The Texas Commission on Environmental Quality (TCEQ, agency, or commission) proposes to amend §§331.2, 331.7, 331.9, and 331.131 and proposes new §§331.262 - 331.267.

Background and Summary of the Factual Basis for the Proposed Rules
This rulemaking implements House Bill (HB) 720, 86th Texas Legislature, 2019, addressing the commission's regulation of aquifer recharge (AR) projects in Texas. HB 720 adds Subchapter H, Aquifer Recharge Projects, to the Texas Water Code (TWC), Chapter 27. The proposed amendments add definitions, authorization mechanisms, standards, and requirements for Class V recharge wells associated with AR projects.

As part of this rulemaking, the commission is proposing amendments to 30 TAC Chapter 39, Public Notice; Chapter 281, Applications Processing; Chapter 295, Water Rights, Procedural; and Chapter 297, Water Rights, Substantive.

Section by Section Discussion
The commission proposes various stylistic, non-substantive changes, such as grammatical corrections and correct uses of references. These changes are non-substantive and are not specifically discussed in this preamble.

§331.2, Definitions
The commission proposes to add §331.2(7)(A) - (E) to define "Aquifer recharge project" to conform to HB 720 and TWC, §27.201(1). The subsequent definitions will be renumbered
accordingly.

The commission proposes to amend renumbered §331.2(51) and (56) to correct the cross-reference from TWC, §27.023 to TWC, §27.025.

The commission proposes to amend renumbered §331.2(93) to add "or an aquifer recharge project" to the definition to conform to TWC, §27.201(3).

The commission proposes to add §331.2(96) to define "Recharge injection well" to conform to TWC, §27.201(4). The subsequent definitions will be renumbered.

§331.7, Permit Required

The commission proposes to amend §331.7(h) to add "or an aquifer recharge (AR) project" to the types of projects for which Class V injection wells may be authorized by rule, individual permit or general permit, to conform to TWC, §27.203(a).

§331.9, Injection Authorized by Rule

The commission proposes to amend §331.9(b)(2)(E) to include reference to proposed Subchapter O (Additional Requirements for Class V Injection Wells Associated with Aquifer Recharge Projects) to implement newly adopted TWC, Chapter 27, Subchapter H.

§331.131, Applicability

The commission proposes to amend §331.131 to include reference to proposed
Subchapter O to implement newly adopted TWC, Chapter 27, Subchapter H.

§331.262, Applicability
The commission proposes new §331.262 to explain that the requirements of current Chapter 331, Subchapter H and proposed new Chapter 331, Subchapter O are both applicable to all Class V AR projects, as established by TWC, §§27.201 - 27.207.

§331.263, Area of Review
The commission proposes new §331.263 to provide the standards applicable to Class V AR projects for the identification and review of activities in the project area that may impact or be impacted by the AR project as established by TWC, §27.203(b) and §27.204(a).

§331.264, Construction and Closure Standards
The commission proposes new §331.264 to provide the construction and closure standards applicable to Class V AR projects as established by TWC, §27.204(a).

§331.265, Operating Requirements
The commission proposes new §331.265(a) – (e) to provide the operating requirements applicable to Class V AR projects, with the primary objectives of preventing the projects from being operated in a manner that endangers underground sources of drinking water and preventing movement of injected fluid into unauthorized zones, as established by TWC, §27.203(b) and §27.204(a).
The commission proposes new §331.265(f) to require all AR injection wells be installed with a flow meter to measure the volume of water injected, a requirement established by TWC, §27.205.

§331.266, Monitoring and Reporting Requirements

The commission proposes new §331.266 to specify the operating functions to be monitored, the monitoring frequency, and the elements to be reported to the executive director for all Class V AR projects, as established by TWC, §27.205 and §27.206.

§331.267, Additional Requirements

The commission proposes new §331.267 to provide additional requirements applicable to Class V AR projects. These requirements include matters to be considered by the commission, as specified by TWC, §27.203(b), and information to be submitted to the executive director by the owner or operator of the AR project. This specific information is necessary to evaluate the requirements established by TWC, §27.203(b) and §27.204(a), and includes information on construction, logging and testing results, and modeling results.

Fiscal Note: Costs to State and Local Government

Jené Bearse, Analyst in the Budget and Planning Division, determined that for the first five-year period the proposed rulemaking is in effect, no fiscal implications are anticipated for the agency or for other units of state or local government as a result of
administration or enforcement of the proposed rulemaking.

This rulemaking addresses necessary changes in order to comply with state law, specifically HB 720. The proposed rules add definitions, authorized mechanisms, standards and requirements for Class V recharge wells associated with AR projects.

