

The Texas Commission on Environmental Quality (TCEQ, agency or commission) adopts amendments to §§331.2, 331.7, 331.17, 331.42, 331.45, 331.46, 331.62 - 331.66, and 331.121 and new §§331.201 - 331.206 *without changes* to the proposed text as published in the March 14, 2008 issue of the *Texas Register* (33 *TexReg* 2236) and will not be republished.

BACKGROUND AND SUMMARY OF THE FACTUAL BASIS FOR THE ADOPTED RULES

This rulemaking supports the commission's role in promoting desalination projects and is intended to facilitate permitting of Class I wells to be used for disposal of nonhazardous desalination concentrate and other nonhazardous water treatment residuals from public water systems and to reduce operating costs for these wells. This project is in response to initiatives by the Governor's Office and the Texas Water Development Board to promote desalination technology in Texas and to address the need for public water supply systems to dispose of drinking water treatment residuals.

This rulemaking implements House Bill (HB) 2654, 80th Legislature, 2007 and amends technical standards to expand disposal options for the special case of nonhazardous brine from a desalination operation (desalination concentrate) and nonhazardous drinking water treatment residuals. HB 2654 allows the commission to issue a general permit to authorize the use of a Class I injection well to dispose of nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals. A single statewide general permit covering all qualifying Class I injection wells that meet the permit's performance standards for injection of nonhazardous desalination concentrate and other nonhazardous drinking water treatment residuals will expedite the processing of authorizations for wells used for these purposes. The general permit will require safeguards to protect groundwater and surface water.

The use of a general permit to authorize Class I wells for disposal of desalination concentrate and other water treatment residuals from public water systems will reduce commission staff time required to perform detailed administrative and technical reviews of individual permit applications. For projects that do not meet the criteria for the general permit, the commission will be able to conduct streamlined reviews of applications for Class I nonhazardous wells for the disposal of desalination concentrate and other water treatment residuals from public water systems. Under current rules, injection of nonhazardous desalination concentrate and other nonhazardous water treatment residuals from public water systems is limited to individually-permitted Class I wells, Class II wells dually permitted as Class I wells, or under special conditions, rule-authorized Class V wells. Other options for disposal of nonhazardous desalination brine and nonhazardous drinking water treatment residuals include evaporation ponds and surface discharge under a Texas Pollutant Discharge Elimination System permit.

Entities disposing of desalination concentrate and other water treatment residuals from public water systems in Class I nonhazardous waste disposal wells and Class I/Class II dually permitted wells will be the primary beneficiaries of this rulemaking. This rulemaking will benefit the public by facilitating the production of public water supplies via desalination. Public water systems that must treat water to meet standards for constituent levels and dispose of the residuals will also benefit. Residents and property owners adjacent to disposal sites may be affected by this rule. This rulemaking may require submittal of an Underground Injection Control (UIC) Program revision to the United States Environmental Protection Agency in order to explain new processes under the adopted rules and future general permit.

HB 2654 also authorizes the use of nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals as an injection fluid for enhanced recovery purposes without first obtaining a

permit from the commission (consistent with federal regulations). Prior to this legislation, enhanced oil recovery wells needed permits from both the commission and the Railroad Commission of Texas (Class II wells).

In addition to implementing HB 2654, this rulemaking amends Chapter 331 to create a set of criteria closely analogous to federal Class I nonhazardous injection well regulations for the special case of wells injecting nonhazardous desalination concentrate and other nonhazardous water treatment residuals from public water systems. Currently in Texas the technical standards for Class I hazardous and nonhazardous wells are substantially the same; however, federal Class I standards for nonhazardous waste wells are less stringent. In conjunction with HB 2654, the revised technical standards will facilitate the use of injection wells for these purposes while meeting federal standards.

To implement HB 2654, this rulemaking amends §§331.2, 331.7 and 331.17 and adds new Subchapter L, General Permit Authorizing Use of a Class I Injection Well to Inject Nonhazardous Desalination Concentrate or Nonhazardous Drinking Water Treatment Residuals. To create a set of criteria closely analogous to federal Class I nonhazardous injection well regulations for the special case of wells injecting nonhazardous desalination concentrate and other nonhazardous water treatment residuals from public water systems, §§331.42, 331.45, 331.46, 331.62 - 331.66 and 331.121 are amended. To allow an injection well, authorized by the Railroad Commission of Texas to use nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals as an injection fluid for enhanced recovery purposes without a permit from the commission, §331.7 is amended. The amendment to §331.7 also stipulates that, in this context, radioactive material is subject to the applicable requirements of 30 TAC Chapter 336.

Amendments to 30 TAC Chapters 50, 55, and 305 are also adopted in this issue of the *Texas Register* to implement HB 2654.

SECTION BY SECTION DISCUSSION

The commission amends §331.2, Definitions, to add the following eight definitions. These definitions are necessary to characterize new terminology used in HB 2654 that does not currently appear in connection with Class I wells in Chapter 331. Desalination concentrate, is added as new paragraph (30). Drinking water treatment residuals, is added as new paragraph (35). Enhanced oil recovery project (EOR), is added as new paragraph (37). General permit, is added as new paragraph (44). Individual permit, is added as new paragraph (49). Notice of change (NOC), and Notice of intent (NOI), are added as new paragraphs (71) and (72), respectively. Public water system, is added as new paragraph (84). The commission is renumbering the definitions in §331.2 as a result of the added definitions. Current paragraph (34) is renumbered as paragraph (36); current paragraphs (35) - (40) are renumbered as paragraphs (38) - (43), respectively; current paragraphs (41) - (44) are renumbered as paragraphs (45) - (48), respectively; current paragraphs (45) - (65) are renumbered as paragraphs (50) - (70), respectively; current paragraphs (66) - (76) are renumbered as paragraphs (73) - (83), respectively; current paragraphs (77) - (104) are renumbered as paragraphs (85) - (112), respectively.

Section 331.7, Permit Required, is amended as follows: subsection (a) is amended to include subsections (e) and (f) as exceptions to the requirement that all injection wells and activities must be authorized by an individual permit. The word "permit" is changed to "individual permit" to clarify that §331.7(a) pertains to an individual permit versus the general permit. Subsection (d) is revised to exclude pre-injection units

for Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals from the option to be authorized by registration. HB 2654 does not explicitly mention pre-injection units, and the commission plans to address pre-injection units in the general permit. Consistent with federal requirements, no special authorization for pre-injection units associated with these wells will be required. Pre-injection units may also be authorized under an individual permit, such as a Class I UIC permit, or under 30 TAC Chapter 290. Chapter 290 addresses the construction of facilities associated with water treatment. Adopted subsection (e) is added to authorize the commission to issue a general permit for the use of a Class I injection well to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals. If the commission determines that the general permit will not protect ground and surface fresh water from pollution, the commission may require that an injection well and the injection activities be regulated under an individual permit. Adopted subsection (f) is added to stipulate that an injection well authorized by the Railroad Commission of Texas to use nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals as an injection fluid for enhanced recovery purposes does not require a permit from the commission.

Section 331.17(a), Pre-injection Units Registration, is amended to exclude pre-injection units for Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals from the option to be authorized by registration. HB 2654 does not explicitly mention pre-injection units, and the commission plans to address pre-injection units in the general permit. Consistent with federal requirements, no special authorization for pre-injection units will be required for units associated with these wells. This change is made in conjunction with the amendment of §331.7(d).

The amendment to §331.42, Area of Review, substantively affects subsections (a) - (c). The purpose of these changes is to specify standards for the extent of the area of review that are substantially equivalent to federal standards for Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals.

In §331.42(a), the contents of existing §331.42(b)(1) - (4) are incorporated as new paragraphs (1) and (3) - (5). This reformatting groups the area of review requirements for different types and classes of wells under existing §331.42(a). Existing §331.42(b) is relabeled as §331.42(a)(1) and amended to exclude wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals from the area of review requirement for other types of Class I wells. Adopted §331.42(a)(2) is added to specify that the area of review for wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals is a radius of 1/4 mile from the proposed or existing wellbore, or the area within the cone of influence, whichever is greater. This new paragraph further stipulates that the radius of an area of review determined by the mathematical model stated in §331.42(b) is permissible even if it is less than 1/4 mile. The contents of existing §331.42(b)(2) - (4) are incorporated under §331.42(a) as paragraphs (3) - (5). Existing subsection (c), which contains a mathematical equation, is relabeled as subsection (b), and editorial changes are made at two places in the equation to replace an erroneous paragraph symbol (¶) with the Greek letter pi (π). Existing subsection (d) is relabeled as subsection (c) and amended to exclude wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals from the requirement for a minimum radius of 2-1/2 miles for the area of review. Existing subsection (e) is relabeled as subsection (d).

The commission amends §331.45(1) to exclude wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals from certain standards for construction and completion of the well that exceed federal standards for Class I nonhazardous waste wells. New language has been added to §331.45(2) to stipulate standards substantially equivalent to federal standards for construction and completion of Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals. Paragraphs (2) and (3) have been renumbered as paragraphs (3) and (4).

Section 331.46, Closure Standards, is amended to add new subsection (a), stating which of current subsections (a) - (p) of §331.46 apply to Class I wells, salt cavern disposal wells, and Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals. The purpose of these changes is to specify closure standards that are substantially equivalent to federal standards for Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals. Subsection (a) has been relabeled as subsection (b), and subsequent subsections (b) - (p) have been relabeled as subsections (c) - (q), respectively. In subsection (c), the hyphenated word "non-hazardous" is corrected to "nonhazardous."

The commission amends §331.62, Construction Standards, by adding subsection (a) to state that those construction standards for Class I nonhazardous waste wells which exceed federal standards for Class I wells do not apply to Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals. Adopted subsection (b) is added to stipulate construction standards substantially equivalent to federal standards for Class I nonhazardous waste wells

that are authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals.

Section 331.63, Operating Requirements, is amended to add subsection (a), stating which of current subsections (a) - (l) of §331.63 apply to Class I wells in general and which apply to the special case of Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals. The purpose of these changes is to specify operating requirements that are substantially equivalent to federal standards for Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals. Subsection (a) has been relabeled as subsection (b), and subsequent subsections (b) - (l) have been relabeled as subsection (c) - (m), respectively. In subsection (j), the hyphenated word "non-hazardous" is corrected to "nonhazardous" consistent with editorial standards. Subsection (n) is added to stipulate requirements consistent with federal standards for the fluid and pressure in the annulus between the tubing and long string casing.

Section 331.64, Monitoring and Testing Requirements, is amended to add subsection (a) stating that current subsections (a) - (i) of §331.64 apply to all Class I wells except Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals.

Subsection (k) is added to specify monitoring and testing requirements that are substantially equivalent to federal standards for Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals. Subsection (a) has been relabeled as subsection (b), and subsequent subsections (b) - (i) have been relabeled as subsections (c) - (j), respectively.

Section 331.65, Reporting Requirements, is amended to add subsection (a), stating that current subsections (a) - (c) of §331.64 apply to all Class I wells except Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals. Subsection (e) is added to specify reporting requirements that are substantially equivalent to federal standards for Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals. Subsection (a) has been relabeled as subsection (b), and subsequent subsections (b) and (c) have been relabeled as subsections (c) and (d), respectively.

Section 331.66, Additional Requirements and Conditions, is amended to state that this section applies to all Class I wells except Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals. The requirements in §331.66 exceed federal requirements for Class I nonhazardous waste wells and will not apply to Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals.

Section 331.121(a)(2), Class I Wells, is amended to state that §331.121(a)(2)(A) - (R) apply to all Class I wells except Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals. Adopted §331.121(a)(3) is added to stipulate the information, consistent with federal requirements for Class I nonhazardous waste wells, to be considered by the commission before issuing a Class I permit for a well authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals. Subsection (c) is amended to state that all paragraphs apply to all Class I wells except wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals. Subsection (c) is also amended to specify that, consistent with federal requirements for Class I nonhazardous waste wells, only

§331.121(c)(1) applies to Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals. This change eliminates more stringent siting criteria that are not consistent with federal requirements for nonhazardous waste wells.

Adopted §331.201 is titled, Purpose and Applicability. Subsection (a) authorizes the commission to issue a permit to dispose of nonhazardous brine produced by a desalination operation or of nonhazardous drinking water treatment residuals in a Class I well if the facility meets statutory and regulatory requirements. Subsection (b) states that the commission may issue a general permit authorizing the use of a Class I well to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals. Subsection (c) stipulates that authorization for the use of an injection well under a general permit does not confer a vested right. Subsection (d) refers to the requirements of Chapter 336 for the use or disposal of radioactive material under new Subchapter L of Chapter 331.

Adopted §331.202 is titled, Public Notice, Public Meetings, and Public Comment. Subsection (a) states that the requirements of this section apply to processing a new general permit and amendment, renewal, revocation or cancellation of a general permit. Subsection (b) includes requirements for publishing notice of a draft general permit. Subsection (c) stipulates the contents of a public notice of a draft general permit. Subsection (d) includes requirements for public meetings for the draft general permit. Subsection (e) specifies requirements for the executive director's response to public comments on the general permit.

Adopted §331.203 is entitled, Authorizations and Notices of Intent. Subsection (a) requires submission of a Notice of Intent for a person to obtain authorization to use a Class I injection well to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals. Subsection

(b) stipulates that the content of the Notice of Intent shall be specified in the general permit. Subsection (c) states requirements for denial of an authorization or Notice of Intent. Subsection (d) covers suspension of authorization and Notices of Intent under a general permit. The executive director is required to provide written notice to a permittee if he intends to suspend the permittee's authority to inject waste under the general permit. Subsection (e) specifies use of a permittee's compliance history in denying or suspending a permittee's authority to inject waste under the general permit.

Adopted §331.204 is entitled, Permit Duration, Amendment and Renewal. Subsection (a) stipulates a ten-year term for the general permit. Subsection (b) specifies conditions for renewal of the general permit. Subsection (c) states that, upon issuance of a renewed or amended general permit, owners or operators covered under the general permit shall submit a Notice of Intent in accordance with the requirements of the new permit. Subsection (d) requires permittees authorized under the general permit to submit an application for an individual permit before the general permit expires if the commission has not proposed to renew the general permit at least 90 days before its expiration date. Subsection (e) states that, through renewal or amendment, the commission may add or delete requirements or limitations to the general permit. Existing permittees covered by the general permit are to be provided a reasonable time to make changes necessary to comply with substantive additional requirements. Subsection (f) states that the commission must find that the general permit is consistent with the goals and policies of the Texas Coastal Management Plan.

Adopted §331.205 is titled, Fees for Notice of Intent and Notice of Change. New subsections (a) and (b) specify that a person must submit a \$100 fee along with each Notice of Intent or Notice of Change, respectively, for each disposal well.

Adopted §331.206, titled Annual Fee Assessments, stipulates that annual facility and waste management fees must be paid by a person authorized by the general permit.

FINAL REGULATORY IMPACT ANALYSIS DETERMINATION

The commission reviewed the rulemaking in light of the regulatory analysis requirements of Texas Government Code, §2001.0225, and determined that the rulemaking does not meet the definition of a "major environmental rule" as defined by that statute. A "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. This rulemaking does not meet the statutory definition of a "major environmental rule" because it is not intended to reduce risks to human health from environmental exposure, nor does it 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 intent of the rulemaking is to implement HB 2654, passed during the 80th Legislature, 2007, and to revise technical standards for Class I nonhazardous wells injecting desalination concentrate and other water treatment residuals from public water systems so that the state's rules are no more stringent than federal Class I nonhazardous injection well regulations. The rulemaking substantially advances this purpose by: 1) amending §§331.2, 331.7, and 331.17 and adding new Subchapter L to provide for a new general permit authorizing the use of Class I injection wells to inject nonhazardous desalination concentrate or other nonhazardous drinking water treatment residuals, to implement HB 2654; 2)

amending §§331.42, 331.45, 331.46, 331.62 - 331.66 and 331.121 to create a set of criteria no more stringent than the federal regulations regarding Class I nonhazardous injection wells; and 3) amending §331.7 to provide that a permit is not required from the commission for an injection well authorized by the Railroad Commission of Texas to use nonhazardous desalination concentrate or drinking water treatment residuals for enhanced recovery purposes.

