

The Texas Commission on Environmental Quality (TCEQ, agency, or commission) adopts the amendment to §331.19 *without change* to the proposed text as published in the February 6, 2015, issue of the *Texas Register* (40 TexReg 587) and will not be republished.

Background and Summary of the Factual Basis for the Adopted Rule

As existing water supplies decline and demand for fresh water increases in central and southwest Texas, efforts are underway to identify and develop potential new sources of water. Two strategies being pursued are desalination of brackish groundwater and aquifer storage and recovery (ASR). In support of these options, this rulemaking implements Senate Bill (SB) 1532, 83rd Texas Legislature, 2013. The intent of SB 1532 was to provide a statutory and regulatory basis to promote research that could make desalination of brackish groundwater and ASR more viable in the Edwards Aquifer.

Prior to the passage of SB 1532, Texas Water Code (TWC), §27.051(i) and 30 TAC §331.19 prohibited certain injection wells that transect or terminate in the Edwards Aquifer. SB 1532 amends TWC, Chapter 27, Subchapter D, by adding TWC, §27.0516. Within specific geographic boundaries, TWC, §27.0516 allows the commission to authorize by rule or general permit certain injection wells that transect or terminate in the Edwards Aquifer while providing a statutory and regulatory basis that is protective of the freshwater aquifer and supportive of desalination and ASR.

The applicability of the provisions in TWC, §27.0516 is limited to the portion of the Edwards Aquifer that is within the geographic area circumscribed by the external boundaries of the Barton Springs-Edwards Aquifer Conservation District (BSEACD) but is not in that district's territory or the territory of the Edwards Aquifer Authority. The official jurisdictional boundaries of the BSEACD were originally established by order of the commission and subsequently modified by orders of both the commission and the BSEACD. As part of this rulemaking, the commission has developed a map, which is located in §331.19(c), for inclusion in the adopted rule to give a general depiction of the affected geographic areas.

The commission's Underground Injection Control (UIC) program has one existing general permit that authorizes disposal of nonhazardous desalination concentrate and other nonhazardous drinking water treatment residuals in a Class I well. This statewide general permit expedites the processing of authorizations for wells used for these purposes. The existing UIC general permit did not contemplate the addition of provisions such as those in SB 1532 that apply to only specific small geographic areas within a certain aquifer. It would not be feasible to amend the existing general permit to add the SB 1532 provisions. Because the number of applications is not expected to be significant under the general permits authorized in SB 1532, new general permits that include the special conditions required in SB 1532 will be implemented when there is a

need for them.

Section Discussion

§331.19, Injection Into or Through the Edwards Aquifer

The commission adopts the amendment to subsection (a) that inserts "except as authorized in subsection (c) of this section" at the beginning of subsection (a). This language will provide for the exceptions granted by SB 1532 for certain injection wells that transect or terminate in the Edwards Aquifer.

The commission adopts subsection (c) to specify that this subsection applies only to the portion of the Edwards Aquifer that is within the geographic area circumscribed by the external boundaries of the BSEACD, but is not in that district's territory or the territory of the Edwards Aquifer Authority. In order to reference the authoritative sources for BSEACD's boundaries, subsection (c) cites the defining documents that delineate the borders of the BSEACD to include orders of the commission dated November 19, 1986 and April 18, 1988; two subsequent orders of the BSEACD dated August 13, 1987; three orders of the BSEACD dated January 24, 2002; an order of the BSEACD canvassing the returns and declaring the results of a special election, dated November 12, 2002; and a resolution of the BSEACD adopted June 23, 2011. Subsection (c) also provides a figure showing a general depiction of the affected geographic area. The map in Figure: 30 TAC §331.19(c) is for illustrative purposes and is not to be used to establish the jurisdictional

boundaries of the BSEACD. Adopted subsection (c) further states that all injection wells within this specific geographic area are prohibited unless authorized by rule or by a general permit.

The commission adopts subsection (c)(1) to include definitions for "Engineered aquifer storage and recovery facility," "Fresh water" and "Saline portion of the Edwards Aquifer." These three definitions, quoted from TWC, §27.0516, are adopted in §331.19(c)(1)(A) - (C), respectively, for use in §331.19(c). Although the term "fresh water" was already defined in TWC, §27.002(8), and §331.2(46), it is uniquely defined in the context of this rulemaking and as applied in §331.19.