**Public Benefits and Costs**

Ms. Bearse determined that for each year of the first five years the proposed rules are in effect, the public benefit anticipated will be compliance with state law. The proposed rulemaking is not anticipated to result in any significant fiscal implications for businesses or individuals.

**Local Employment Impact Statement**

The commission reviewed this proposed rulemaking and determined that a Local Employment Impact Statement is not required because the proposed rulemaking does not adversely affect a local economy in a material way for the first five years that the proposed rules are in effect.

**Rural Communities Impact Assessment**

The commission reviewed this proposed rulemaking and determined that the proposed rulemaking does not adversely affect rural communities in a material way for the first five years that the proposed rulemaking is in effect. The amendments would apply statewide and have the same effect in rural communities as in urban communities.
Small Business and Micro-Business Assessment

No adverse fiscal implications are anticipated for small or micro-businesses due to the implementation or administration of the proposed rulemaking for the first five-year period the proposed rulemaking is in effect.

Small Business Regulatory Flexibility Analysis

The commission reviewed this proposed rulemaking and determined that a Small Business Regulatory Flexibility Analysis is not required because the proposed rulemaking does not adversely affect a small or micro-business in a material way for the first five years the proposed rulemaking is in effect.

Government Growth Impact Statement

The commission prepared a Government Growth Impact Statement assessment for this proposed rulemaking. The proposed rulemaking does not create or eliminate a government program and will not require an increase or decrease in future legislative appropriations to the agency. The proposed rulemaking does not require the creation of new employee positions, eliminate current employee positions, nor require an increase or decrease in fees paid to the agency. The proposed rulemaking does not create, expand, repeal, or limit an existing regulation; however, it does increase the number of individuals subject to its applicability. During the first five years, the proposed rulemaking should not impact positively or negatively the state’s economy.
Draft 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 is not subject to Texas Government Code, §2001.0225. A "Major environmental rule" means a rule with a specific intent 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.

First, the rulemaking does not meet the statutory definition of a "Major environmental rule" because its specific intent is not to protect the environment or reduce risks to human health from environmental exposure. The specific intent of the rulemaking is to implement HB 720 which enacted requirements in TWC, Chapters 11 and 27, for ASR and AR projects.

Second, the rulemaking does not meet the statutory definition of a "Major environmental rule" because the rulemaking will not 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. It is not anticipated that there will be a significant cost to comply with the proposed rules because no new fees are proposed, therefore, the cost will not be significant with respect to the economy as a whole or with respect to a sector of the economy; therefore, the amendment will not adversely affect in a material way the economy, a sector of the economy, productivity,
competition, or jobs. The proposed rulemaking establishes program requirements consistent with the requirements of HB 720, therefore, will not adversely affect in a material way the public health and safety of the state or a sector of the state.

Finally, the rulemaking does not meet any of the four applicability requirements for a "Major environmental rule" 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 the preceding four applicability requirements for the following reasons: this rulemaking does not exceed any standard set by federal law for the commission's Underground Injection Control Program authorized for the state of Texas under the federal Safe Drinking Water Act; does not exceed any express requirement of state law because it is consistent with the requirements of HB 720; does not exceed a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government because it is consistent with the requirements of the commission's Underground Injection Control Program; and is not based solely under the general powers of the agency, but is based specifically under TWC, §27.019, and HB 720, Section 4, as well as, under the other authority of the commission cited in the statutory
Written comments on the Draft Regulatory Impact Analysis Determination may be submitted to the contact person at the address listed under the Submittal of Comments section of this preamble.

**Takings Impact Assessment**

The commission evaluated this rulemaking and performed a preliminary assessment of whether Texas Government Code, Chapter 2007, is applicable. The proposed action implements legislative requirements in HB 720 for aquifer storage or AR projects.

The commission determined that the proposed rules would be neither a statutory nor a constitutional taking of private real property. The proposed rules establish program requirements for AR projects consistent with HB 720. It is not anticipated that there will be many AR project applications and the cost of complying with the regulations is not expected to be substantial because no new fees are proposed. The proposed rules do not affect a landowner’s rights in private real property because this rulemaking does not burden (constitutionally), nor restrict or limit, the owner’s right to property and reduce its value by 25% or more beyond which would otherwise exist in the absence of the regulations.

Therefore, the proposed rules would not constitute a taking under Texas Government Code, Chapter 2007.
**Consistency with the Coastal Management Program**

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

Written comments on the consistency of this rulemaking may be submitted to the contact person at the address listed under the Submittal of Comments section of this preamble.