This rulemaking does not meet the statutory definition of a "major environmental rule" because the rules would not adversely 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. It is not anticipated that the cost of complying with the rules will be significant with respect to the economy; therefore, the rules will not adversely affect in a material way the economy, a sector of the economy, competition, or jobs.

Additionally, this rulemaking does not meet any of the four applicability requirements listed in Texas Government Code, §2001.0225(a). Texas Government Code, §2001.0225 only applies to a major environmental rule, the result of which is to: 1) exceed a standard set by federal law, unless the rule is specifically required by state law; 2) exceed an express requirement of state law, unless the rule is specifically required by federal law; 3) exceed a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement a state and federal program; or 4) adopt a rule solely under the general powers of the agency instead of under a specific state law. This rulemaking does not meet any of these four applicability requirements because this rulemaking does not exceed any standard set by federal law but rather amends the rules so that they are no more stringent or restrictive than the federal regulations. The rules do not exceed the requirements

of state law under the TWC, Chapter 27. Further, the rules do not exceed a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement any state and federal program. Finally, the rulemaking is not adopted solely under the general powers of the agency, but rather specifically under TWC, §27.023(m), which allows the commission to adopt rules to implement the general permit authorizing use of a Class I injection well to inject nonhazardous brine from desalination operations or nonhazardous drinking water treatment residuals and TWC, §27.109, which authorizes the commission to adopt rules to implement TWC, Chapter 27, as well as the other general powers of the agency.

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

TAKINGS IMPACT ASSESSMENT

The commission evaluated these rules and performed a preliminary assessment of whether the rules would constitute a taking under Texas Government Code, Chapter 2007. The primary purposes of the adopted rules are to implement HB 2654 and to revise the technical standards for Class I wells injecting nonhazardous desalination concentrate or drinking water treatment residuals to be no more stringent than the federal regulations. The adopted rules would substantially advance these purposes by amending various sections of Chapter 331 to conform technical standards for Class I wells injecting nonhazardous desalination concentrate or drinking water treatment residuals to the federal standards and by amending various sections of Chapter 331 and adding Subchapter L to implement the general permit provided by HB 2654.

Promulgation and enforcement of the adopted rules would constitute neither a statutory nor a constitutional taking of private real property. There are no burdens imposed on private real property under this rulemaking because the adopted rules neither relate to, nor have any impact on the use or enjoyment of private real property, and there would be no reduction in property value as a result of this rulemaking. Therefore, the adopted rules would not constitute a taking under Texas Government Code, Chapter 2007.

The commission has no reasonable alternative to rule adoption that could accomplish the specific purpose of implementing HB 2654 and revising technical standards to conform to federal standards.

CONSISTENCY WITH THE COASTAL MANAGEMENT PROGRAM

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

PUBLIC COMMENT

The proposal was published in the March 14, 2008 issue of the *Texas Register* (33 *TexReg* 2236). The commission held a public hearing in Austin on April 8, 2008. The comment period closed on April 14, 2008. Written comments expressing general support for the project were received from San Antonio Water System (SAWS) and the Water Environment Association of Texas (WEAT).

RESPONSE TO COMMENTS

SAWS requested that the final rules define or reference within state or federal code, the maximum contaminant levels (MCL's) and chemical constituents that allow an entity to qualify under the general permit for the nonhazardous desalination concentrate outlined in HB 2654.

The commission did not make any changes to the rules in response to this comment. As stated in TWC, §27.023, the general permit applies to Class I injection wells injecting nonhazardous brine from desalination operations or nonhazardous drinking water treatment residuals. In order for waste, including brine from a desalination operation, to be classified as nonhazardous, the brine must not meet any of the criteria for hazardous waste as specified in 40 Code of Federal Regulations (CFR) Part 261 (relating to Identification and Listing of Hazardous Waste) and 30 TAC Chapter 335 Subchapter R. If the waste is not classified as hazardous according to state and federal rules, it is considered nonhazardous. A desalination operation is defined in adopted §331.2(31) as "a process which produces water of usable quality by desalination." These are the criteria for characterization of nonhazardous desalination brine that would qualify for disposal under the general permit.

SAWS encouraged that no authorization be required for pre-injection units. However, if it is concluded that authorization under the UIC program is appropriate, SAWS asked that it be included within the general permit without additional registration and technical review. SAWS requested identification of any permitting requirements for pipelines conveying the nonhazardous desalination concentrate from the treatment plant facilities to the injection facilities.

The commission did not make any changes to the rules in response to these comments.

Authorization of pre-injection units is addressed in adopted §331.7(d) which states that pre-injection units for Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals are not subject to authorization by registration but are subject to authorization by an individual permit or under the general permit issued under Subchapter L.

Pipelines that convey waste to the injection well are pre-injection units as defined in §331.2(80). Standards for pre-injection units authorized by an individual permit are covered in §331.5(c) and §331.121(a)(2)(R). When the UIC general permit is implemented, it is anticipated that these same standards will apply to pre-injection units authorized under the general permit.

SAWS asked whether there is an anticipated date when an application can be filed under the new general permit structure. SAWS requested that the rules specify the TCEQ goals for the review period under the general permit. SAWS further commented that the information required in the Notice of Intent for the general permit should be identified.

The commission did not make any changes to the rules in response to these comments. The comments relate to implementation of the general permit, and the implementation process will be addressed after these adopted rules become effective. The issuance date of the general permit and TCEQ goals for the review period will be available after the general permit has been approved by the commission. The schedule for implementation is not known but will proceed as soon as

possible. The implementation process for the general permit will include a public comment period, and SAWS may resubmit these comments for consideration as part of that process.

Regarding identification of information required in the Notice of Intent (NOI) for the general permit, adopted §331.203(b) provides that the general permit shall describe the content of the NOI. The specific content required for the NOI will be identified during the general permit implementation process, and there will be an opportunity to comment on the notice requirements.

SAWS commented that the general permit should cover a well field comprised of multiple injection wells and that, if authorization under the general permit is denied, the commission's executive director should specify the reasons for denial. SAWS also stated that criteria for approval under the general permit should be no more stringent than the requirements of federal rules.

The commission did not make any changes to the rules in response to these comments. The permitting of multiple injection wells at a facility is consistent with current permitting practice for Class I wells and will be accommodated under the general permit.

With respect to denial of authorization under the general permit, adopted §331.203(c)(1) states that the executive director shall provide written notice to a facility if the executive director denies the facility's authorization to inject waste under a general permit, including a brief statement of the basis for this decision.

Regarding the consistency of criteria for approval under the general permit with federal rules, adopted §§331.42, 331.45, 331.46, 331.62-331.66 and 331.121 create a set of criteria closely analogous to federal Class I nonhazardous injection well regulations for the special case of wells injecting nonhazardous desalination concentrate and other nonhazardous water treatment residuals from public water systems.

SAWS requested definition of the procedures that will allow permitting, design, and construction of Class I injection wells for nonhazardous desalination concentrate under design-build as defined under HB 1886, 80th Legislature, 2007.

The commission did not make any changes to the rules in response to this comment. This comment refers to revisions to Chapter 293, relating to Water Districts, which are currently under development in TCEQ Rule Project Number 2007-047-293-PR, Docket Number 2007-0996-RUL. If adopted, the rule package would implement HB 1886, enabling water districts to use design-build procedures, a procurement method, for certain civil works. Desalination projects are specifically listed as eligible for this procurement method.

It may become necessary for the TCEQ to ensure that requirements for obtaining and operating under the general permit do not conflict with certain portions of the design-build process related to phased project planning. These adopted rules authorize the issuance of a general permit, but do not specify requirements to obtain or operate under such a permit; therefore, SAWS' comment is outside the scope of this rulemaking. The TCEQ encourages the commenter to re-submit this concern during the development of the general permit to ensure its consideration at that time.

SAWS commented that the general permit should specify a mechanism for transitioning a pending conventional Class I permit application to processing under the new general permit.

The commission did not make any changes to the rules in response to this comment. After the general permit has been issued, we anticipate that pending Class I permit applications for disposal of only desalination concentrate or drinking water treatment residuals may be authorized under the general permit by submittal of a Notice of Intent for coverage under the general permit and withdrawal of the conventional Class I injection well application(s).

SAWS commented that the adoption of revised rules is urgent and should remain a critical focus of TCEQ.

The commission did not make any changes to the rules in response to this comment. The commission notes that this rulemaking has been processed under an expedited schedule that will result in timely implementation of HB 2654.

SUBCHAPTER A: GENERAL PROVISIONS

§§331.2, 331.7 and 331.17

STATUTORY AUTHORITY

The amendments are adopted under Texas Water Code (TWC), §5.103, which provides the commission with the authority to adopt any rules necessary to carry out its powers and duties under this code and other laws of this state and to adopt rules repealing any statement of general applicability that interprets law or policy; §5.105, which authorizes the commission to establish and approve all general policy of the commission by rule; §27.019, which requires the commission to adopt rules reasonably required for the regulation of injection wells; and §27.023, which allows the commission to adopt rules as necessary to implement and administer a general permit authorizing the use of Class I injection wells to inject nonhazardous brine from desalination operations or nonhazardous drinking water treatment residuals.

The amendments implement TWC, §27.023, relating to General Permit Authorizing Use of Class I Injection Wells to Inject Nonhazardous Brine from Desalination Operations or Nonhazardous Drinking Water Treatment Residuals, and TWC, Chapter 27.

§331.2. Definitions.

General definitions can be found in Chapter 3 of this title (relating to Definitions). The following words and terms, when used in this chapter, have the following meanings.

(1) **Abandoned well**--A well which has been permanently discontinued from use or a well for which, after appropriate review and evaluation by the commission, there is no reasonable expectation of a return to service.

(2) **Activity**--The construction or operation of an injection well for disposal of waste, or of pre-injection units for processing or storage of waste.

(3) **Affected person**--Any person whose legal rights, duties, or privileges may be adversely affected by the proposed injection operation for which a permit is sought.

(4) **Annulus**--The space in the wellbore between the injection tubing and the long string casing and/or liner.

(5) **Annulus pressure differential**--The difference between the annulus pressure and the injection pressure in an injection well.

(6) **Aquifer**--A geological formation, group of formations, or part of a formation that is capable of yielding a significant amount of water to a well or spring.

(7) **Aquifer restoration**--The process used to achieve or exceed water quality levels established by the commission for a permit/production area.

(8) **Aquifer storage well**--A Class V injection well used for the injection of water into a geologic formation, group of formations, or part of a formation that is capable of underground storage of water for later retrieval and beneficial use.

(9) **Area of review**--The area surrounding an injection well described according to the criteria set forth in §331.42 of this title (relating to Area of Review) or in the case of an area permit, the project area plus a circumscribing area the width of which is either 1/4 mile or a number calculated according to the criteria set forth in §331.42 of this title.

(10) **Area permit**--An injection well permit which authorizes the construction and operation of two or more similar injection wells within a specified area.

(11) **Artificial liner**--The impermeable lining of a pit, lagoon, pond, reservoir, or other impoundment, that is made of a synthetic material such as butyl rubber, chlorosulfonated polyethylene, elasticized polyolefin, polyvinyl chloride (PVC), other manmade materials, or similar materials.

(12) **Baseline quality**--The parameters and their concentrations that describe the local groundwater quality of an aquifer prior to the beginning of injection activities.

(13) **Baseline well**--A well from which groundwater is analyzed to define baseline quality in the permit area (regional baseline well) or in the production area (production area baseline well).

(14) **Buffer area**--The area between any mine area boundary and the permit area boundary.

(15) **Caprock**--A geologic formation typically overlying the crest and sides of a salt stock. The caprock consists of a complex assemblage of minerals including calcite (CaCO_3), anhydrite (CaSO_4), and accessory minerals. Caprocks often contain lost circulation zones characterized by rock layers of high porosity and permeability.

(16) **Captured facility**--A manufacturing or production facility that generates an industrial solid waste or hazardous waste that is routinely stored, processed, or disposed of on a shared basis in an integrated waste management unit owned, operated by, and located within a contiguous manufacturing complex.

(17) **Casing**--Material lining used to seal off strata at and below the earth's surface.

(18) **Cement**--A substance generally introduced as a slurry into a wellbore which sets up and hardens between the casing and borehole and/or between casing strings to prevent movement of fluids within or adjacent to a borehole, or a similar substance used in plugging a well.

(19) **Cementing**--The operation whereby cement is introduced into a wellbore and/or forced behind the casing.

(20) **Cesspool**--A drywell that receives untreated sanitary waste containing human excreta, and which sometimes has an open bottom and/or perforated sides.

(21) **Commercial facility**--A Class I permitted facility, where one or more commercial wells are operated.

(22) **Commercial underground injection control (UIC) Class I well facility**--Any waste management facility that accepts, for a charge, hazardous or nonhazardous industrial solid waste for disposal in a UIC Class I injection well, except a captured facility or a facility that accepts waste only from other facilities owned or effectively controlled by the same person.

(23) **Commercial well**--An underground injection control Class I injection well which disposes of hazardous or nonhazardous industrial solid wastes, for a charge, except for a captured facility or a facility that accepts waste only from facilities owned or effectively controlled by the same person.

(24) **Conductor casing or conductor pipe**--A short string of large-diameter casing used to keep the top of the wellbore open during drilling operations.

(25) **Cone of influence**--The potentiometric surface area around the injection well within which increased injection zone pressures caused by injection of wastes would be sufficient to drive fluids into an underground source of drinking water or freshwater aquifer.

(26) **Confining zone**--A part of a formation, a formation, or group of formations between the injection zone and the lowermost underground source of drinking water or freshwater aquifer that acts as a barrier to the movement of fluids out of the injection zone.

(27) **Contaminant**--Any physical, biological, chemical, or radiological substance or matter in water.

(28) **Control parameter**--Any chemical constituent of groundwater monitored on a routine basis used to detect or confirm the presence of mining solutions in a designated monitor well.

(29) **Desalination brine**--The waste stream produced by a desalination operation containing concentrated salt water, other naturally occurring impurities, and additives used in the operation and maintenance of a desalination operation.

(30) **Desalination concentrate**--Same as desalination brine.

(31) **Desalination operation**--A process which produces water of usable quality by desalination.

(32) **Disposal well**--A well that is used for the disposal of waste into a subsurface stratum.

(33) **Disturbed salt zone**--Zone of salt enveloping a salt cavern, typified by increased values of permeability or other induced anomalous conditions relative to undisturbed salt which lies more distant from the salt cavern, and is the result of mining activities during salt cavern development and which may vary in extent through all phases of a cavern including the post-closure phase.

(34) **Drilling mud**--A heavy suspension used in drilling an injection well, introduced down the drill pipe and through the drill bit.

(35) **Drinking water treatment residuals**--Materials generated, concentrated or produced as a result of treating water for human consumption.

(36) **Drywell**--A well, other than an improved sinkhole or subsurface fluid distribution system, completed above the water table so that its bottom and sides are typically dry except when receiving fluids.

(37) **Enhanced oil recovery project (EOR)**--The use of any process for the displacement of oil from the reservoir other than primary recovery and includes the use of an immiscible, miscible, chemical, thermal, or biological process. This term does not include pressure maintenance or water disposal projects.

(38) **Excursion**--The movement of mining solutions into a designated monitor well.

(39) **Existing injection well**--A Class I well which was authorized by an approved state or United States Environmental Protection Agency-administered program before August 25, 1988, or a well which has become a Class I well as a result of a change in the definition of the injected waste which would render the waste hazardous under §335.1 of this title (relating to Definitions).

