



## Ohio Administrative Code

### Rule 1501:9-3-05 Construction of and conversion to saltwater injection wells.

Effective: April 15, 2004

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(A) Each saltwater injection well permitted after June 1, 1982 shall be constructed in the following manner:

(1) Surface casing shall be free of apparent defects and set at least fifty feet below the deepest underground source of water containing less than ten thousand mg/L chlorides, and sealed by circulating cement to the surface under the supervision of the division. In the event cement fails to circulate to the surface, the division may approve a remedial course of action.

(2) Isolation of injected fluids shall be by the use of casing mechanically centralized and enclosed in cement to a height no less than three hundred feet above the top of the injection zone.

(3) Injection of saltwater shall be through tubing and a packer set no more than one hundred feet above the injection zone and installation of such shall be under the supervision of the division. A fitting to the tubing of a size and type specified by the division on the permit and accessible at the surface shall be installed.

(4) To verify the quantity of cement used in an injection well, either a cement bond log, cement records, or verification by the division of the number of sacks of cement will be deemed sufficient evidence.

(5) Each injection well owner or his agent shall give the appropriate mineral resources inspector reasonable notice in advance of the time of the cementing, placing and removing of casing, installation of tubing and packer, and initial injection. A division office shall be notified when the appropriate inspector cannot be contacted. Said work shall be done pursuant to the instructions of a representative of the division in accordance with Chapter 1509. of the Revised Code and Chapter 1501:9-3 of the Administrative Code.

(6) All saltwater storage facilities shall be constructed so as to prevent pollution to surrounding



surface and subsurface soils and waters.

(7) The chief may grant a variance to the construction requirement established in paragraphs (A)(1), (A)(2), and (A)(3) of this rule if the proposed volume of injection is less than twenty-five barrels a day at minimal pressures, or if the chief determines that the variance sought will result in the construction of an injection well equivalent in its ability to protect underground sources of water containing less than ten thousand mg/L total dissolved solids or less than five thousand mg/L chlorides.

(B) Any well permitted before June 1, 1982 may be converted to a saltwater injection well if the following criteria are met:

(1) The surface casing shall be free of apparent defects and either cemented or properly sealed with prepared clay through the deepest underground source of water containing less than ten thousand mg/L total dissolved solids or less than five thousand mg/L chlorides.

(2) Isolation of injected fluids shall be by the use of casing enclosed in cement to a height no less than three hundred feet above the top of the injection zone.

(3) Any open formation not to be utilized for injection shall be abandoned in accordance with sections 1509.13 and 1509.15 of the Revised Code.

(4) Injection of saltwater shall be through tubing and a packer set no more than one hundred feet above the injection zone, and installation of such shall be under the supervision of the division. A fitting to the tubing of a size and type specified by the division on the permit and accessible at the surface shall be installed.

(5) To verify the quantity of cement or clay used in a conversion well, either cement or clay records, verification by the division of the number of sacks of cement or clay, a cement bond log, or other geophysical borehole logs shall be deemed sufficient evidence.

(6) Each injection well owner or his agent shall give the appropriate mineral resources inspector reasonable notice in advance of the time of the cementing, placing and removing of casing,



installation of tubing and packer, and initial injection. A division office shall be notified when the appropriate inspector cannot be contacted. Said work shall be done pursuant to the instructions of a representative of the division in accordance with Chapter 1509. of the Revised Code and Chapter 1501:9-3 of the Administrative Code.

(7) All saltwater storage facilities shall be constructed so as to prevent pollution to surrounding surface and subsurface soils and waters.

(8) The chief may grant a variance to the conversion requirements described in paragraphs (B)(1), (B)(2), and (B)(4) of this rule if the proposed volume of injection is less than twenty-five barrels a day at minimal pressures, or if the chief determines that the variance sought will result in an injection well equivalent in its ability to protect underground sources of water containing less than ten thousand mg/L total dissolved solids or less than five thousand mg/L chlorides.

(C) Initial testing of construction. Prior to commencement of injection operations in any injection well, the casing outside the tubing shall be tested under the supervision of the division. This test shall consist of pressurizing the annulus between the tubing and the casing outside the tubing to an amount equal to the maximum allowable injection pressure, as described in paragraph (D) of rule 1501:9-3-07 of the Administrative Code, or at a pressure of three hundred pounds per square inch (psi), whichever is greater, for a duration of at least fifteen minutes with no more than a five per cent decline in pressure, unless otherwise approved by the division. In addition, any well in which a formation is abandoned in accordance with paragraph (B)(3) of this rule shall, prior to perforating, have the casing and plug pressure tested under the supervision of the division at a pressure that is 1.25 times the maximum allowable injection pressure as described in paragraph (D) of rule 1501:9-3-07 of the Administrative Code. This test shall be for a duration of at least fifteen minutes with no more than a five per cent decline in pressure unless otherwise approved by the division.