**Announcement of Hearing**

The commission will hold a public hearing on this proposal in Austin on January 7, 2020, at 10:00 a.m. in Building E, Room 201S, at the commission's central office located at 12100 Park 35 Circle. The hearing is structured for the receipt of oral or written comments by interested persons. Individuals may present oral statements when called upon in order of registration. Open discussion will not be permitted during the hearing; however, commission staff members will be available to discuss the proposal 30 minutes prior to the hearing.

Persons who have special communication or other accommodation needs who are planning to attend the hearing should contact Sandy Wong, Office of Legal Services at (512) 239-1802 or 1-800-RELAY-TX (TDD). Requests should be made as far in advance as
possible.

Submittal of Comments

Written comments may be submitted to Andreea Vasile, MC 205, Office of Legal Services, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087, or faxed to (512) 239-4808. Electronic comments may be submitted at: https://www6.tceq.texas.gov/rules/ecomments/. File size restrictions may apply to comments being submitted via the eComments system. All comments should reference Rule Project Number 2019-116-297-OW. The comment period closes on January 21, 2020. Copies of the proposed rulemaking can be obtained from the commission's website at https://www.tceq.texas.gov/rules/propose_adopt.html. For further information, please contact Carol Dye, Underground Injection Control Permits Section, at (512) 239-1504.
SUBCHAPTER A: GENERAL PROVISIONS

§§331.2, 331.7, 331.9

Statutory Authority

These amendments are proposed under the authority of Texas Water Code (TWC), §5.102, which establishes the commission’s general authority necessary to carry out its jurisdiction; TWC, §5.103, which establishes the commission’s general authority to adopt rules; TWC, §5.105, which establishes the commission’s authority to set policy by rule; TWC, §5.120, which authorizes the commission to administer the law so as to promote the judicious use and maximum conservation and protection of the environment and natural resources of the state; TWC, §27.003, which allows the commission to use all reasonable methods to implement its policy of maintaining the quality of fresh water in the state of Texas; TWC, §27.011, which establishes the commission's jurisdiction over certain injection well permits; TWC, §27.019, which specifically authorizes the commission to adopt rules and procedures necessary for performance of its powers, duties, and functions under TWC, Chapter 27; and, House Bill (HB) 720, Section 4, which authorizes and directs the commission to adopt rules implementing TWC, §11.157 and §11.158 and TWC, Chapter 27, Subchapter H.

The proposed amendments implement HB 720.

§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 any of the following:

   (A) an injection well for disposal of waste;

   (B) an injection or production well for the recovery of minerals;

   (C) a monitor well at a Class III injection well site;

   (D) pre-injection units for processing or storage of waste; or

   (E) any other class of injection well regulated by the commission.

(3) Affected person--Any person who has a personal justiciable interest related to a legal right, duty, privilege, power, or economic interest 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 recharge project--A project involving the intentional recharge of an aquifer by means of an injection well authorized under this chapter or other means of infiltration, including actions designed to:

(A) reduce declines in the water level of the aquifer;

(B) supplement the quantity of groundwater available;

(C) improve water quality in an aquifer;

(D) improve spring flows and other interactions between groundwater and surface water; or

(E) mitigate subsidence.
(8) [7] Aquifer restoration--The process used to achieve or exceed water quality levels established by the commission for a permit/production area.

(9) [8] Aquifer storage and recovery--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.

(10) [9] Aquifer storage and recovery injection well--A Class V injection well used for the injection of water into a geologic formation as part of an aquifer storage and recovery project.

(11) [10] Aquifer storage and recovery production well--A well used for the production of water from a geologic formation as part of an aquifer storage and recovery project.

(12) [11] Aquifer storage and recovery project--A project involving the injection of water into a geologic formation for the purpose of subsequent recovery and beneficial use by the project operator.

(13) [12] 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.

(14) Area permit--A permit that authorizes the construction and operation of two or more similar injection, production, or monitoring wells used in operations associated with Class III well activities within a specified area.

(15) 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.

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

(17) 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).

(18) Bedded salt--A geologic formation, group of formations, or part of a formation consisting of non-domal salt that is layered and may be interspersed with
non-salt sedimentary materials such as anhydrite, shale, dolomite, and limestone. The salt layers themselves often contain significant impurities.

(19) [18] Bedded salt cavern disposal well--A well or group of wells and connecting storage cavities which have been created by solution mining, dissolving or excavation of salt bearing deposits or other geological formations and subsequently developed for the purpose of disposal of nonhazardous drinking water treatment residuals.