(40) **Fluid**--Material or substance which flows or moves whether in a semisolid, liquid, sludge, gas, or any other form or state.

(41) **Formation**--A body of rock characterized by a degree of lithologic homogeneity which is prevailingly, but not necessarily, tabular and is mappable on the earth's surface or traceable in the subsurface.

(42) **Formation fluid**--Fluid present in a formation under natural conditions.

(43) **Fresh water**--Water having bacteriological, physical, and chemical properties which make it suitable and feasible for beneficial use for any lawful purpose.

(A) For the purposes of this subchapter, it will be presumed that water is suitable and feasible for beneficial use for any lawful purpose only if:

(i) it is used as drinking water for human consumption; or

(ii) the groundwater contains fewer than 10,000 milligrams per liter (mg/L) total dissolved solids; and

(iii) it is not an exempted aquifer.

(B) This presumption may be rebutted upon a showing by the executive director or an affected person that water containing greater than or equal to 10,000 mg/L total dissolved solids can be put to a beneficial use.

(44) **General permit**--A permit issued under the provisions of this chapter authorizing the disposal of nonhazardous desalination concentrate and nonhazardous drinking water treatment residuals as provided by Texas Water Code, §27.023.

(45) **Groundwater**--Water below the land surface in a zone of saturation.

(46) **Groundwater protection area**--A geographic area (delineated by the state under Safe Drinking Water Act, 42 United States Code, §300j-13) near and/or surrounding community and non-transient, non-community water systems that use groundwater as a source of drinking water.

(47) **Hazardous waste**--Hazardous waste as defined in §335.1 of this title (relating to Definitions).

(48) **Improved sinkhole**--A naturally occurring karst depression or other natural crevice found in carbonate rocks, volcanic terrain, and other geologic settings which has been modified by man for the purpose of directing and emplacing fluids into the subsurface.

(49) **Individual permit**--A permit, as defined in the Texas Water Code (TWC), §27.011 and §27.021, issued by the commission or the executive director to a specific person or persons in accordance with the procedures prescribed in the TWC, Chapter 27, (other than TWC, §27.023).

(50) **Injection interval**--That part of the injection zone in which the well is authorized to be screened, perforated, or in which the waste is otherwise authorized to be directly emplaced.

(51) **Injection operations**--The subsurface emplacement of fluids occurring in connection with an injection well or wells, other than that occurring solely for construction or initial testing.

(52) **Injection well**--A well into which fluids are being injected. Components of an injection well annulus monitoring system are considered to be a part of the injection well.

(53) **Injection zone**--A formation, a group of formations, or part of a formation that receives fluid through a well.

(54) **In service**--The operational status when an authorized injection well is capable of injecting fluids, including times when the well is shut-in and on standby status.

(55) **Intermediate casing**--A string of casing with diameter intermediate between that of the surface casing and that of the smaller long-string or production casing, and which is set and cemented in a well after installation of the surface casing and prior to installation of the long-string or production casing.

(56) **Large capacity cesspool**--A cesspool that is designed for a flow of greater than 5,000 gallons per day.

(57) **Large capacity septic system**--A septic system that is designed for a flow of greater than 5,000 gallons per day.

(58) **Licensed professional geoscientist**--A geoscientist who maintains a current license through the Texas Board of Professional Geoscientists in accordance with its requirements for professional practice.

(59) **Liner**--An additional casing string typically set and cemented inside the long string casing and occasionally used to extend from base of the long string casing to or through the injection zone.

(60) **Long string casing or production casing**--A string of casing that is set inside the surface casing and that usually extends to or through the injection zone.

(61) **Lost circulation zone**--A term applicable to rotary drilling of wells to indicate a subsurface zone which is penetrated by a wellbore, and which is characterized by rock of high porosity and permeability, into which drilling fluids flow from the wellbore to the degree that the circulation of drilling fluids from the bit back to ground surface is disrupted or "lost."

(62) **Mine area**--The area defined by a line through the ring of designated monitor wells installed to monitor the production zone.

(63) **Mine plan**--A map of adopted mine areas and an estimated schedule indicating the sequence and timetable for mining and any required aquifer restoration.

(64) **Monitor well**--Any well used for the sampling or measurement of any chemical or physical property of subsurface strata or their contained fluids.

(A) Designated monitor wells are those listed in the production area authorization for which routine water quality sampling is required.

(B) Secondary monitor wells are those wells in addition to designated monitor wells, used to delineate the horizontal and vertical extent of mining solutions.

(C) Pond monitor wells are wells used in the subsurface surveillance system near ponds or other pre-injection units.

(65) **Motor vehicle waste disposal well**--A well used for the disposal of fluids from vehicular repair or maintenance activities including, but not limited to, repair and maintenance facilities for cars, trucks, motorcycles, boats, railroad locomotives, and airplanes.

(66) **New injection well**--Any well, or group of wells, not an existing injection well.

(67) **New waste stream**--A waste stream not permitted.

(68) **Non-commercial facility**--A Class I permitted facility which operates only non-commercial wells.

(69) **Non-commercial underground injection control (UIC) Class I well facility**--A UIC Class I permitted facility where only non-commercial wells are operated.

(70) **Non-commercial well**--An underground injection control Class I injection well which disposes of wastes that are generated on-site, at a captured facility or from other facilities owned or effectively controlled by the same person.

(71) **Notice of change (NOC)**--A written submittal to the executive director from a permittee authorized under a general permit providing changes to information previously provided to the agency, or any changes with respect to the nature or operations of the facility, or the characteristics of the waste to be injected.

(72) **Notice of intent (NOI)**--A written submittal to the executive director requesting coverage under the terms of a general permit.

(73) **Off-site**--Property which cannot be characterized as on-site.

(74) **On-site**--The same or geographically contiguous property which may be divided by public or private rights-of-way, provided the entrance and exit between the properties is at a cross-roads intersection, and access is by crossing, as opposed to going along, the right-of-way. Noncontiguous properties owned by the same person but connected by a right-of-way which the owner controls and to which the public does not have access, is also considered on-site property.

(75) **Out of service**--The operational status when a well is not authorized to inject fluids, or the well itself is incapable of injecting fluids for mechanical reasons, maintenance operations, or well workovers or when injection is prohibited due to the well's inability to comply with the in-service operating standards of this chapter.

(76) **Permit area**--The area owned or under lease by the permittee which may include buffer areas, mine areas, and production areas.

(77) **Plugging**--The act or process of stopping the flow of water, oil, or gas into or out of a formation through a borehole or well penetrating that formation.

(78) **Point of injection**--For a Class V well, the last accessible sampling point prior to fluids being released into the subsurface environment.

(79) **Pollution**--The contamination of water or the alteration of the physical, chemical, or biological quality of water:

(A) that makes it harmful, detrimental, or injurious:

(i) to humans, animal life, vegetation, or property; or

(ii) to public health, safety, or welfare; or

(B) that impairs the usefulness or the public enjoyment of the water for any lawful and reasonable purpose.

(80) **Pre-injection units**--The on-site above-ground appurtenances, structures, equipment, and other fixtures including the injection pumps, filters, tanks, surface impoundments, and piping for wastewater transmission between any such facilities and the well that are or will be used for storage or processing of waste to be injected, or in conjunction with an injection operation.

(81) **Production area**--The area defined by a line generally through the outer perimeter of injection and recovery wells used for mining.

(82) **Production area authorization**--A document, issued under the terms of an injection well permit, approving the initiation of mining activities in a specified production area within a permit area.

(83) **Production zone**--The stratigraphic interval extending vertically from the shallowest to the deepest stratum into which mining solutions are authorized to be introduced.

(84) **Public water system**--A system for the provision to the public of water for human consumption through pipes or other constructed conveyances as defined in §290.38(47) of this title (relating to Definitions).

(85) **Radioactive waste**--Any waste which contains radioactive material in concentrations which exceed those listed in 10 Code of Federal Regulations Part 20, Appendix B, Table II, Column 2, and as amended.

(86) **Restoration demonstration**--A test or tests conducted by a permittee to simulate production and restoration conditions and verify or modify the fluid handling values submitted in the permit application.

(87) **Restored aquifer**--An aquifer whose local groundwater quality has, by natural or artificial processes, returned to levels consistent with restoration table values or better as verified by an approved sampling program.

(88) **Salt cavern**--A hollowed-out void space that has been purposefully constructed within a salt stock, typically by means of solution mining by circulation of water from a well or wells connected to the surface.

(89) **Salt cavern confining zone**--A zone between the salt cavern injection zone and all underground sources of drinking water and freshwater aquifers, that acts as a barrier to movement of waste out of a salt cavern injection zone, and consists of the entirety of the salt stock excluding any portion of the salt stock designated as an underground injection control (UIC) Class I salt cavern injection zone or any portion of the salt stock occupied by a UIC Class II or Class III salt cavern or its disturbed salt zone.

(90) **Salt cavern injection interval**--That part of a salt cavern injection zone consisting of the void space of the salt cavern into which waste is stored or disposed of, or which is capable of receiving waste for storage or disposal.

(91) **Salt cavern injection zone**--The void space of a salt cavern that receives waste through a well, plus that portion of the salt stock enveloping the salt cavern, and extending from the boundaries of the cavern void outward a sufficient thickness to contain the disturbed salt zone, and an additional thickness of undisturbed salt sufficient to ensure that adequate separation exists between the outer limits of the injection zone and any other activities in the domal area.

(92) **Salt cavern solid waste disposal well or salt cavern disposal well**--For the purposes of this chapter, regulations of the commission, and not to underground injection control (UIC)

Class II or UIC Class III wells in salt caverns regulated by the Texas Railroad Commission, a salt cavern disposal well is a type of UIC Class I injection well used:

(A) to solution mine a waste storage or disposal cavern in naturally occurring salt; and/or

(B) to inject hazardous, industrial, or municipal waste into a salt cavern for the purpose of storage or disposal of the waste.

(93) **Salt dome**--A geologic structure that includes the caprock, salt stock, and deformed strata surrounding the salt stock.

(94) **Salt stock**--A geologic formation consisting of a relatively homogeneous mixture of evaporite minerals dominated by halite (NaCl) that has migrated from originally tabular beds into a vertical orientation.

(95) **Sanitary waste**--Liquid or solid waste originating solely from humans and human activities, such as wastes collected from toilets, showers, wash basins, sinks used for cleaning domestic areas, sinks used for food preparation, clothes washing operations, and sinks or washing machines where food and beverage serving dishes, glasses, and utensils are cleaned.

(96) **Septic system**--A well that is used to emplace sanitary waste below the surface, and is typically composed of a septic tank and subsurface fluid distribution system or disposal system.

(97) **Stratum**--A sedimentary bed or layer, regardless of thickness, that consists of generally the same kind of rock or material.

(98) **Subsurface fluid distribution system**--An assemblage of perforated pipes, drain tiles, or other similar mechanisms intended to distribute fluids below the surface of the ground. This definition includes subsurface area drip dispersal systems as defined in §222.5 of this title (relating to Definitions).

(99) **Surface casing**--The first string of casing (after the conductor casing, if any) that is set in a well.

(100) **Temporary injection point**--A method of Class V injection that uses push point technology (injection probes pushed into the ground) for the one-time injection of fluids into or above an underground source of drinking water.

(101) **Total dissolved solids**--The total dissolved (filterable) solids as determined by use of the method specified in 40 Code of Federal Regulations Part 136, as amended.

(102) **Transmissive fault or fracture**--A fault or fracture that has sufficient permeability and vertical extent to allow fluids to move between formations.

(103) **Underground injection**--The subsurface emplacement of fluids through a well.

(104) **Underground injection control**--The program under the federal Safe Drinking Water Act, Part C, including the approved Texas state program.

(105) **Underground source of drinking water**--An "aquifer" or its portions:

(A) which supplies drinking water for human consumption; or

(B) in which the groundwater contains fewer than 10,000 milligrams per liter total dissolved solids; and

(C) which is not an exempted aquifer.

(106) **Upper limit**--A parameter value established by the commission in a permit/production area authorization which when exceeded indicates mining solutions may be present in designated monitor wells.

(107) **Verifying analysis**--A second sampling and analysis of control parameters for the purpose of confirming a routine sample analysis which indicated an increase in any control parameter to a level exceeding the upper limit. Mining solutions are assumed to be present in a designated monitor well if a verifying analysis confirms that any control parameter in a designated monitor well is present in concentration equal to or greater than the upper limit value.

(108) **Well**--A bored, drilled, or driven shaft whose depth is greater than the largest surface dimension, a dug hole whose depth is greater than the largest surface dimension, an improved sinkhole, or a subsurface fluid distribution system but does not include any surface pit, surface excavation, or natural depression.

(109) **Well injection**--The subsurface emplacement of fluids through a well.

(110) **Well monitoring**--The measurement by on-site instruments or laboratory methods of any chemical, physical, radiological, or biological property of the subsurface strata or their contained fluids penetrated by the wellbore.

(111) **Well stimulation**--Several processes used to clean the well bore, enlarge channels, and increase pore space in the interval to be injected thus making it possible for wastewater to move more readily into the formation including, but not limited to, surging, jetting, blasting, acidizing, and hydraulic fracturing.

(112) **Workover**--An operation in which a down-hole component of a well is repaired, the engineering design of the well is changed, or the mechanical integrity of the well is compromised. Workovers include operations such as sidetracking, the addition of perforations within the permitted injection interval, and the addition of liners or patches. For the purposes of this chapter, workovers do not include well stimulation operations.

§331.7. Permit Required.

(a) Except as provided in §331.9 of this title (relating to Injection Authorized by Rule) and by subsections (d) - (f) of this section, all injection wells and activities must be authorized by an individual permit.

(b) For Class III in situ uranium solution mining wells, Frasch sulfur wells, and other Class III operations under commission jurisdiction, an area permit authorizing more than one well may be issued for a defined permit area in which wells of similar design and operation are proposed. The wells must be operated by a single owner or operator. Before commencing operation of those wells, the permittee may be required to obtain a production area authorization for separate production or mining areas within the permit area.

(c) The owner or operator of a large capacity septic system, a septic system which accepts industrial waste, or a subsurface area drip dispersal system, as defined in §222.5 of this title (relating to Definitions) must obtain a wastewater discharge permit in accordance with Texas Water Code, Chapter 26 or Chapters 26 and 32, and Chapter 305 of this title (relating to Consolidated Permits), and must submit the inventory information required under §331.10 of this title (relating to Inventory of Wells Authorized by Rule).

(d) Pre-injection units for Class I nonhazardous, noncommercial injection wells and Class V injection wells permitted for the disposal of nonhazardous waste must be either authorized by a permit issued by the commission or registered in accordance with §331.17 of this title (relating to Pre-Injection Units Registration). The option of registration provided by this subsection shall not apply to pre-injection

units for Class I injection wells used for the disposal of byproduct material, as that term is defined in Chapter 336 of this title (relating to Radioactive Substance Rules). Pre-injection units for Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals are not subject to authorization by registration but are subject to authorization by an individual permit or under the general permit issued under Subchapter L of this chapter (relating to General Permit Authorizing Use of a Class I Injection Well to Inject Nonhazardous Desalination Concentrate or Nonhazardous Drinking Water Treatment Residuals).

(e) The commission may issue a general permit under Subchapter L of this chapter. The commission may determine that an injection well and the injection activities are more appropriately regulated under an individual permit than under a general permit based on findings that the general permit will not protect ground and surface fresh water from pollution due to site-specific conditions.

(f) Notwithstanding subsection (a) of this section, an injection well authorized by the Railroad Commission of Texas to use nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals as an injection fluid for enhanced recovery purposes does not require a permit from the commission. The use or disposal of radioactive material under this paragraph is subject to the applicable requirements of Chapter 336 of this title (relating to Radioactive Substance Rules).