The commission adopts subsection (c)(2) to list activities that may be authorized by rule within the geographic area described in subsection (c) for the purpose of providing additional recharge. Any injection well subject to this section is also subject to the requirement of §331.5 (relating to Prevention of Pollution) providing that no permit or authorization shall be allowed where an injection well causes or allows the movement of fluid that would result in the pollution of an underground source of drinking water (USDW). Adopted §331.19(c)(2)(A) would authorize the injection of fresh water withdrawn from the Edwards Aquifer into a well that transects or terminates in the Edwards Aquifer. Adopted §331.19(c)(2)(B) would authorize the injection of rainwater, storm water, flood water or groundwater into the Edwards Aquifer through an improved

natural recharge feature such as a sinkhole or cave located in a karst topographic area.

These activities would be authorized by rule under §331.9 as stated in adopted §331.19(a).

Adopted subsection (c)(3) lists the types of injection wells which may be authorized under a general permit issued by the commission. Adopted subsection (c)(3)(A) provides that activities described by subsection (c)(2) may also be authorized under a general permit in addition to authorization by rule. Adopted subsection (c)(3)(B) and (C) pertains to the injection of concentrate from a desalination facility or fresh water as part of an engineered ASR facility. These fluids may be injected into a well that either transects and isolates the saline portion of the Edwards Aquifer and terminates in a lower aquifer, or a well that terminates in the saline portion of the Edwards Aquifer having a total dissolved solids concentration of more than 10,000 milligrams per liter (provided that each well used for injection or withdrawal from the facility must be at least three miles from the closest outlet of Barton Springs). Lastly, adopted subsection (c)(3)(D) would provide authorization for an injection well that transects or terminates in the Edwards Aquifer for aquifer remediation, the injection of a nontoxic tracer dye as part of a hydrologic study, or another beneficial activity that is designed and undertaken for the purpose of increasing protection of an USDW from pollution or other deleterious effects. The activities provided in subsection (c)(3) would apply only within the geographic area described in subsection (c).

Adopted subsection (c)(4) requires the commission to hold a public meeting before issuing a general permit under this section.

Adopted subsection (c)(5)(A) pertains to requirements for monitoring wells. Under subsection (c)(5)(A)(i), the injection well owner is required to operate a monitoring well if the executive director determines that there is an USDW in the area of review that is potentially affected by the injection well. If the injection well owner does not operate a monitoring well, then subsection (c)(5)(A)(ii) provides that the monitoring well may be operated by a party other than the injection well owner. In this latter case, all results of monitoring must be promptly made available to the injection well owner. The previously described monitoring wells, if properly sited and completed, may also be used to monitor a saline water production well as provided in subsection (c)(5)(A)(iii).

Subsection (c)(5)(B)(i) prohibits the waste or pollution of fresh water by an injection well covered under §331.19(c). Finally, subsection (c)(5)(B)(ii) provides that an injection well may be authorized for a term not to exceed ten years, and the authorization may be renewed.

Additional requirements of SB 1532 that are not specifically implemented in commission rule will be implemented as specific provisions in a general permit as authorized in §331.19.

Final Regulatory Impact Determination

The commission adopts the rulemaking action under the regulatory analysis requirements of Texas Government Code, §2001.0225, and determined that the action is not subject to Texas Government Code, §2001.0225 because it does not meet the definition of a "major environmental rule" as defined in the statute. "Major environmental rule" means a rule, the specific intent of which is to protect the environment or reduce risks to human health from environmental exposure and that may adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. The adopted rulemaking action implements legislative requirements in SB 1532, which authorizes certain types of injection wells in the Edwards Aquifer within a specified geographic area of the BSEACD. The adopted rulemaking does not meet the definition of "major environmental rule" because the rulemaking does not affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment or public health and safety of the state or a sector of the state. The new requirements for injection wells apply only to a specific geographic area within the circumscribed boundary but not within the jurisdiction of the BSEACD, and no injection well authorized by the commission may allow the movement of fluid that would result in the pollution of an USDW.

Furthermore, the adopted rulemaking does not meet any of the four applicability requirements listed in Texas Government Code, §2001.0225(a). The adopted rule does not exceed a standard set by federal law, because there is no comparable federal law regarding the Edwards Aquifer. The adopted rule does not exceed an express requirement of state law because it is consistent with the express requirements of SB 1532 and TWC, §27.0516. The adopted rule does not exceed requirements set out in the commission's UIC program authorized for the state of Texas under the federal Safe Drinking Water Act. The rulemaking is not adopted under the general powers of the agency, but is adopted under the express requirements of SB 1532 and TWC, §27.019 and §27.0516(h).