(20) [19] Blanket material or blanket pad--A fluid placed within a salt cavern that is lighter than the water in the cavern and will not dissolve the salt or any mineral impurities that may be contained within the salt. The function of the blanket is to prevent unwanted leaching of the salt cavern roof, prevent leaching of salt from around the cemented casing, and to protect the cemented casing from internal corrosion. Blanket material typically consists of crude oil, mineral oil, or some fluid possessing similar noncorrosive, nonsoluble, low density properties. The blanket material is placed between the salt cavern's outermost hanging string and innermost cemented casing.

(21) [20] Buffer area--The area between any mine area boundary and the permit area boundary.

(22) [21] 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 (CaCO₃), anhydrite (CaSO₄), and accessory minerals. Caprocks often contain lost
circulation zones characterized by rock layers of high porosity and permeability.

(23) [(22)] 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.

(24) [(23)] Casing--Material lining used to seal off strata at and below the
earth's surface.

(25) [(24)] 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.

(26) [(25)] Cementing--The operation whereby cement is introduced into a
wellbore and/or forced behind the casing.

(27) [(26)] Cesspool--A drywell that receives untreated sanitary waste
containing human excreta, and which sometimes has an open bottom and/or perforated
sides.
(28) [(27)] Commercial facility--A Class I permitted facility, where one or more commercial wells are operated.

(29) [(28)] 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.

(30) [(29)] 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.

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

(32) [(31)] 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.
(33) 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.

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

(35) Control parameter--Any physical parameter or chemical constituent of groundwater monitored on a routine basis used to detect or confirm the presence of mining solutions in a designated monitor well. Monitoring includes measurement with field instrumentation or sample collection and laboratory analysis.

(36) 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.

(37) Desalination concentrate--Same as desalination brine.

(38) Desalination operation--A process which produces water of usable quality by desalination.
(39) (39) Disposal well--A well that is used for the disposal of waste into a subsurface stratum.

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

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

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

(43) (42) 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.

(44) (43) 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.
(45) [(44)] Excursion--The movement of mining solutions, as determined by analysis for control parameters, into a designated monitor well.

(46) [(45)] 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).

(47) [(46)] Fluid--Material or substance which flows or moves whether in a semisolid, liquid, sludge, gas, or any other form or state.

(48) [(47)] Formation--A body of rock characterized by a degree of lithologic homogeneity which is prevailing in, but not necessarily, tabular and is mappable on the earth’s surface or traceable in the subsurface.

(49) [(48)] Formation fluid--Fluid present in a formation under natural conditions.

(50) [(49)] 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 chapter, 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.

(51) [50] 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, §27.025 [§27.023].

(52) [51] Groundwater--Water below the land surface in a zone of saturation.
(53) Groundwater protection area--A geographic area (delineated by the state under federal 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.

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

(55) 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.

(56) 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, §27.025 [§27.023]).

(57) 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.
(58) [(57)] 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.

(59) [(58)] 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.

(60) [(59)] Injection zone--A formation, a group of formations, or part of a formation that receives fluid through a well.

(61) [(60)] 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.

(62) [(61)] 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.

(63) [(62)] Large capacity cesspool--A cesspool that is designed for a flow of greater than 5,000 gallons per day.
(64) [(63)] Large capacity septic system--A septic system that is designed for a flow of greater than 5,000 gallons per day.

(65) [(64)] 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.

(66) [(65)] 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.

(67) [(66)] 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.

(68) [(67)] 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."

(69) [(68)] Mine area--The area defined by a line through the ring of designated monitor wells installed to monitor the production zone.
(70) [(69)] Mine plan--A plan for operations at a mine, consisting of:

(A) a map of the permit area identifying the location and extent of existing and proposed production areas; and

(B) an estimated schedule indicating the sequence and timetable for mining and any required aquifer restoration.

(71) [(70)] Monitor well--Any well used for the sampling or measurement with field instrumentation of any chemical or physical property of subsurface strata or their contained fluids. The term "monitor well" shall have the same meaning as the term "monitoring well" as defined in Texas Water Code, §27.002.

(A) Designated monitor wells are those listed in the production area authorization for which routine water quality sampling or measurement with field instrumentation 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.
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.

Native groundwater--Groundwater naturally occurring in a geologic formation.

New injection well--Any well, or group of wells, not an existing injection well.

New waste stream--A waste stream not permitted.

Non-commercial facility--A Class I permitted facility which operates only non-commercial wells.

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

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.
(79) [(78)] 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.

(80) [(79)] Notice of intent (NOI)--A written submittal to the executive
director requesting coverage under the terms of a general permit.