§331.17. Pre-injection Units Registration.

(a) Pre-injection units not otherwise authorized under this chapter, except for those pre-injection units used in conjunction with a Class I well authorized to inject only nonhazardous desalination

concentrate or nonhazardous drinking water treatment residuals, must be registered in accordance with the requirements of this section. Pre-injection units used in conjunction with a Class I well authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals are not subject to authorization by registration but are subject to authorization by an individual permit or under the general permit issued under Subchapter L of this chapter (relating to General Permit Authorizing Use of a Class I Injection Well to Inject Nonhazardous Desalination Concentrate or Nonhazardous Drinking Water Treatment Residuals).

(b) No registration shall be approved, and registrations may be denied or revoked, if the executive director determines that:

(1) a pre-injection unit causes or allows the release of fluid that would result in the pollution of underground sources of drinking water, fresh water, or surface water; or

(2) a pre-injection unit poses an immediate threat to public health or safety.

(c) Registration procedures for pre-injection units not otherwise authorized under this chapter must include the following.

(1) The owner or operator shall submit an application for registration to the executive director, in accordance with the applicable requirements of this subchapter;

(A) for any proposed pre-injection unit, obtain approval of the registration before operating the pre-injection unit; or

(B) for any existing unauthorized pre-injection unit, submit the application on or before the date the injection well permit renewal application is submitted.

(2) The owner or operator shall cease operation of any pre-injection unit if:

(A) the registration application for an existing pre-injection unit has not been submitted before approval of the injection well permit renewal;

(B) renewal of the registration is denied by the executive director;

(C) the term of the registration expires, however, if registration renewal procedures have been initiated before the permit expiration date, the existing registration will remain in full force and effect and will not expire until commission action on the application for renewal of the registration is final;

(D) the registration is denied or revoked by the executive director; or

(E) the executive director determines that the unit poses an immediate threat to public health or safety.

(d) Design criteria are as follows:

(1) pre-injection units shall be designed in such a manner as to protect underground sources of drinking water, fresh water, and surface water from pollution;

(2) pre-injection units shall be designed in such a manner as to enable the authorized injection well to meet all permit conditions and applicable rules and law;

(3) pre-injection units shall meet the design standards contained in Chapter 317 of this title (relating to Design Criteria for Sewerage Systems) which apply to the type of unit being proposed;
and

(4) all ponds shall be lined according to the requirements of §331.47 of this title (relating to Pond Lining).

SUBCHAPTER C: GENERAL STANDARDS AND METHODS

§§331.42, 331.45 and 331.46

STATUTORY AUTHORITY

The amendments are adopted under Texas Water Code (TWC), §5.103, which provides the commission with the authority to adopt any rules necessary to carry out its powers and duties under this code and other laws of this state and to adopt rules repealing any statement of general applicability that interprets law or policy; §5.105, which authorizes the commission to establish and approve all general policy of the commission by rule; §27.019, which requires the commission to adopt rules reasonably required for the regulation of injection wells; and §27.023, which allows the commission to adopt rules as necessary to implement and administer a general permit authorizing the use of Class I injection wells to inject nonhazardous brine from desalination operations or nonhazardous drinking water treatment residuals.

The amendments implement TWC, §27.023, relating to General Permit Authorizing Use of Class I Injection Wells to Inject Nonhazardous Brine from Desalination Operations or Nonhazardous Drinking Water Treatment Residuals, and TWC, Chapter 27.

§331.42. Area of Review.

(a) The area of review is the area surrounding an injection well or a group of injection wells, for which the permit application must detail the information required in Subchapter G of this chapter (relating to Consideration Prior to Permit Issuance).

(1) The area of review for Class I wells, except those wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals, is an area determined by a radius of 2 1/2 miles from the proposed or existing wellbore, or the area within the cone of influence, whichever is greater.

(2) The area of review for those Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals, is an area determined by a radius of 1/4 mile from the proposed or existing wellbore, or the area within the cone of influence, whichever is greater. Notwithstanding subsection (c) of this section, if the area of review is determined by a mathematical model pursuant to subsection (b) of this section, the permissible radius is the result of such calculation even if it is less than 1/4 mile.

(3) The area of review for salt cavern disposal wells and associated caverns, is the sum of the two following areas:

(A) an area determined by a radius of 2 1/2 miles from the proposed or existing wellbore; and

(B) the greatest horizontal plane cross-sectional area of the salt dome between land surface and a depth of 1,000 feet below the projected floor of the proposed or existing salt cavern.

(4) The area of review for Class III wells, is the project area plus a circumscribing area, a minimum of 1/4 mile, the width of which is the lateral distance from the perimeter of the project area, in

which the pressures in the injection zone may cause the migration of the injection and/or formation fluid into a Underground Sources of Drinking Water.

(5) The area of review for Class V wells is an area determined by a radius of at least 1/4 mile from the proposed or existing wellbore.

(b) The computation of the cone of influence may be based upon the parameters listed in the figure in this subsection and should be calculated for an injection time period equal to the expected life of the injection well or pattern. The following modified Theis equation illustrates one form which the mathematical model may take:

Figure: 30 TAC §331.42(b)

$$r = (2.25 KHht / S10^x)^{1/2}$$

Where

$$x = 4 \pi KH (h_w - h_{bo} \times S_p G_b) / 2.3 Q$$

r = radius of endangering influence from injection well (length)

K = hydraulic conductivity of the injection zone (length/time)

H = thickness of the injection zone (length)

t = time of injection (time)

S = storage coefficient (dimensionless)

Q = injection rate (volume/time)

h_{bo} = observed original hydrostatic head of injection zone (length) measured from the base of the lowermost underground source of drinking water

h_w = hydrostatic head of underground source of drinking water (length) measured from the base of the lowest underground source of drinking water

$S_p G_b$ = specific gravity of fluid in the injection zone (dimensionless)

π = 3.142 (dimensionless)

The above equation is based on the following assumptions:

- (1) the injection zone is homogenous and isotropic;
- (2) the injection zone has infinite area extent;
- (3) the injection well penetrates the entire thickness of the injection zone;
- (4) the well diameter is infinitesimal compared to "r" when injection time is longer than a few minutes; and
- (5) the emplacement of fluid into the injection zone creates instantaneous increase in pressure.

(c) After an appropriate review, the commission may modify the area of review. In no event shall the boundary of an area of review be less than 2 1/2 miles for Class I wells, except those wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals, or 1/4 mile for Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals, or 1/4 mile from any other injection well covered by the appropriate authorization. The following factors are to be included in the review:

(1) Chemistry of injection and formation fluids;

(2) Hydrogeology;

(3) Population and its dependence on ground water use; and

(4) Historical practices in the area.

(d) The executive director may require an owner or operator of an existing injection well to submit any reasonably available information regarding the area of review, if the information would aid a review for the prevention or correction of freshwater pollution.

§331.45. Executive Director Approval of Construction and Completion.

The executive director may approve or disapprove the construction and completion for an injection well or project. In making a determination whether to grant approval, the following shall be reviewed for compliance with the standards of this chapter:

(1) for Class I wells, except for those Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals, and salt cavern disposal wells and associated salt caverns:

(A) actual as-built drilling and completion data on the well;

(B) all logging and testing data on the well;

(C) a demonstration of mechanical integrity;

(D) anticipated maximum pressure and flow rate at which the permittee will operate;

(E) results of the injection zone and confining zone testing program as required in §331.62(7) of this title (relating to Construction Standards) and §331.65(a) of this title (relating to Reporting Requirements);

(F) the actual injection procedure;

(G) the compatibility of injected wastes with fluids in the injection zone and minerals in both the injection zone and the confining zone and materials used to construct the well;

(H) the calculated area of review and cone of influence based on data obtained during logging and testing of the well and the formation, and where necessary, revisions to the information submitted under §331.121 of this title (relating to Class I Wells);

(I) the status of corrective action required for defective wells in the area of review;

(J) compliance with the casing and cementing performance standard in §331.62(5) of this title, and where necessary, changes to the permit to provide for additional testing and/or monitoring of the well to insure the continuous attainment of the performance standard; and

(K) compliance with the cementing requirements in §331.62(6) of this title.

(2) for Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals:

(A) all available logging and testing program data on the well;

(B) a demonstration of mechanical integrity;

(C) the anticipated maximum pressure and flow rate at which the permittee will operate;

(D) the results of the formation testing program;

(E) the actual injection procedure;

(F) the compatibility of injected waste with fluids in the injection zone and minerals in both the injection zone and the confining zone; and

(G) the status of corrective action on defective wells in the area of review.

(3) for salt cavern disposal wells and associated salt caverns:

(A) actual as-built drilling and completion data on the well;

(B) all logging, coring, and testing program data on the well and salt pilot hole;

(C) a demonstration of mechanical integrity of the well;

(D) the anticipated maximum wellhead and casing seat pressures and flow rates at which the well will operate during cavern development and cavern waste filling;

(E) results of the salt cavern injection zone and salt cavern confining zone testing program as required in §331.163(e)(3) of this title (relating to Well Construction Standards);

(F) the injection and production procedures for cavern development and cavern waste filling;

(G) the compatibility of injected materials with the contents of the salt cavern injection zone and the salt cavern confining zone, and with the materials of well construction;

(H) land subsidence monitoring data and groundwater quality monitoring data, including determinations of baseline conditions for such monitoring throughout the area of review;

(I) the status of corrective action required for defective wells in the area of review;

(J) actual as-built specifications of the well's surface support and monitoring equipment; and

(K) conformity of the constructed well system with the plans and specifications of the permit application;

(4) for Class III wells:

(A) logging and testing data on the well;

(B) a satisfactory demonstration of mechanical integrity for all new wells, excluding monitor wells;

(C) anticipated operating data;

(D) the results of the formation testing program;

(E) the injection procedures; and

(F) the status of corrective action required for defective wells in the area of review.

§331.46. Closure Standards.

(a) Applicability. Subsections (b) - (n) and (q) of this section apply to Class I wells except for salt cavern disposal wells and those Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals. For salt cavern disposal wells, only subsections (c) and (e) - (q) of this section apply. For Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals, only subsections (e) - (h) and (q) of this section apply.

(b) For Class I wells, prior to closing the well, the owner or operator shall observe and record the pressure decay for a time specified by the executive director. The executive director shall analyze the pressure decay and the transient pressure observations conducted pursuant to §331.64 of this title (relating to Monitoring and Testing Requirements) and determine whether the injection activity has conformed with predicted values.

(c) For all Class I wells, prior to well closure, appropriate mechanical integrity testing shall be conducted to ensure the integrity of that portion of the long string casing and cement that will be left in the ground after closure. Testing methods may include:

(1) pressure tests with liquid or gas;

(2) radioactive tracer surveys for wells other than salt cavern disposal wells;

(3) noise logs, temperature logs, pipe evaluation logs, cement bond logs, or oxygen activation logs; and

(4) any other test required by the executive director.

(d) For Class I wells, prior to well closure the well shall be flushed with a nonhazardous buffer fluid.

(e) In closure of all Class I wells, Class III wells, and permitted Class V wells, a well shall be plugged in a manner which will not allow the movement of fluids through the well, out of the injection zone either into or between underground sources of drinking waters (USDWs) or to the land surface. Well plugs shall consist of cement or other materials approved in writing by the executive director, which provide protection equivalent to or greater than that provided by cement.

(f) The permittee shall notify the executive director before commencing closure according to an approved plan. For Class I wells this notice shall be given at least 60 days before commencement. At the discretion of the executive director, a shorter notice period may be allowed. The executive director shall review any revised, updated, or additional closure plans.

(g) Placement of the plugs in the wellbore shall be accomplished by an approved method that may include one of the following:

(1) the balance plug method;

(2) the dump bailer method;

(3) the two-plug method; or

(4) an alternate method, approved by the executive director, that will reliably provide a comparable level of protection.

(h) Prior to closure, the well shall be in a state of static equilibrium with the mud or nonhazardous fluid weight equalized top to bottom, either by circulating the mud or fluid in the well at least once or by a comparable method prescribed by the executive director.

(i) Each plug used shall be appropriately tagged and tested for seal and stability before closure is completed.

(j) The closure plan shall, in the case of a Class III production zone which underlies or is in an exempted aquifer, also demonstrate that no movement of contaminants that will cause pollution from the production zone into a USDW or freshwater aquifer will occur. The commission shall prescribe aquifer

cleanup and monitoring where deemed necessary and feasible to ensure that no migration of contaminants that will cause pollution from the production zone into a USDW or freshwater aquifer will occur.

(k) The following shall be considered in determining the adequacy of a plugging and abandonment plan for Class I and III wells:

- (1) the type and number of plugs to be used;
- (2) the placement of each plug including the elevation of the top and bottom;
- (3) the type, grade, and quantity of plugging material to be used;
- (4) the method of placement of the plugs;
- (5) the procedure used to plug and abandon the well;
- (6) any newly constructed or discovered wells, or information, including existing well data, within the area of review;
- (7) geologic or economic conditions;
- (8) the amount, size, and location by depth of casings and any other materials left in the well;

(9) the method and location where casing is to be parted if applicable;

(10) the estimated cost of the plugging procedure; and

(11) such other factors that may affect the adequacy of the plan.

(l) For Class I wells only, a monument or other permanent marker shall be placed at or attached to the plugged well before abandonment. The monument shall state the permit number, date of abandonment, and company name.

(m) Each owner of a Class I hazardous waste injection well, and the owner of the surface or subsurface property on or in which a Class I hazardous waste injection well is located, must record, within 60 days after approval by the executive director of the closure operations, a notation on the deed to the facility property or on some other instrument which is normally examined during a title search that will, in perpetuity, provide any potential purchaser of the property the following information:

(1) the fact that land has been used to manage hazardous waste;

(2) the name of the state agency or local authority with which the plat was filed, as well as the Austin address of the Underground Injection Control (UIC) staff of the commission, to which it was submitted; and

(3) the type and volume of waste injected, the injection interval or intervals, and for salt cavern wells, the maximum cavern radius into which it was injected, and the period over which injection occurred.

(n) Within 30 days after completion of closure, the permittee shall file with the executive director a closure report on forms provided by the commission. The report shall be certified as accurate by the owner or operator and by the person who performed the closure operation (if other than the owner or operator). This report shall consist of a statement that the well was closed in accordance with the closure plan previously submitted and approved by the executive director. Where the actual closure differed from the plan previously submitted, a written statement shall be submitted specifying the differences between the previous plan and the actual closure.

(o) For salt cavern disposal wells, prior to sealing the cavern and plugging the well, the owner or operator shall complete any pre-closure monitoring of the cavern and its contents required by rule or permit.

(p) For salt cavern disposal wells, the cavern shall be closed according to §331.170 of this title (relating to Cavern Closure).

(q) The obligation to implement the closure plan survives the termination of a permit or the cessation of injection activities. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the closure plan requirement is a condition of the permit.

SUBCHAPTER D: STANDARDS FOR CLASS I WELLS OTHER THAN SALT CAVERN

SOLID WASTE DISPOSAL WELLS

§§331.62, 331.63, 331.64, 331.65 and 331.66

STATUTORY AUTHORITY

The amendments are adopted under Texas Water Code (TWC), §5.103, which provides the commission with the authority to adopt any rules necessary to carry out its powers and duties under this code and other laws of this state and to adopt rules repealing any statement of general applicability that interprets law or policy; §5.105, which authorizes the commission to establish and approve all general policy of the commission by rule; §27.019, which requires the commission to adopt rules reasonably required for the regulation of injection wells; and §27.023, which allows the commission to adopt rules as necessary to implement and administer a general permit authorizing the use of Class I injection wells to inject nonhazardous brine from desalination operations or nonhazardous drinking water treatment residuals.