The commission invited public comment regarding the draft regulatory impact analysis determination during the public comment period. No comments were received on the regulatory impact analysis determination.

Takings Impact Assessment

The commission evaluated this rulemaking action and performed a preliminary assessment of whether Texas Government Code, Chapter 2007 is applicable. The adopted action implements legislative requirements in SB 1532, which authorizes certain types of injection wells within a specified geographic area in the Edwards Aquifer.

The adopted rule would be neither a statutory nor a constitutional taking of private real property. The adopted rule would allow certain injection wells in the Edwards Aquifer within a specified geographic area circumscribed by the boundary of the BSEACD as authorized under SB 1532. The adopted rule does not affect a landowner's rights in private real property because this rulemaking action does not burden (constitutionally), nor restrict or limit, the owner's right to property and reduce its value by 25% or more beyond which would otherwise exist in the absence of the regulations.

Consistency with the Coastal Management Program

The commission reviewed the adopted rule and found that it is neither identified in Coastal Coordination Act Implementation Rules, 31 TAC §505.11(b)(2) or (4), nor will it affect any action/authorization identified in Coastal Coordination Act Implementation Rules, 31 TAC §505.11(a)(6). Therefore, the adopted rule is not subject to the Texas Coastal Management Program (CMP).

The commission invited public comment regarding the consistency with the CMP during the public comment period. No comments were received regarding consistency with the CMP.

Public Comment

The commission held a public hearing in Austin on March 3, 2015. No oral comments were submitted at the meeting. The comment period closed on March 9, 2015. The commission received one written comment from an individual who expressed concern about water management issues outside the scope of this rulemaking.

Response to Comment

The commission received one written comment and question from an individual who expressed concern about the unregulated pumping of water from the Trinity Aquifer in Hays County and the endangerment of species by diminishing water flows from springs. This individual stated that daily water use is restricted yet a company from Houston can drain all the water they can sell. The commenter asked whether TCEQ is considering the impact of something as environmentally irresponsible and reckless as Ron Pucek's Living Waters Catfish Farm, Southern Bexar County, 1991.

Response

The commission responds that this comment and question is outside the scope of this rulemaking. The purpose of this rulemaking is to implement legislation to facilitate possible desalination or aquifer storage projects that applies to only specific small geographic areas within the Edwards Aquifer. The adopted rule does not address the pumping or withdrawal of water

from the Trinity Aquifer, endangerment of species by diminishing water flows from springs, restrictions on citizens' water use or the impact of a specific project. No change was made to the rule in response to this comment.

SUBCHAPTER A: GENERAL PROVISIONS

§331.19

Statutory Authority

The amended section is adopted under the Texas Water Code (TWC), §5.103, which provides the commission the authority to adopt any rules necessary to carry out its powers and duties under this code and other laws of this state; TWC, §5.105, which authorizes the commission to establish and approve all general policy of the commission by rule; TWC, §5.120, which authorizes the commission to administer the law so as to promote the judicious use and maximum conservation and protection of the environment and natural resources of the state; TWC, §27.019, which requires the commission to adopt rules reasonably required for the regulation of injection wells; and Senate Bill (SB) 1532, 83rd Texas Legislature, 2013.

The amended section implements SB 1532 and TWC, §27.0516, which authorizes certain injection wells in the Edwards Aquifer within a specified geographic area circumscribed by the boundary of the Barton Springs-Edwards Aquifer Conservation District.

§331.19. Injection Into or Through the Edwards Aquifer.

(a) Except as authorized in subsection (c) of this section, for applications submitted on or after September 1, 2001, injection wells that transect or terminate in the Edwards Aquifer may be authorized by rule under §331.9 of this title (relating to Injection Authorized by Rule) or by permit only as follows:

(1) wells that inject groundwater withdrawn from the Edwards Aquifer may be authorized only if:

(A) the groundwater is unaltered physically, chemically, or biologically; or

(B) the groundwater is treated in connection with remediation that is approved by state or federal order, authorization, or agreement and does not exceed the maximum contaminant levels for drinking water contained in §290.104 of this title (relating to Summary of Maximum Contaminant Levels, Maximum Residual Disinfectant Levels, Treatment Techniques, and Action Levels);

(2) wells that inject non-toxic tracer dyes into the Edwards Aquifer for the purpose of conducting scientific studies to determine hydrologic flowpaths may be authorized if the owner or operator is a federal or state agency, county, municipality, river authority, or groundwater district; or

(3) improved sinkholes or caves located in karst topographic areas that inject storm water, flood water, or groundwater may be authorized.

