, the area of review shall be a fixed radius as described in §146.6(b) of this chapter.
- (f) The applicant must give separate notice of intent to apply for a permit to each owner of record of the land within one-quarter mile of the site. The addresses of those to whom notice is given and the description of how notice was given shall be submitted with the permit application. The notice shall include:
 - (1) The name and address of applicant;
 - (2) A brief description of the planned injection activities, including well location, name and depth of the injection zone, maximum injection pressure and volume, and fluid to be injected;
 - (3) The EPA contact person; and
 - (4) A statement that opportunity to comment will be announced after EPA prepares a draft permit.

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This requirement may be waived by the Regional Administrator if he determines that individual notice to all land owners of record would be impractical.

[49 FR 45308, Nov. 15, 1984]

Subpart RR—Tennessee

§ 147.2150 State-administered program. [Reserved]

§ 147.2151 EPA-administered program.

(a) *Contents.* The UIC program for the State of Tennessee, including all Indian lands, is administered by EPA. This program consists of the UIC program requirements of 40 CFR parts 124, 144, 146, 148, and any additional requirements set forth in the remainder of this subpart. Injection well owners and operators, and EPA shall comply with these requirements.

(b) *Effective dates.* Effective date for the UIC program on Indian lands is November 25, 1988. The effective date for the UIC program for the rest of Tennessee is June 25, 1984.

[53 FR 43090, Oct. 25, 1988, as amended at 56 FR 9419, Mar. 6, 1991]

§ 147.2152 Aquifer exemptions. [Reserved]

§ 147.2153 Existing Class I, II (except enhanced recovery and hydrocarbon storage) and III wells authorized by rule.

Maximum injection pressure. The owner or operator shall limit injection pressure to the lesser of:

(a) A value which will not exceed the operating requirements of § 144.28(f)(3)(i) or (ii) as applicable or

(b) A value for well head pressure calculated by using the following formula:

$$P_m = (0.600 - 0.433 S_g)d$$

where:

P_m =injection pressure at the well head in pounds per square inch

S_g =specific gravity of inject fluid (unitless)

d =injection depth in feet.

§ 147.2154 Existing Class II enhanced recovery and hydrocarbon storage wells authorized by rule.

(a) *Maximum injection pressure.* (1) To meet the operating requirements of § 144.28(f)(3)(ii) (A) and (B) of this chapter, the owner or operator:

(i) Shall use an injection pressure no greater than the pressure established by the Regional Administrator for the field or formation in which the well is located. The Regional Administrator shall establish such a maximum pressure after notice, opportunity for comment, and opportunity for a public hearing, according to the provisions of part 124, subpart A of this chapter, and will inform owners and operators in writing of the applicable maximum pressure; or

(ii) May inject at pressures greater than those specified in paragraph (a)(1)(i) of this section for the field or formation in which he is operating, provided he submits a request in writing to the Regional Administrator and demonstrates to the satisfaction of the Regional Administrator that such injection pressure will not violate the requirement of § 144.28(f)(3)(ii) (A) and (B). The Regional Administrator may grant such a request after notice, opportunity for comment, and opportunity for a public hearing, according to the provisions of part 124, subpart A of this chapter.

(2) Prior to such time as the Regional Administrator establishes rules for maximum injection pressure based on data provided pursuant to paragraph (a)(2)(ii) of this section the owner or operator shall:

(i) Limit injection pressure to a value which will not exceed the operating requirements of § 144.28(f)(3)(ii); and

(ii) Submit data acceptable to the Regional Administrator which defines the fracture pressure of the formation in which injection is taking place. A single test may be submitted on behalf of two or more operators conducting operations in the same formation, if the Regional Administrator approves such submission. The data shall be submitted to the Regional Administrator within one year of the effective date of this regulation.

(b) *Casing and cementing.* Where the Regional Administrator determines that the owner or operator of an existing enhanced recovery or hydrocarbon storage well may not be in compliance with the requirements of §§ 144.28(e) and 146.22, the owner or operator shall comply with paragraphs (b) (1) through (4)