The amendments implement TWC, §27.023, relating to General Permit Authorizing Use of Class I Injection Wells to Inject Nonhazardous Brine from Desalination Operations or Nonhazardous Drinking Water Treatment Residuals, and TWC, Chapter 27.

§331.62. Construction Standards.

(a) All Class I wells shall be designed, constructed, and completed to prevent the movement of fluids that could result in the pollution of an underground source of drinking water (USDW). The

following standards apply to all Class I wells except those wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals.

(1) Design criteria. Casing and cement used in the construction of each newly drilled well shall be designed for the life expectancy of the well, including the post-closure care period. The well shall be designed and constructed to prevent potential leaks from the well, to prevent the movement of fluids along the wellbore into or between USDWs, to prevent the movement of fluids along the wellbore out of the injection zone, to permit the use of appropriate testing devices and workover tools, and to permit continuous monitoring of injection tubing, long string casing, and annulus, as required by this chapter. All well materials must be compatible with fluids with which the materials may be expected to come into contact. A well shall be deemed to have compatibility as long as the materials used in the construction of the well meet or exceed standards developed for such materials by the American Petroleum Institute, the American Society for Testing Materials, or comparable standards acceptable to the executive director.

(A) Casing design. Surface casing shall be set to a minimum subsurface depth, as determined by the executive director, which extends into the confining bed below the lowest formation containing a USDW or freshwater aquifer. At least one long string casing, using a sufficient number of centralizers, shall extend to the injection interval. In determining and specifying casing and cementing requirements, the following factors shall be considered:

(i) depth of lowermost USDW or freshwater aquifer;

(ii) depth to the injection interval;

(iii) injection pressure, external pressure, internal pressure, and axial loading;

(iv) hole size;

(v) size and grade of all casing strings (wall thickness, diameter, nominal weight, length, joint specification, and construction material);

(vi) the maximum burst and collapse pressures, and tensile stresses which may be experienced at any point along the length of the casings at any time during the construction, operation, and closure of the well;

(vii) corrosive effects of injected fluids, formation fluids, and temperatures;

(viii) lithology of injection and confining intervals;

(ix) presence of lost circulation zones or other subsurface conditions that could affect the casing and cementing program;

(x) types and grades of cement; and

(xi) quantity and chemical composition of the injected fluid.

(B) Tubing and packer design. All Class I injection wells shall inject fluids through tubing with a packer, set at a depth specified by the executive director. Fluid seal systems will not be approved by the commission. The annulus system shall be designed and constructed to prevent the leak of injection fluids into any unauthorized zones. In determining and specifying requirements for tubing and packer, the following factors shall be considered:

(i) depth to the injection zone;

(ii) characteristics of injection fluid (chemical content, corrosiveness, temperature, and density);

(iii) injection pressure;

(iv) annular pressure;

(v) rate (intermittent or continuous), temperature, and volume of injected fluid;

(vi) size of casing; and

(vii) tensile, burst, and collapse strengths of the tubing.

(2) Plans and specifications. Except as specifically required in the terms of the disposal well permit, the drilling and completion of the well shall be done in accordance with the requirements of this chapter and all permit application plans and specifications.

(3) Changes to plans and specifications. Any proposed changes to the plans and specifications must be approved in writing by the executive director that said changes provide protection standards equivalent to or greater than the original design criteria.

(A) If during the drilling and/or completion of the well, the operator proposes to change the cementing of the surface casing, the executive director shall require a written description of the proposed change, including any additional data necessary to evaluate the request. The operator may not execute the change until the executive director gives written approval. The operator may change the setting depth of the surface casing to a depth greater than that specified in the permit, either during drilling and/or completion, without approval from the executive director. Approval for setting depths shallower than specified in the permit will not be authorized.

(B) If the operator proposes to change the injection interval to one not reviewed during the permit application process, the operator shall submit an application to amend the permit. The operator may not inject into any unauthorized zone.

(C) Any other changes, including but not limited to the number of casing strings, changes in the size or material of intermediate and production casings, changes in the completion of the

well, changes in the exact setting of screens or injection intervals within the permitted injection zone, and changes in the type of cement used, or method of cementing shall be considered minor changes. If minor changes are requested, the executive director may give immediate oral and subsequent written approval or written approval for those changes. The operator is required to submit a detailed written description of all minor changes, along with the information required in §331.65 of this title (relating to Waste Disposal Operating Requirements), before approval for operation of the well may be granted.

(4) Drilling requirements.

(A) The well shall be drilled according to sound engineering practices to minimize problems which may jeopardize completion attempts, such as deviated holes, washouts and stuck pipe.

(B) As much as technically practicable and feasible, the hole should be drilled under laminar flow conditions, with appropriate fluid loss control, to minimize hole washouts.

(C) Immediately prior to running casing, the drilling fluid in the hole is to be circulated and conditioned to establish rheological properties commensurate with proper cementing practices.

(5) Construction performance standard. All Class I wells shall be cased and all casings shall be cemented to prevent the movement of fluids along the borehole into or between USDWs or freshwater aquifers, and to prevent movement of fluids along the borehole out of the injection zone.

(6) Cementing requirements, for all Class I wells constructed after the promulgation of this rule, including wells converting to Class I status.

(A) Cementing shall be by the pump and plug or other method approved by the executive director. Cementing may be accomplished by staging. Cement pumped shall be of a volume equivalent to at least 120% of the volume calculated necessary to fill the annular space between the hole and casing and between casing strings to the surface of the ground. The executive director may require more than 120% when the geology or other circumstances warrant it. A two-dimensional caliper shall be used to measure the hole diameter. If the two-dimensional caliper can not measure the diameter of the hole over an interval, then the minimum amount of cement needed for that interval shall be a volume calculated to be equivalent to or greater than 150% of the space between the casing and the maximum measurable diameter of the caliper.

(B) If lost circulation zones or other subsurface conditions are anticipated and/or encountered, which could result in less than 100% filling of the annular space between the casing and the borehole or the casings, the owner/operator shall implement the approved contingency plan submitted according to §331.121(a)(2)(O) of this title (relating to Class I Wells).

(7) Logs and tests.

(A) Integrity testing. Appropriate logs and other tests shall be conducted during the drilling and construction of Class I wells. All logs and tests shall be interpreted by the service

company which processed the logs or conducted the test; or by other qualified persons. A minimum of the following logs and tests shall be conducted:

(i) deviation checks on all holes, conducted at sufficiently frequent intervals to assure that avenues for fluid migration in the form of diverging holes are not created during drilling;

(ii) for surface casing;

(I) spontaneous potential, resistivity, natural gamma, and caliper logs before the casing is installed;

(II) cement bond with variable density log, and temperature logs after casing is set and cemented; and

(III) any other test required by the executive director;

(IV) the executive director may allow the use of an alternate to subclauses (I) and (II) of this clause when an alternative will provide equivalent or better information; and

(iii) for intermediate and long string casing:

(I) spontaneous potential, resistivity, natural gamma, compensated density and/or neutron porosity, dipmeter/fracture finder, and caliper logs, before the casing is installed;

(II) a cement bond with variable density log, casing inspection, and temperature logs after casing is set and cemented, and an inclination survey; and

(III) any other test required by the executive director; and

(iv) a mechanical integrity test consisting of:

(I) a pressure test with liquid or gas;

(II) a radioactive tracer survey;

(III) a temperature or noise log;

(IV) a casing inspection log, if required by the executive director; and

(V) any other test required by the executive director.

(B) Pressure tests. Surface casing shall be pressure tested to 1,000 pounds per square inch, gauge (psig) for at least 30 minutes, and long string casing shall be tested to 1,500 psig for at least 30 minutes, unless otherwise specified by the executive director.

(C) Core samples. Full-hole cores shall be taken from selected intervals of the injection zone and lowermost overlying confining zone; or, if full-hole coring is not feasible or adequate core recovery is not achieved, sidewall cores shall be taken at sufficient intervals to yield representative data for selected parts of the injection zone and lowermost overlying confining zone. Core analysis shall include a determination of permeability, porosity, bulk density, and other necessary tests.

(8) Injectivity tests. After completion of the well, injectivity tests shall be performed to determine the well capacity and reservoir characteristics. Surveys shall be performed to establish preferred injection intervals. Prior to performing injectivity tests, the bottom hole pressure, bottom hole temperature, and static fluid level shall be determined, and a representative sample of formation fluid shall be obtained for chemical analysis. Information concerning the fluid pressure, temperature, fracture pressure and other physical and chemical characteristics of the injection and confining zones shall be determined or calculated.

(9) Construction and workover supervision. All phases of well construction and all phases of any well workover shall be supervised by qualified individuals acting under the responsible charge of a licensed professional engineer or licensed professional geoscientist, as appropriate, with current registration under the Texas Engineering Practice Act or Texas Geoscience Practice Act, who is

knowledgeable and experienced in practical drilling engineering and who is familiar with the special conditions and requirements of injection well construction.

(10) The executive director shall have the opportunity to witness all cementing of casing strings, logging and testing. The owner or operator shall submit a schedule of such activities to the executive director at least 30 days prior to commencing drilling of the well. The executive director shall be given at least 24 hour notice before each activity in order that a representative of the executive director may be present.

(b) Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals shall be constructed in compliance with the following standards:

(1) Wells shall be sited in such a fashion that they inject into a formation which is beneath the lowermost formation containing, within one quarter mile of the well bore, an underground source of drinking water.

(2) Wells shall be cased and cemented to prevent the movement of fluids into or between underground sources of drinking water. The casing and cement used in the construction of each newly drilled well shall be designed for the life expectancy of the well. In determining and specifying casing and cementing requirements, the following factors shall be considered:

(A) Depth to the injection zone;

(B) Injection pressure, external pressure, internal pressure, and axial loading;

(C) Hole size;

(D) Size and grade of all casing strings (wall thickness, diameter, nominal weight, length, joint specification, and construction material);

(E) Corrosiveness of injected fluid, formation fluids, and temperatures;

(F) Lithology of injection and confining intervals; and

(G) Type or grade of cement.

(3) Injection wells, except those municipal wells injecting non-corrosive wastes or those using an alternative as provided by subparagraph (A) of this paragraph shall inject fluids through tubing with a packer set immediately above the injection zone, or tubing with an approved fluid seal as an alternative. The tubing, packer, and fluid seal shall be designed for the expected service.

(A) The use of other alternatives to a packer may be allowed with the written approval of the executive director. To obtain approval, the operator shall submit a written request to the executive director, which shall set forth the proposed alternative and all technical data supporting its use. The executive director shall approve the request if the alternative method will reliably provide a

comparable level of protection to underground sources of drinking water. The executive director may approve an alternative method solely for an individual well or for general use.

(B) In determining and specifying requirements for tubing, packer, or alternatives the following factors shall be considered:

(i) Depth of setting;

(ii) Characteristics of injection fluid (chemical content, corrosiveness, and density);

(iii) Injection pressure;

(iv) Annular pressure;

(v) Rate, temperature and volume of injected fluid; and

(vi) Size of casing.

(4) Appropriate logs and other tests shall be conducted during the drilling and construction of new Class I wells. A descriptive report interpreting the results of such logs and tests shall be prepared by a knowledgeable log analyst and submitted to the executive director. At a minimum, such logs and tests shall include:

(A) Deviation checks on all holes constructed by first drilling a pilot hole, and then enlarging the pilot hole by reaming or another method. Such checks shall be at sufficiently frequent intervals to assure that vertical avenues for fluid migration in the form of diverging holes are not created during drilling; and

(B) Such other logs and tests as may be needed after taking into account the availability of similar data in the area of the drilling site, the construction plan, and the need for additional information, that may arise from time to time as the construction of the well progresses. In determining which logs and tests shall be required, the following logs shall be considered for use in the following situations:

(i) For surface casing intended to protect underground sources of drinking water:

(I) Resistivity, spontaneous potential, and caliper logs before the casing is installed; and

(II) A cement bond, temperature, or density log after the casing is set and cemented.

(ii) For intermediate and long strings of casing intended to facilitate injection:

(I) Resistivity, spontaneous potential, porosity, and gamma ray logs before the casing is installed;

(II) Fracture finder logs; and

(III) A cement bond, temperature, or density log after the casing is set and cemented.

(5) At a minimum, the following information concerning the injection formation shall be determined or calculated for new Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals:

(A) Fluid pressure;

(B) Temperature;

(C) Fracture pressure;

(D) Other physical and chemical characteristics of the injection matrix; and

(E) Physical and chemical characteristics of the formation fluids.

§331.63. Operating Requirements.

(a) Applicability. Subsections (b) - (m) of this section apply to Class I wells except for those Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals. For Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals only subsections (b) - (d) and (n) of this section apply.

(b) All Class I wells shall be operated to prevent the movement of fluids that could result in the pollution of an underground source of drinking water (USDW) and to prevent leaks from the well into unauthorized zones.

(c) Except during well stimulation, injection pressure at the wellhead shall not exceed a maximum which shall be calculated so as to assure that the pressure in the injection zone during injection does not initiate new fractures or propagate existing fractures in the injection zone, initiate new fractures or propagate existing fractures in the confining zone, or cause movement of fluid out of the injection zone that may pollute USDWs or surface water.

(d) Injection between the outermost casing protecting USDWs and fresh or surface water and the wellbore is prohibited.

(e) The annulus between the tubing and long string casing shall be filled with a non-corrosive or corrosion-inhibiting fluid approved by the commission. The annulus pressure shall be at least 100 psi

greater than the injection tubing pressure to prevent leaks from the well into unauthorized zones and to detect well malfunctions, unless the executive director determines that such a requirement might harm the integrity of the well.

(f) Monthly average and maximum instantaneous rates of injection, and annual and monthly volumes of injected fluids shall not exceed limits specified by the commission.

(g) All gauges, pressure sensing, and recording devices shall be tested and calibrated quarterly.

(h) Any chemical or physical characteristic of the injected fluids shall be maintained within specified permit limits for the protection of the injection well, associated facilities, and injection zone and to ensure proper operation of the facility.

(i) The permittee shall notify the executive director before commencing any workover operation. The notification shall be in writing and shall include plans for the proposed work. Approval by the executive director shall be obtained before the permittee may begin the workover. The executive director may grant an exception to the prior written notification and permission requirements when immediate action is required to comply with subsection (b) of this section.

(j) Pressure control equipment shall be installed and maintained during workovers which involve the removal of tubing.

(k) For workovers or testing operations on hazardous waste disposal wells, all hazardous fluids shall be flushed from the wellbore with a nonhazardous fluid before conducting any portion of the operations which would result in the exposure of the hazardous wastes to the environment or the public.

(l) The owner or operator shall maintain mechanical integrity of the injection well at all times.

(m) The owner or operator of an injection well that has ceased operations for more than two years and is subject to §305.154(a)(7) of this title (relating to Standards) shall notify the executive director in writing 30 days prior to resuming operation of the well.

(n) For Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals, unless an alternative to a packer has been approved under §331.62(b)(3)(A) of this title (relating to Construction Standards), the annulus between the tubing and the long string of casings shall be filled with a fluid approved by the executive director and a pressure, also approved by the executive director, shall be maintained on the annulus.

§331.64. Monitoring and Testing Requirements.

(a) Applicability. Subsections (b) - (j) of this section apply to all Class I wells except for those Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals.

(b) Injection fluids shall be sampled and analyzed with a frequency sufficient to yield representative data of their characteristics.

(1) The owner or operator shall develop and follow an approved written waste analysis plan that describes the procedures to be carried out to obtain a detailed chemical and physical analysis of a representative sample of the waste, including the quality assurance procedures used. At a minimum, the plan shall specify:

(A) the parameters for which the waste will be analyzed and the rationale for the selection of these parameters;

(B) the test methods that will be used to test for these parameters; and

(C) the sampling method that will be used to obtain a representative sample of the waste to be analyzed.