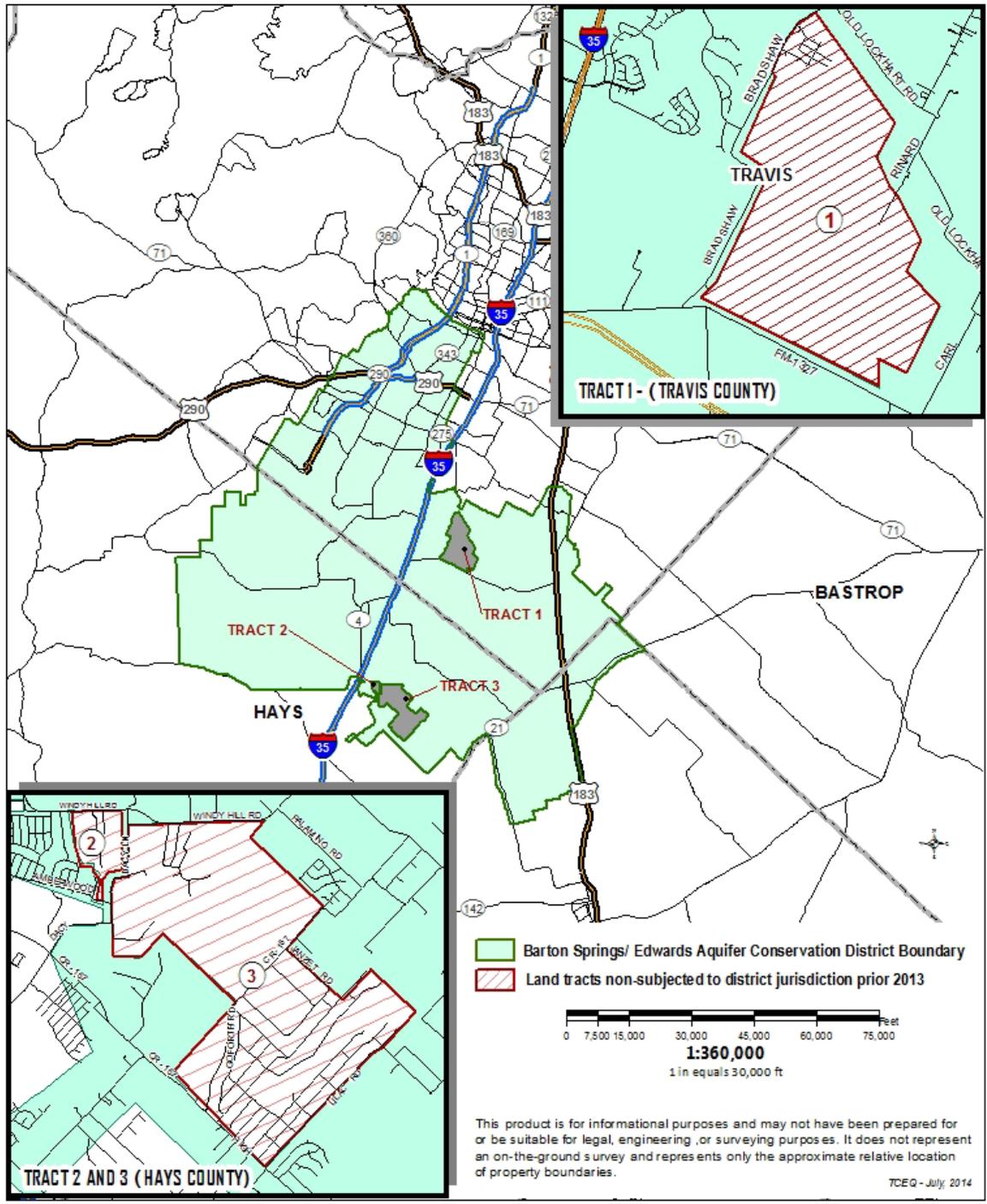
(b) For the purposes of this section, *Edwards Aquifer* means that portion of an arcuate belt of porous, water-bearing limestones composed of the Edwards Formation, Georgetown Formation, Comanche Peak Formation, Salmon Peak Limestone, McKnight Formation, West Nueces Formation, Devil's River Limestone, Person Formation, Kainer Formation, and Edwards Group trending from west to east to northeast through Kinney, Uvalde, Medina, Bexar, Kendall, Comal, Hays, Travis, and Williamson Counties. The permeable aquifer units generally overlie the less-permeable Glen Rose Formation to the south, overlie the less-permeable Comanche Peak and Walnut Formations north of the Colorado River, and underlie the less-permeable Del Rio Clay regionally.