(2) The owner or operator shall repeat the analysis of the injected wastes as described in the waste analysis plan and when process or operating changes occur that may significantly alter the characteristics of the waste stream.

(3) The owner or operator shall conduct continuous or periodic monitoring of selected parameters as required by the executive director.

(4) The owner or operator shall assure that the plan remains accurate and the analyses remain representative.

(c) Pressure gauges shall be installed and maintained, at the wellhead, in proper operating conditions at all times on the injection tubing and on the annulus between the tubing and long-string casing, and/or annulus between the tubing and liner.

(d) Continuous recording devices shall be installed, used, and maintained in proper operating condition at all times to record injection tubing pressures, injection flow rates, injection fluid temperatures, injection volumes, tubing-long string casing annulus pressure and volume, and any other data specified by the permit. The instruments shall be housed in weatherproof enclosures. The owner or operator shall also install and use:

(1) automatic alarm and automatic shutoff systems, designed to sound and shut-in the well when pressures and flow rates or other parameters approved by the executive director exceed a range and/or gradient specified in the permit; or

(2) automatic alarms designed to sound when the pressures and flow rates or other parameters approved by the executive director exceed a rate and/or gradient specified in the permit, in cases where the owner or operator certifies that a trained operator will be on location and able to immediately respond to alarms at all times when the well is operating.

(3) If an automatic alarm or shutdown is triggered, the owner or operator shall immediately investigate as expeditiously as possible the cause of the alarm or shutoff. If, upon investigation, the well appears to be lacking mechanical integrity, or if monitoring otherwise indicates that the well may be lacking mechanical integrity, the owner or operator shall:

(A) cease injection of waste fluids unless authorized by the executive director to continue or resume injection;

(B) take all necessary steps to determine the presence or absence of a leak; and

(C) notify the executive director within 24 hours after the alarm or shutdown.

(4) If the loss of mechanical integrity is discovered by monitoring or during periodic mechanical integrity testing, the owner or operator shall:

(A) immediately cease injection of waste fluids;

(B) take all steps reasonably necessary to determine whether there may have been a release of hazardous wastes or hazardous waste constituents into any unauthorized zone;

(C) notify the executive director within 24 hours after the loss of mechanical integrity is discovered;

(D) notify the executive director when injection can be expected to resume; and

(E) restore and demonstrate mechanical integrity to the satisfaction of the executive director prior to resuming injection of waste fluids.

(5) Whenever the owner or operator obtains evidence that there may have been a release of injected wastes into an unauthorized zone:

(A) the owner or operator shall immediately cease injection of waste fluids; and

(i) notify the executive director within 24 hours of obtaining such evidence;

(ii) take all necessary steps to identify and characterize the extent of any release;

(iii) propose a remediation plan for executive director review and approval;

(iv) comply with any remediation plan specified by the executive director;

(v) implement any remediation plan approved by the executive director;

and

(vi) where such release is into a USDW or freshwater aquifer currently serving as a water supply, within 24 hours, notify the local health authority, place a notice in a newspaper of general circulation, and send notification by mail to adjacent landowners;

(B) the executive director may allow the operator to resume injection prior to completing cleanup action if the owner or operator demonstrates that the injection operation will not endanger USDWs or freshwater aquifers.

(e) Mechanical integrity testing.

(1) The integrity of the long string casing, injection tube, and annular seal shall be tested annually by means of an approved pressure test with a liquid or gas and whenever there has been a well workover. The integrity of the bottom-hole cement shall be tested annually by means of an approved radioactive tracer survey. A radioactive tracer survey may be required after workovers that have the potential to damage the cement within the injection zone.

(2) A temperature log, noise log, oxygen activation log, or other approved log shall be required by the executive director at least once every five years to test for fluid movement along the borehole.

(3) A casing inspection, casing evaluation, or other approved log shall be run whenever the owner or operator conducts a workover in which the injection string is pulled, unless the executive director waives this requirement due to well construction or other factors which limit the test's reliability, or based upon the satisfactory results of a casing inspection log run within the previous five years. The executive director may require that a casing inspection log be run every five years, if there is sufficient reason to believe the integrity of the long string casing of the well may be adversely affected by naturally occurring or man-made events.

(4) The executive director may allow the use of a test to demonstrate mechanical integrity other than those listed in paragraph (1) of this subsection with the written approval of the administrator of the United States Environmental Protection Agency (EPA) or his authorized representative. To obtain approval, the executive director shall submit a written request to the EPA administrator, which shall set forth the proposed test and all technical data supporting its use. The EPA administrator shall approve the request if it will reliably demonstrate the mechanical integrity of wells for which its use is proposed. Any alternate method approved by the EPA administrator shall be published in the *Federal Register* and may be used unless its use is restricted at the time of approval by the EPA administrator.

(f) Any wells within the area of review selected for the observation of water quality, formation pressure, or any other parameter, shall be monitored at a frequency sufficient to protect underground sources of drinking water (USDWs) and fresh or surface water.

(g) Corrosion monitoring.

(1) Corrosion monitoring of well materials shall be conducted quarterly. Test materials shall be the same as those used in the injection tubing, packer, and long string casing, and shall be continuously exposed to the waste fluids with the exception of when the well is taken out of service. The owner or operator shall demonstrate that the waste stream will be compatible with the well materials with which the waste is expected to come into contact, and to submit to the executive director a description of the methodology used to make that determination. Compatibility for purposes of this requirement is established if contact with injected fluids will not cause the well materials to fail to satisfy any design requirement imposed under §331.62(1) of this title (relating to Construction Standards). Testing shall be by:

(A) placing coupons of the well construction materials in contact with the waste stream; or

(B) routing the waste stream through a loop constructed with the material used in the well; or

(C) using an alternative method approved by the executive director.

(2) The test shall use materials identical to those used in the construction of the well, and those materials must be continuously exposed to the operating pressures and temperatures (measured at the wellhead) and flow rates of the injection operation; and

(3) The owner or operator shall monitor the materials for loss of mass, thickness, cracking, pitting and other signs of corrosion on a quarterly basis to ensure that the well components meet the minimum standards for material strength and performance set forth in §331.62(1) of this title.

(4) Corrosion monitoring may be waived by the executive director if the injection well owner or operator satisfactorily demonstrates, before authorization to conduct injection operations, that the waste streams will not be corrosive to the well materials with which the waste is expected to come into contact throughout the life of the well. The demonstration shall include a description of the methodology used to make that determination.

(h) Ambient monitoring.

(1) Based on a site-specific assessment of the potential for fluid movement from the well or injection zone and on the potential value of monitoring wells to detect fluid movement, the executive director shall require the owner or operator to develop a monitoring program. When prescribing a monitoring system, the executive director may also require:

(A) Continuous monitoring for pressure changes in the first aquifer overlying the confining zone. When a monitor well is installed, the owner or operator shall, on a quarterly basis, sample the aquifer and analyze for constituents specified by the executive director;

(B) the use of indirect, geophysical techniques to determine the position of the waste front, the water quality in a formation designated by the executive director, or to provide other site specific data;

(C) periodic monitoring of the ground water quality in the first aquifer overlying the injection zone;

(D) periodic monitoring of the ground water quality in the lowermost USDW;
and

(E) any additional monitoring necessary to determine whether fluids are moving into or between USDWs.

(2) The pressure buildup in the injection zone shall be monitored annually, including at a minimum, a shut down of the well for a time sufficient to conduct a valid observation of the pressure fall-off curve.

(i) Any other monitoring and testing requirements which the executive director determines to be necessary including, but not limited to, monitoring for seismic activity.

(j) The owner or operator shall submit information demonstrating to the satisfaction of the executive director that the waste stream and its anticipated reaction products will not alter the

permeability, thickness, or other relevant characteristics of the confining or injection zones such that they would no longer meet the requirements specified in §331.121(c) of this title (relating to Class I Wells).

(k) Class I Wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals shall comply with the following monitoring and testing requirements:

(1) Monitoring requirements. Monitoring requirements shall, at a minimum, include:

(A) The analysis of the injected fluids with sufficient frequency to yield representative data of their characteristics;

(B) Installation and use of continuous recording devices to monitor injection pressure, flow rate and volume, and the pressure on the annulus between the tubing and the long string of casing;

(C) Installation and use of monitoring wells within the area of review if required by the executive director, to monitor any migration of fluids into and pressure in the underground sources of drinking water. The type, number and location of the wells, the parameters to be measured, and the frequency of monitoring must be approved by the executive director;

(D) A demonstration of mechanical integrity pursuant to paragraph (4) of this subsection at least once every five years during the life of the well; and

(E) The type, number and location of wells within the area of review to be used to monitor any migration of fluids into and pressure in the underground sources of drinking water, the parameters to be measured and the frequency of monitoring.

(2) When the executive director determines that an injection well lacks mechanical integrity pursuant to paragraph (4) of this subsection, the executive director shall give written notice of his determination to the owner or operator. Unless the executive director requires immediate cessation, the owner or operator shall cease injection into the well within 48 hours of receipt of the executive director's determination. The executive director may allow plugging of the well in accordance with the requirements of §331.46 of this title (relating to Closure Standards) or require the owner or operator to perform such additional construction, operation, monitoring, reporting and corrective action as is necessary to prevent the movement of fluid into or between USDWs caused by the lack of mechanical integrity. The owner or operator may resume injection upon receipt of written notification from the executive director that the owner or operator has demonstrated mechanical integrity under paragraph (4) of this subsection.

(3) The executive director may allow the owner or operator of a well which lacks mechanical integrity under paragraph (4) of this subsection to continue or resume injection if the owner or operator has made a satisfactory demonstration that there is no movement of fluid into or between USDWs.

(4) Mechanical Integrity Testing. An injection well has mechanical integrity if:

(A) There is no significant leak in the casing, tubing or packer; and

(B) There is no significant fluid movement into an underground source of drinking water through vertical channels adjacent to the injection well bore.

(5) One of the following methods shall be used to evaluate the absence of significant leaks under paragraph (4)(A) of this subsection:

(A) Following an initial pressure test, monitoring of the tubing-casing annulus pressure with sufficient frequency to be representative, as determined by the executive director, while maintaining an annulus pressure different from atmospheric pressure measured at the surface; or

(B) Pressure test with liquid or gas.

(6) The results of a temperature or noise log must be used to determine the absence of significant fluid movement under paragraph (4)(B) of this subsection.

(7) The executive director may allow the use of a test to demonstrate mechanical integrity other than those listed in paragraph (5)(A) and (B) of this subsection with the written approval of the executive director. To obtain approval, the permittee shall submit a written request to the executive director, which shall set forth the proposed test and all technical data supporting its use. The executive

director shall approve the request if it will reliably demonstrate the mechanical integrity of wells for which its use is proposed.

(8) In conducting and evaluating the tests enumerated in this section or others to be allowed by the executive director, the owner or operator and the executive director shall apply methods and standards generally accepted in the industry. When the owner or operator reports the results of mechanical integrity tests to the executive director, he shall include a description of the test(s) and the method(s) used. In making his evaluation, the executive director shall review monitoring and other test data submitted since the previous evaluation.

(9) The executive director may require additional or alternative tests if the results presented by the owner or operator under §331.64(k)(5) of this title (relating to Monitoring and Testing Requirements) are not satisfactory to the executive director to demonstrate that there is no movement of fluid into or between USDWs resulting from the injection activity.

(10) Ambient monitoring.

(A) Based on a site-specific assessment of the potential for fluid movement from the well or injection zone and on the potential value of monitoring wells to detect such movement, the executive director shall require the owner or operator to develop a monitoring program. At a minimum, the executive director shall require monitoring of the pressure buildup in the injection zone annually, including a shut down of the well for a time sufficient to conduct a valid observation of the pressure fall-off curve.

(B) When prescribing a monitoring system the executive director may also require:

(i) Continuous monitoring for pressure changes in the first aquifer overlying the confining zone. When such a well is installed, the owner or operator shall, on a quarterly basis, sample the aquifer and analyze for constituents specified by the executive director;

(ii) The use of indirect, geophysical techniques to determine the position of the waste front, the water quality in a formation designated by the executive director, or to provide other site specific data;

(iii) Periodic monitoring of the ground water quality in the first aquifer overlying the injection zone;

(iv) Periodic monitoring of the ground water quality in the lowermost USDW; and

(v) Any additional monitoring necessary to determine whether fluids are moving into or between USDWs.

§331.65. Reporting Requirements.

(a) Applicability. Subsections (b) - (d) of this section apply to all Class I wells except for those Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals.

(b) Pre-operation reports. For new wells, including wells converting to Class I status, the requirements are as follows.

(1) Completion report. Within 90 days after the completion or conversion of the well, the permittee shall submit a Completion Report to the executive director. The report must include a surveyor's plat showing the exact location and giving the latitude and longitude of the well. The report must also include a certification that a notation on the deed to the facility property or on some other instrument which is normally examined during title search has been made stating the surveyed location of the well, the well permit number, and its permitted waste streams. The permittee shall also include in the report the following, prepared and sealed by a licensed professional engineer or licensed professional geoscientist with current registration under the Texas Engineering Practice Act or Texas Geoscience Practice Act:

(A) actual as-built drilling and completion data on the well;

(B) all logging and testing data on the well;

(C) a demonstration of mechanical integrity;

(D) anticipated maximum pressure and flow rate at which the permittee will operate;

(E) results of the injection zone and confining zone testing program as required in §331.62 of this title (relating to Construction Standards) and this subsection;

(F) adjusted formation pressure increase calculations, fluid front calculations and updated cross- sections of the confining and injection zones, based on the data obtained during construction and testing;

(G) the actual injection procedure;

(H) the compatibility of injected wastes with fluids in the injection zone and minerals in both the injection zone and the confining zone and materials used to construct the well;

(I) the calculated area of review and cone of influence based on data obtained during logging and testing of the well and the formation, and where necessary, revisions to the information submitted under §331.121 of this title (relating to Class I Wells);

(J) the status of corrective action required for defective wells in the area of review;

(K) a Well Data Report on forms provided by the executive director;

(L) compliance with the casing and cementing performance standard in §331.62(5) of this title; and

(M) compliance with the cementing requirements in §331.62(6) of this title.

(2) Local authorities. The permittee shall provide written notice to the executive director, in a manner specified by the executive director, that a copy of the permit has been properly filed with the health and pollution control authorities of the county, city, and town where the well is located.

(3) Start-up date and time. The permittee shall notify the executive director in writing of the anticipated well start-up date. Compliance with all pre-operation terms of the permit must occur prior to beginning injection operations. The permittee shall notify the executive director at least 24 hours prior to beginning drilling operations.

(4) Approval of construction and completion. Prior to beginning operations, the permittee must obtain written approval from the executive director, according to §331.45 of this title (relating to Executive Director Approval of Construction and Completion).

(c) Operating reports.

(1) Injection operation quarterly report. For non-commercial facilities only, within 20 days after the last day of the months of March, June, September, and December, the permittee shall

submit to the executive director a quarterly report of injection operation on forms supplied by the executive director. These forms will comply with the reporting requirements of 40 Code of Federal Regulations (CFR) §146.69(a). The executive director may require more frequent reporting.

(2) Injection operation monthly report. Commercial facilities shall meet the following requirements.

(A) The permittee shall submit within 30 days after the last day of each month a report to the commission including the following information for wastes received and injected during the month:

(i) names and locations of the companies and plants generating the wastes;

(ii) chemical and physical characteristics and volume of waste received from each company including pH;

(iii) names of companies transporting the wastes; and

(iv) a log of injection operations for each injection episode including but not limited to time of injection, injection rate, injection pressures, injection fluid volume, injection fluid pH, and injection fluid density.

(B) The permittee shall submit to the commission within 20 days of the last day of each month a report of injection operations on forms provided by the commission. These forms shall comply with the reporting requirements of 40 CFR §146.69(a). The executive director may require more frequent reporting.

(3) Injection zone annual report. For all facilities, the permittee shall submit annually with the December report of injection operation an updated graphic or other acceptable report of the pressure effects of the well upon its injection zone as required by §331.64(h) of this title (relating to Monitoring and Testing Requirements). To the extent this information is reasonably available, the report must also include:

(A) locations of newly constructed or newly discovered wells that penetrate the confining and/or injection zone within the area of review if those wells were not included in the technical report accompanying the permit application or in later reports;

(B) a tabulation of data as required by §331.121(a)(2)(B) of this title for wells within the area of review that penetrate the injection zone or confining zone;

(C) the condition of the wells identified in subparagraph (A) of this paragraph and their effect on the injection activities;

(D) the protocol followed to identify, locate, and ascertain the condition of the wells identified in subparagraph (A) of this paragraph;

(E) a corrective action plan for wells not adequately constructed, completed, or plugged; and

(F) for non-commercial facilities only, a current injection fluid analysis.

(4) Mechanical integrity and other reports. The permittee shall submit within 30 days after test completion, a report including both data and interpretation on the results of:

(A) periodic tests of mechanical integrity; and

(B) any other test of the injection well or injection zone if required by the executive director.

(5) Emergency report of leak or other failure. The permittee shall notify the Underground Injection Control (UIC) Unit of the Austin office of the commission within 24 hours of any significant change in monitoring parameters or of any other observations which could reasonably be attributed to a leak or other failure of the well equipment or injection zone integrity.

(d) Workover reports. Within 30 days after the completion of the workover, a report shall be filed with the executive director including the reason for well workover and the details of all work performed.

(e) Class I Wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals shall comply with the following reporting requirements:

(1) Completion Reports. A new injection well may not commence injection until construction is complete, and

(A) The permittee has submitted notice of completion of construction to the executive director; and

(B) The executive director has inspected or otherwise reviewed the new injection well and finds it is in compliance with the conditions of the permit; or

(C) The permittee has not received notice from the executive director of his intent to inspect or otherwise review the new injection well within 13 days of the date of the notice in paragraph (1)(A) of this subsection, in which case prior inspection or review is waived and the permittee may commence injection. The executive director shall include in his notice a reasonable time period in which he shall inspect the well.

(2) Operating Reports. The owner or operator shall submit reports to the executive director as follows:

(A) Quarterly reports on:

(i) The physical, chemical, and other relevant characteristics of the injection fluids;

(ii) Monthly average, maximum, and minimum values for injection pressure, flow rate and volume, and annular pressure;

(iii) The results from ground-water monitoring wells prescribed in paragraph §331.64(k)(10) of this title (relating to Monitoring and Testing Requirements);

(iv) The results of any test of the injection well conducted by the owner or operator during the reported quarter if required by the executive director; and

(v) Any well work over performed during the reported quarter.

(B) Annual Reports. An annual report to the executive director summarizing the results of monitoring required under §331.64(k)(1)(B) of this title. This summary shall include monthly records of injected fluids and any major changes in characteristics or sources of injected fluid. Previously submitted information may be included by reference.

§331.66. Additional Requirements and Conditions.

(a) This section applies to all Class I wells except for those Class I wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals.

(b) A permit for a Class I well shall include expressly or by reference the following conditions.

(1) A sign shall be posted at the well site which shall show the name of the company, company well number, and commission permit number. The sign and identification shall be in the English language, clearly legible and shall be in numbers and letters at least one inch high.

(2) An all-weather road shall be installed and maintained to allow access to the injection well and related facilities.

(3) The wellhead and associated facilities shall be painted, if appropriate, and maintained in good working order without leaks.

(4) The commission may prescribe additional requirements for Class I wells to protect USDWs, and fresh or surface water from pollution.

(c) Permit requirements for owners or operators of disposal wells which inject wastes which have the potential to react with the injection formation to generate gases shall include:

(1) conditions limiting the temperature, pH, or acidity of the injected wastes; and

(2) procedures necessary to assure that pressure imbalances which might cause a backflow or blowout do not occur.

SUBCHAPTER G: CONSIDERATION PRIOR TO PERMIT ISSUANCE

§331.121

STATUTORY AUTHORITY

The amendment is adopted under Texas Water Code (TWC), §5.103, which provides the commission with the authority to adopt any rules necessary to carry out its powers and duties under this code and other laws of this state and to adopt rules repealing any statement of general applicability that interprets law or policy; §5.105, which authorizes the commission to establish and approve all general policy of the commission by rule; §27.019, which requires the commission to adopt rules reasonably required for the regulation of injection wells; and §27.023, which allows the commission to adopt rules as necessary to implement and administer a general permit authorizing the use of Class I injection wells to inject nonhazardous brine from desalination operations or nonhazardous drinking water treatment residuals.

The amendment implements TWC, §27.023, relating to General Permit Authorizing Use of Class I Injection Wells to Inject Nonhazardous Brine from Desalination Operations or Nonhazardous Drinking Water Treatment Residuals, and TWC, Chapter 27.

§331.121. Class I Wells.

(a) The commission shall consider the following before issuing a Class I Injection Well Permit:

(1) all information in the completed application for permit;

(2) all information in the Technical Report submitted with the application for permit in accordance with §305.45(a)(8) of this title (relating to Contents of Application for Permit).

Subparagraphs (A) - (R) of this paragraph apply to all Class I wells except those Class I Wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals.

Information to be considered includes, but is not limited to:

(A) a map showing the location of the injection well for which a permit is sought and the applicable area of review. Within the area of review, the map must show the number, or name, and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells, and other pertinent surface features, including residences and roads. The map should also show faults, if known or suspected. Only information of public record is required to be included on this map;

(B) a tabulation of all wells within the area of review which penetrate the injection zone or confining zone, and for salt cavern disposal wells, the salt cavern injection zone, salt cavern confining zone and caprock. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of plugging and/or completion, and any additional information the executive director may require;

(C) the protocol followed to identify, locate, and ascertain the condition of abandoned wells within the area of review which penetrate the injection or the confining zones;

(D) maps and cross-sections indicating the general vertical and lateral limits of underground sources of drinking water (USDWs) and freshwater aquifers, their positions relative to the injection formation and the direction of water movement, where known, in each USDW or freshwater aquifer which may be affected by the proposed injection;

(E) maps, cross-sections, and description of the geologic structure of the local area;

(F) maps, cross-sections, and description of the regional geologic setting;

(G) proposed operating data:

(i) average and maximum daily injection rate and volume of the fluid or waste to be injected over the anticipated life of the injection well;

(ii) average and maximum injection pressure;

(iii) source of the waste streams;

(iv) an analysis of the chemical and physical characteristics of the waste streams;

(v) for salt cavern waste disposal, the bulk waste density, permeability, porosity, and compaction rate, as well as the individual physical characteristics of the wastes and transporting media;

(vi) for salt cavern waste disposal, the results of tests performed on the waste to demonstrate that the waste will remain solid under cavern conditions; and

(vii) any additional analyses which the executive director may reasonably require;

(H) proposed formation testing program to obtain an analysis of the chemical, physical, and radiological characteristics of formation fluids, and other information on the injection zone and confining zone;

(I) proposed stimulation program, if needed;

(J) proposed operation and injection procedures;

(K) engineering drawings of the surface and subsurface construction details of the injection well and pre-injection units, except that pre-injection units registered under the provisions of §331.17 of this title (relating to Pre-Injection Units Registration) shall be considered under that section;

(L) contingency plans, based on a reasonable worst case scenario, to cope with all shut-ins; loss of cavern integrity, or well failures so as to prevent migration of fluid into any USDW;

(M) plans (including maps) for meeting the monitoring requirements of this chapter, such plans shall include all parameters, test methods, sample methods, and quality assurance procedures necessary and used to meet these requirements;

(N) for wells within the area of review which penetrate the injection zone or confining zone but are not adequately constructed, completed, or plugged, the corrective action proposed to be taken;

(O) construction procedures including a cementing and casing program, contingency cementing plan for managing lost circulation zones and other adverse subsurface conditions, well materials specifications and their life expectancy, logging procedures, deviation checks, and a drilling, testing, and coring program;

(P) delineation of all faults within the area of review, together with a demonstration, unless previously demonstrated to the commission or to the United States Environmental Protection Agency, that the fault is not sufficiently transmissive or vertically extensive to allow migration of hazardous constituents out of the injection zone;

(Q) the authorization status under this chapter of the pre-injection units for the injection well; and

(R) information demonstrating compliance with the applicable design criteria of Chapter 317 of this title (relating to Design Criteria for Sewerage Systems), for pre-injection units associated with Class I nonhazardous, noncommercial injection wells.

(3) This paragraph applies to those Class I Wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals. Information to be considered includes, but is not limited to:

(A) a map showing the injection well(s) for which a permit is sought and the applicable area of review. Within the area of review, the map must show the number, or name, and location of all producing wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features including residences and roads. The map should also show faults, if known or suspected. Only information of public record is required to be included on this map;

(B) a tabulation of data on all wells within the area of review that penetrate into the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of plugging and/or completion, and any additional information the executive director may require;

(C) a topographic map (or other map if a topographic map is unavailable) extending one mile beyond the property boundaries of the source depicting the facility and each of its

intake and discharge structures; each of its hazardous waste treatment, storage, or disposal facilities; each well where fluids from the facility are injected underground; and those wells, springs, and other surface water bodies, and drinking water wells listed in public records or otherwise known to the applicant within a quarter mile of the facility property boundary;

(D) maps and cross sections indicating the general vertical and lateral limits of all underground sources of drinking water within the area of review, their position relative to the injection formation and the direction of water movement, where known, in each underground source of drinking water which may be affected by the proposed injection;

(E) maps and cross sections detailing the geologic structure of the local area;

(F) generalized maps and cross sections illustrating the regional geologic setting;

(G) proposed operating data:

(i) average and maximum daily rate and volume of the fluid to be injected;

(ii) average and maximum injection pressure; and

(iii) source and an analysis of the chemical, physical, radiological and biological characteristics of injection fluids;

(H) proposed formation testing program to obtain an analysis of the chemical, physical and radiological characteristics of and other information on the receiving formation;

(I) proposed stimulation program;

(J) proposed injection procedure;

(K) schematic or other appropriate drawings of the surface and subsurface construction details of the well;

(L) contingency plans to cope with all shut-ins or well failures so as to prevent migration of fluids into any underground source of drinking water;

(M) plans (including maps) for meeting the monitoring requirements in §331.64 of this title (relating to Monitoring and Testing Requirements);

(N) for wells within the area of review which penetrate the injection zone but are not properly completed or plugged, the corrective action proposed to be taken under §331.45(2)(G) of this title (relating to Executive Director Approval of Construction and Completion); and

(O) construction procedures including a cementing and casing program, logging procedures, deviation checks, and a drilling, testing, and coring program; and

(4) whether the applicant will assure, in accordance with Chapter 37, Subchapter Q of this title (relating to Financial Assurance for Underground Injection Control Wells), the resources necessary to close, plug, abandon, and if applicable, provide post-closure care for the well and/or waste disposal cavern as required;

(5) the closure plan, corrective action plan, and post-closure plan submitted in the technical report accompanying the permit application; except that a post-closure plan is not required for those Class I Wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals; and

(6) any additional information required by the executive director for the evaluation of the proposed injection well.

(b) In determining whether the use or installation of an injection well is in the public interest under Texas Water Code, §27.051(a)(1), the commission shall also consider:

(1) the compliance history of the in accordance with Texas Water Code, §27.051(e) and §281.21(d) of this title (relating to Draft Permit, Technical Summary, Fact Sheet, and Compliance History);

(2) whether there is a practical, economic and feasible alternative to an injection well reasonably available to manage the types and classes of hazardous waste;

(3) if the injection well will be used for the disposal of hazardous waste, whether the applicant will maintain liability coverage for bodily injury and property damage to third parties that is caused by sudden and nonsudden accidents in accordance with Chapter 37 of this title (relating to Financial Assurance); and

(4) that any permit issued for a Class I injection well for disposal of hazardous wastes generated on site requires a certification by the owner or operator that:

(A) the generator of the waste has a program to reduce the volume or quantity and toxicity of such waste to the degree determined by the generator to economically practicable; and

(B) injection of the waste is that practicable method of disposal currently available to the generator which minimizes the present and future threat to human health and the environment.

(c) The commission shall consider the following minimum criteria for siting before issuing a Class I injection well permit for all Class I wells except those Class I Wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals. For Class I Wells authorized to inject only nonhazardous desalination concentrate or nonhazardous drinking water treatment residuals, only paragraph (1) of this subsection applies.

(1) All Class I injection wells shall be sited such that they inject into a formation that is beneath the lowermost formation containing, within 1/4 mile of the wellbore, a USDW or freshwater aquifer.

(2) The siting of Class I injection wells shall be limited to areas that are geologically suitable. The executive director shall determine geologic suitability based upon:

(A) an analysis of the structural and stratigraphic geology, the hydrogeology, and the seismicity of the region;

(B) an analysis of the local geology and hydrogeology of the well site, including, at a minimum, detailed information regarding stratigraphy, structure, and rock properties, aquifer hydrodynamics, and mineral resources; and

(C) a determination that the geology of the area can be described confidently and that limits of waste fate and transport can be accurately predicted through the use of analytical and numerical models.

(3) Class I injection wells shall be sited such that:

(A) the injection zone has sufficient permeability, porosity, thickness, and areal extent to prevent migration of fluids into USDWs or freshwater aquifers;

(B) the confining zone:

(i) is laterally continuous and free of transecting, transmissive faults or fractures over an area sufficient to prevent the movement of fluids into a USDW or freshwater aquifer; and

(ii) contains at least one formation of sufficient thickness and with lithologic and stress characteristics capable of preventing initiation and/or propagation of fractures.

(4) The owner or operator shall demonstrate to the satisfaction of the executive director that:

(A) the confining zone is separated from the base of the lowermost USDW or freshwater aquifer by at least one sequence of permeable and less permeable strata that will provide an added layer of protection for the USDW or freshwater aquifer in the event of fluid movement in an unlocated borehole or transmissive fault; or

(B) within the area of review, the piezometric surface of the fluid in the injection zone is less than the piezometric surface of the lowermost USDW or freshwater aquifer, considering density effects, injection pressures, and any significant pumping in the overlying USDW or freshwater aquifer; or

(C) there is no USDW or freshwater aquifer present;

(D) the commission may approve a site which does not meet the requirements in subparagraphs (A), (B), or (C) of this paragraph if the owner or operator can demonstrate to the commission that because of the geology, nature of the waste, or other considerations, that abandoned boreholes or other conduits would not cause endangerment of USDWs, and fresh or surface water.