(c) This subsection applies only to the portion of the Edwards Aquifer that is within the geographic area circumscribed by the external boundaries of the Barton Springs-Edwards Aquifer Conservation District (BSEACD) but is not in that district's territory or the territory of the Edwards Aquifer Authority. The jurisdictional boundaries of the BSEACD are delineated in orders of the commission dated November 19, 1986 and April 18, 1988; in two subsequent orders of the BSEACD dated August 13, 1987; three orders of the BSEACD dated January 24, 2002; an order of the BSEACD

canvassing the returns and declaring the results of a special election, dated November 12, 2002; and in a resolution of the BSEACD adopted June 23, 2011. A general depiction of the geographic area affected by this subsection is shown in the figure in this subsection. Unless authorized by rule as provided in paragraph (2) of this subsection or authorized by a general permit issued by the commission as provided in paragraph (3) of this subsection, all injection wells within the geographic area described in this subsection are prohibited.

Figure: 30 TAC §331.19(c)

**Area Affected by SB 1532 within Barton Springs - Edwards Aquifer Conservation District
 Travis and Hays Counties**



(1) Definitions. For the purposes of this subsection:

(A) Engineered aquifer storage and recovery facility--A facility with one or more wells that is located, designed, constructed, and operated for the purpose of injecting fresh water into a subsurface permeable stratum and storing the water for subsequent withdrawal and use for a beneficial purpose.

(B) Fresh water-- Surface water or groundwater, without regard to whether the water has been physically, chemically, or biologically altered, that:

(i) contains a total dissolved solids concentration of not more than 1,000 milligrams per liter; and

(ii) is otherwise suitable as a source of drinking water supply.

(C) Saline portion of the Edwards Aquifer--The portion of the Edwards Aquifer that contains groundwater with a total dissolved solids concentration of more than 1,000 milligrams per liter.

(2) Injection wells authorized by rule. Injection wells within the geographic area described within this subsection may be authorized by rule under §331.9 of this title for:

(A) the injection of fresh water withdrawn from the Edwards Aquifer into a well that transects or terminates in the Edwards Aquifer for the purpose of providing additional recharge; or

(B) the injection of rainwater, storm water, flood water, or groundwater into the Edwards Aquifer by means of an improved natural recharge feature such as a sinkhole or cave located in a karst topographic area for the purpose of providing additional recharge.

(3) Injection wells authorized by general permit. Injection wells within the geographic area described in this subsection may be authorized under a general permit issued by the commission. A general permit under this paragraph may authorize:

(A) an activity described under paragraph (2) of this subsection;

(B) an injection well that transects and isolates the saline portion of the Edwards Aquifer and terminates in a lower aquifer for the purpose of injecting:

(i) concentrate from a desalination facility; or

(ii) fresh water as part of an engineered aquifer storage and recovery facility;

(C) an injection well that terminates in that part of the saline portion of the Edwards Aquifer that has a total dissolved solids concentration of more than 10,000 milligrams per liter for the purpose of injecting into the saline portion of the Edwards Aquifer:

(i) concentrate from a desalination facility, provided that the injection well must be at least three miles from the closest outlet of Barton Springs; or

(ii) fresh water as part of an engineered aquifer and storage recovery facility, provided each well used for injection or withdrawal from the facility must be at least three miles from the closest outlet of Barton Springs; or

(D) an injection well that transects or terminates in the Edwards Aquifer for:

(i) aquifer remediation;

(ii) the injection of a nontoxic tracer dye as part of a hydrologic study; or

(iii) another beneficial activity that is designed and undertaken for the purpose of increasing protection of an underground source of drinking water from pollution or other deleterious effects.

(4) The commission must hold a public meeting before issuing a general permit under this section.

(5) Special requirements for all injection wells subject to this subsection.

(A) Monitoring wells. An injection well subject to this subsection must be monitored by means of:

(i) a monitoring well operated by the injection well owner if the executive director determines that there is an underground source of drinking water in the area of review that is potentially affected by the injection well; or

(ii) if clause (i) of this subparagraph does not apply, a monitoring well operated by a party other than the injection well owner, provided that all results of monitoring are promptly made available to the injection well owner.

(iii) A monitoring well described under this subparagraph, if properly sited and completed, may also be used for monitoring a saline water production well.

(B) An injection well subject to this subsection:

(i) must not result in the waste or pollution of fresh water;
and

(ii) may be authorized for a term not to exceed ten years, and the authorization for the injection well may be renewed.