(d) The commission shall also consider the following additional information, which must be submitted in the technical report of the application as part of demonstrating that the facility will meet the performance standard in §331.162 of this title (relating to Performance Standard), before issuing a salt cavern Class I injection well permit:

(1) a thorough characterization of the salt dome to establish the geologic suitability of the location, including:

(A) data and interpretation from all appropriate geophysical methods (such as well logs, seismic surveys, and gravity surveys), subject to the approval of the executive director, necessary to:

(i) map the overall geometry of the salt dome, including all edges and any suspected overhangs of the salt stock;

(ii) demonstrate the existence of a minimum distance of 500 feet between the boundaries of the proposed salt cavern injection zone and the boundaries of the salt stock;

(iii) define the composition and map the top and thickness of the sedimentary rock units between the caprock and surface, including the flanks of the salt stock;

(iv) define the composition and map the top and thickness of the caprock overlying the salt stock;

(v) map the top of the salt stock;

(vi) calculate the movement and the salt loss rate of the salt stock;

(vii) define any other caverns and other uses of the salt dome, and address any conditions that may result in potential adverse impact on the salt dome; and

(viii) satisfy any other requirement of the executive director necessary to demonstrate the geologic suitability of the location;

(B) a surface-recorded three-dimensional seismic survey, subject to the following minimum requirements:

(i) the lateral extent of the survey will be determined by the executive director; and

(ii) the survey must provide information as part of demonstrating that the location is geologically suitable for the purpose of meeting the performance standard in §331.162 of this title;

(C) identification of any unusual features, such as depressions or lineations observable at the land surface or within or detectable within the subsurface, which may be indicative of underlying anomalies in the caprock or salt stock, which might affect construction, operation, or closure of the cavern;

(D) the petrology of the caprock, salt stock, and deformed strata; and

(E) for strata surrounding the salt stock, information on their nature, structure, hydrodynamic properties, and relationships to USDWs, including a demonstration that the proposed salt cavern injection zone will not be in or above a formation which within 1/4 mile of the salt cavern injection zone contains a USDW;

(2) establishment of a pre-development baseline for subsidence and groundwater monitoring, over the area of review;

(3) characterization of the predicted impact of the proposed operations on the salt stock, specifically the extent of the disturbed zone;

(4) demonstration of adequate separation between the outer limits of the injection zone and any other activities in the domal area. The thickness of the disturbed zone, as well as any additional safety factors will be taken into consideration; and

(5) the commission will consider the presence of salt cavern storage activities, sulfur mining, salt mining, brine production, oil and gas activity, and any other activity which may adversely affect or be affected by waste disposal in a salt cavern.

(e) Information requirements for Class I hazardous waste injection well permits.

(1) The following information is required for each active Class I hazardous waste injection well at a facility seeking an underground injection control permit:

(A) dates well was operated; and

(B) specification of all wastes that have been injected in the well, if available.

(2) The owner or operator of any facility containing one or more active hazardous waste injection wells must submit all available information pertaining to any release of hazardous waste or constituents from any active hazardous waste injection well at the facility.

(3) The owner or operator of any facility containing one or more active Class I hazardous waste injection wells must conduct such preliminary site investigations as are necessary to determine whether a release is occurring, has occurred, or is likely to have occurred.

(f) Interim Status under the RCRA for Class I hazardous waste injection wells. The minimum state standards which define acceptable injection of hazardous waste during the period of interim status are set out in this chapter. The issuance of an underground injection well permit does not automatically terminate RCRA interim status. A Class I well's interim status does, however, automatically terminate upon issuance of a RCRA permit for that well, or upon the well's receiving a RCRA permit-by-rule under §335.47 of this title (relating to Special Requirements for Persons Eligible for a Federal Permit by Rule). Thus, until a Class I well injecting hazardous waste receives a RCRA permit or RCRA permit-by-rule, the well's interim status requirements are the applicable requirements imposed under this chapter, including any requirements imposed in the UIC permit.

(g) Before issuing a permit for a hazardous waste injection well in a solution-mined salt dome cavern, the commission by order must find that there is an urgent public necessity for the hazardous waste injection well. The commission, in determining whether an urgent public necessity exists for the permitting of the hazardous waste injection well in a solution-mined salt dome cavern, must find that:

(1) the injection well will be designed, constructed, and operated in a manner that provides at least the same degree of safety as required of other currently operating hazardous waste disposal technologies;

(2) consistent with the need and desire to manage the state hazardous wastes generated in the state, there is a substantial or obvious public need for additional hazardous waste disposal capacity and the hazardous waste injection well will contribute additional capacity toward servicing that need;

(3) that the injection well will be constructed and operated in a manner so as to safeguard public health and welfare and protect physical property and the environment;

(4) the has demonstrated that groundwater and surface waters, including public water supplies, will be protected from the release of hazardous waste from the salt dome waste containment cavern; and

(5) any other criteria required by the commission to satisfy that the test of urgency has been met.

**SUBCHAPTER L: GENERAL PERMIT AUTHORIZING USE OF A CLASS I INJECTION
WELL TO INJECT NONHAZARDOUS DESALINATION CONCENTRATE OR
NONHAZARDOUS DRINKING WATER TREATMENT RESIDUALS**

§§331.201, 331.202, 331.203, 331.204, 331.205 and 331.206

STATUTORY AUTHORITY

The new sections are adopted under Texas Water Code (TWC), §5.103, which provides the commission with the authority to adopt any rules necessary to carry out its powers and duties under this code and other laws of this state and to adopt rules repealing any statement of general applicability that interprets law or policy; §5.105, which authorizes the commission to establish and approve all general policy of the commission by rule; §27.019, which requires the commission to adopt rules reasonably required for the regulation of injection wells; and §27.023, which allows the commission to adopt rules as necessary to implement and administer a general permit authorizing the use of Class I injection wells to inject nonhazardous brine from desalination operations or nonhazardous drinking water treatment residuals.

The adopted new sections implement TWC, §27.023, relating to General Permit Authorizing Use of Class I Injection Wells to Inject Nonhazardous Brine from Desalination Operations or Nonhazardous Drinking Water Treatment Residuals, and TWC, Chapter 27.

§331.201. Purpose and Applicability.

(a) The commission may issue a permit to dispose of nonhazardous brine produced by a desalination operation or nonhazardous drinking water treatment residuals in a Class I injection well if the facility meets all the statutory and regulatory requirements for the issuance of a permit for a Class I injection well.

(b) The commission may issue a general permit authorizing the use of a Class I injection well to inject nonhazardous brine from a desalination operation or to inject nonhazardous drinking water treatment residuals if the commission determines that the injection well and injection activities are more appropriately regulated under a general permit than under an individual permit based on findings that:

(1) the general permit has been drafted to ensure that it can be readily enforced and that the commission can adequately monitor compliance with the terms of the general permit; and

(2) the general permit will contain proper safeguards to protect ground and surface fresh water from pollution.

(c) Authorization for the use of an injection well under a general permit does not confer a vested right.

(d) The use or disposal of radioactive material under this subchapter is subject to the applicable requirements of Chapter 336 of this title (relating to Radioactive Substance Rules).

§331.202. Public Notice, Public Meetings, and Public Comment.

(a) Applicability. The requirements of subsections (b) - (e) of this section apply to processing a new general permit, an amendment, renewal, revocation, or cancellation of a general permit.

(b) Notice of a draft general permit shall be published as follows:

(1) Notice shall be published in the *Texas Register* and in at least one newspaper of statewide or regional circulation; and

(2) The public notice shall be published not later than the 30th day before the commission considers the approval of a general permit.

(c) The contents of a public notice of a draft general permit shall:

(1) include the applicable information described in §39.11 of this title (relating to Text of Public Notice);

(2) include an invitation for written comments by the public to the commission regarding the proposed draft general permit; and

(3) specify a comment period of at least 30 days.

(d) Requirements relating to public meetings are as follows:

(1) The agency may hold a public meeting to provide an additional opportunity for public comment and shall hold such a public meeting when the executive director determines, on the basis of requests, that a significant degree of public interest in a draft general permit exists.

(2) Notice of a public meeting shall be by publication in the *Texas Register* not later than the 30th day before the date of the meeting.

(3) Notice of a public meeting shall be mailed to the following:

(A) the county judge of the county or counties in which permittees under the general permit could be located;

(B) persons who filed public comment or request for a public meeting on or before the deadline for filing public comment or request for a public meeting; and

(C) any other person the executive director or chief clerk may elect to include.

(4) The contents of a notice of a public meeting shall include the applicable information described in §39.11 of this title. Each notice must include an invitation for written or oral comments by the public regarding the draft general permit.

(5) The public comment period shall automatically be extended to the close of any public meeting held by the agency on the proposed general permit.

(e) If the agency receives public comment during the comment period relating to issuance of a general permit, the executive director shall respond in writing to these comments, and this response shall be made available to the public and filed with the chief clerk at least ten days before the commission considers the approval of the general permit. The response shall address all written comments received during the comment period and oral or written comments received during any public meeting held by the agency. The commission shall consider all public comment in making its decision and shall either adopt the executive director's response to public comment or prepare its own response.

(1) The commission shall issue its written response to comments on the general permit at the same time the commission issues or denies the general permit.

(2) A copy of any issued general permit and response to comments shall be made available to the public for inspection at the agency's Austin office and also in the appropriate regional offices.

(3) A notice of the commission's action on the proposed general permit and a copy of its response to comments shall be mailed to each person who made a comment during the comment period.

(4) A notice of the commission's action on the proposed general permit and the text of its response to comments shall be published in the *Texas Register*.

§331.203. Authorizations and Notices of Intent.

(a) A person may obtain authorization to use a Class I injection well to inject nonhazardous brine from a desalination operation or to inject nonhazardous drinking water treatment residuals under a general permit by complying with the general permit's conditions. A person shall submit a Notice of Intent to the executive director in a form or format that is specified in the general permit or otherwise set out in commission rules.

(b) The general permit shall describe the content of the Notice of Intent. A Notice of Intent shall be signed in accordance with §305.44 of this title (relating to Signatories to Applications).

(c) The following requirements apply to denial of an authorization or notice of intent.

(1) The executive director shall provide written notice to a facility if the executive director denies the facility's Notice of Intent or authorization to inject waste under a general permit, including, at a minimum, a brief statement of the basis for this decision.

(2) The executive director shall deny authorization to inject waste under an existing general permit for the following reasons:

(A) the quantity of waste to be injected, the type of waste, the type of operation, the injection well design, or the injection well construction does not comply with the general permit;

(B) the person or facility:

(i) has failed to pay any portion of a delinquent fee or charge assessed by the executive director;

(ii) is not in compliance with all requirements, conditions, and time frames specified in an unexpired commission final enforcement order relating to the activity regulated by the general permit; or

(iii) is subject to an unexpired enforcement order that requires the facility to comply with operating conditions different from or additional to the requirements of the general permit.

(3) The executive director may deny authorization to inject or operate an injection well under an existing general permit for reasons including, but not limited to, the following:

(A) the owner and/or the operator of the facility has not filed a Notice of Intent in accordance with §305.43 of this title (relating to Who Applies);

(B) the facility has been determined by the executive director to have been out of compliance with any rule, order, or permit of the commission, including non-payment of fees assessed by the executive director; or

(C) the facility is the subject of an unresolved agency enforcement action in which the executive director has issued a written notice of enforcement.

(4) If authorization to inject waste is denied under this subsection, the executive director may require the person whose authorization is denied to apply for and obtain an individual permit. If the facility is seeking to replace its individual permit with general permit coverage, but the facility's general permit authorization is denied, the facility shall apply for renewal of the individual permit prior to the expiration date of its current individual permit to maintain authorization to inject waste, in accordance with §305.63 of this title (relating to Renewal).

(d) The following requirements apply to suspensions of authorizations and Notices of Intent:

(1) The general permit shall describe the procedures for suspension of authorization and Notices of Intent under a general permit. The general permit shall require the executive director to provide written notice to a permittee that the executive director intends to suspend the permittee's authority to inject waste under a general permit, including:

(A) a brief statement of the basis for this decision under this subsection;

(B) a statement of whether the permittee shall immediately cease injection of waste;

(C) a statement setting the deadline for filing the application for an individual permit; and

(D) a statement that the permittee's waste injection authorization under the general permit shall be suspended on the effective date of the commission's action on the individual permit application unless the commission expressly provides otherwise, or unless the executive director has required the permittee to immediately cease injection of waste.

(2) If a permittee's authorization under a general permit is suspended, the permittee shall immediately cease waste injection.

(3) The executive director may require the person whose authorization to inject or operate an injection well is suspended to apply for and obtain an individual permit.

(4) After providing written notice to the permittee, the executive director shall suspend authorization to inject or operate an injection well under an existing general permit for the following reasons:

(A) the quantity of waste, the type of waste, or the type of operation does not comply with the general permit;

(B) the permittee or facility:

(i) has failed to pay any portion of a delinquent fee or charge assessed by the executive director;

(ii) is not in compliance with all requirements, conditions, and timeframes specified in an unexpired commission final enforcement order relating to the activity regulated by the general permit: or

(iii) is subject to an unexpired enforcement order that requires the facility to comply with operating conditions different from or additional to the requirements of the general permit; and

(C) an application is not received by the deadline specified by rule or in the general permit.

(5) After providing written notice to the permittee, the executive director may suspend authorization to inject waste under an existing general permit for reasons including, but not limited to, the following:

(A) a change has occurred in the availability of demonstrated technology or practices for the prevention, control, or abatement of pollutants applicable to the injection necessary to be implemented to meet applicable federal or state standards;

(B) the owner and/or the operator of the facility has not filed a Notice of Intent in accordance with §305.43 of this title;

(C) circumstances have changed since the time of the Notice of Intent so that injection of waste is no longer appropriately controlled to meet applicable standards under the general permit, or either a temporary or permanent cessation of the authorized waste injection is necessary;

(D) the facility has been determined by the executive director to have been out of compliance with any rule, order, or permit of the commission, including non-payment of fees assessed by the executive director; and

(E) the permittee or facility is the subject of an unresolved agency enforcement action in which the executive director has issued written notice that enforcement has been initiated.

(e) The commission, after hearing, shall deny or suspend a permittee's authority to inject waste under a general permit if the commission determines that the permittee operates any facility for which the permittee's compliance history contains violations constituting a recurring pattern of egregious conduct that demonstrates a consistent disregard for the regulatory process, including a failure to make a timely and substantial attempt to correct the violations. A hearing under this subsection is not subject to Texas Government Code, Chapter 2001.

§331.204. Permit Duration, Amendment, and Renewal.

(a) A general permit may be issued for a term not to exceed ten years. After notice and comment as provided by §331.202 of this title (relating to Public Notice, Public Meetings, and Public Comment), a general permit may be amended, revoked, or canceled by the commission or renewed by the commission for an additional term or terms not to exceed ten years each.

(b) A general permit remains in effect until the commission amends, revokes, cancels or renews the general permit, or until it expires, whichever comes first. If before its expiration, the commission proposes to renew a general permit, the general permit shall remain in effect after the expiration date for those existing permittees covered by the general permit until the date on which the commission takes final action on the proposed permit renewal. No new Notices of Intent will be accepted or new authorizations honored for authorization under the general permit after the expiration date.

(c) Upon issuance of a renewed or amended general permit, all owners or operators, including those covered under the expired general permit, shall submit a Notice of Intent in accordance with the requirements of the new permit.

(d) If the commission has not proposed to renew a general permit at least 90 days before its expiration date, permittees authorized under the general permit shall submit an application for an individual permit before the general permit's expiration. If an application for an individual permit is submitted before the general permit's expiration, authorization under the expired general permit remains in effect until the issuance or denial of an individual permit.

(e) The commission may, through renewal or amendment of a general permit, add or delete requirements or limitations to the permit. The commission may provide in the general permit a reasonable time to allow existing permittees covered by the general permit to make the changes necessary to comply with any additional requirements deemed substantive by the commission.

(f) Before issuing a general permit, the commission shall review the general permit for consistency with the Texas Coastal Management Plan (CMP). The commission must find that the general permit is consistent with the applicable CMP goals and policies and that it will not adversely affect any applicable coastal natural resource areas as identified in the CMP before the commission may issue the general permit.

§331.205. Fees for Notice of Intent and Notice of Change.

(a) A person shall include with the notice of intent requesting coverage under the terms of a general permit issued under this subchapter a fee of \$100 for each disposal well.

(b) A permittee authorized under a general permit issued under this subchapter shall include with each notice of change a fee of \$100 for each disposal well.

§331.206. Annual Fee Assessments.

A person authorized by a general permit shall pay annual facility and waste management fees according to Chapter 335, Subchapter J of this title (relating to Permits for Land Treatment Demonstrations Using Field Tests or Laboratory Analyses) unless specified in the general permit.