(81) [(80)] Off-site--Property which cannot be characterized as on-site.

(82) [(81)] 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.

(83) [(82)] 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.
(84) [(83)] Permit area--The area owned or under lease by the permittee which may include buffer areas, mine areas, and production areas.

(85) [(84)] 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.

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

(87) [(86)] 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.

(88) [(87)] 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.

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

(90) [(89)] Production area authorization--An authorization, issued under the terms of a Class III injection well area permit, approving the initiation of mining activities in a specified production area within a permit area, and setting specific conditions for production and restoration in each production area within an area permit.

(91) [(90)] Production well--A well used to recover uranium through in situ solution recovery, including an injection well used to recover uranium. The term does not include a well used to inject waste.

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

(93) [(92)] Project operator--A person holding an authorization by rule, individual permit, or general permit to undertake an aquifer storage and recovery project or an aquifer recharge project.
(94) 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 of this title (relating to Definitions).

(95) 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.

(96) Recharge injection well--A Class V injection well used for the injection of water into a geologic formation for an aquifer recharge project, including an improved sinkhole or cave connected to an aquifer.

(97) Registered Well--A well registered in accordance with the requirements of §331.221 of this title (relating to Registration of Wells).

(98) 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.

(99) Restored aquifer--An aquifer whose local groundwater quality, within a production area, has, by natural or artificial processes, returned to the
restoration table values established in accordance with the requirements of §331.107 of this title (relating to Restoration).

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

(101) [(99)] 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 of Texas, 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 nonhazardous, industrial, or municipal waste into a salt cavern for the purpose of storage or disposal of the waste.

(102) [(100)] Salt dome--A geologic structure that includes the caprock, salt stock, and deformed strata surrounding the salt stock.

(103) [(101)] Salt dome cavern confining zone--A zone between the salt dome 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 dome 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 dome cavern injection zone or any portion of the salt stock occupied by a UIC Class II or Class III salt dome cavern or its disturbed salt zone.

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

(105) [(103)] Salt dome cavern injection zone--The void space of a salt dome cavern that receives waste through a well, plus that portion of the salt stock enveloping the salt dome 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.

(106) [(104)] 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.
(107) [(105)] 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.

(108) [(106)] 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.

(109) [(107)] Stratum--A sedimentary bed or layer, regardless of thickness, that consists of generally the same kind of rock or material.

(110) [(108)] 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).

(111) [(109)] Surface casing--The first string of casing (after the conductor casing, if any) that is set in a well.
(112) [(110)] 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.

(113) [(111)] 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.

(114) [(112)] Transmissive fault or fracture--A fault or fracture that has sufficient permeability and vertical extent to allow fluids to move between formations.

(115) [(113)] Underground injection--The subsurface emplacement of fluids through a well.

(116) [(114)] Underground injection control--The program under the federal Safe Drinking Water Act, 42 United States Code, Part C, including the approved Texas state program.

(117) [(115)] 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.

(118) [(116)] 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.

(119) [(117)] Verifying analysis--A second sampling and analysis or measurement with instrumentation of control parameters for the purpose of confirming a routine sample analysis or measurement 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.

(120) [(118)] 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.
Well injection--The subsurface emplacement of fluids through a well.

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.

Well stimulation--Several processes used to clean the well bore, enlarge channels, and increase pore space in the injection interval, thus making it possible for fluid to move more readily into the formation including, but not limited to, surging, jetting, and acidizing.

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) Regardless of [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 subsection is subject to the applicable requirements of Chapter 336 of this title.
(g) Permits issued before September 1, 2007 for Class III wells for uranium mining will expire on September 1, 2012 unless the permit holder submits an application for permit renewal under §305.65 of this title (relating to Renewal) before September 1, 2012. Any holders of permits for Class III wells for uranium mining issued before September 1, 2007 who allow those permits to expire by not submitting a permit renewal application by September 1, 2012 are not relieved from the obligations under the expired permit or applicable rules, including obligations to restore groundwater and to plug and abandon wells in accordance with the requirements of the permit and applicable rules.

(h) Class V injection wells associated with an aquifer storage and recovery (ASR) project or an aquifer recharge project may be authorized by individual permit, general permit, or by rule. The executive director will notify a groundwater conservation district of an ASR project proposed to be authorized by rule that is located within the jurisdictional boundary of that groundwater conservation district.

§331.9. Injection Authorized by Rule.

(a) Plugging and abandonment of a well authorized by rule at any time after January 1, 1982, shall be accomplished in accordance with the standards of §331.46 of this title (relating to Closure Standards). Class V wells shall be closed according to standards under §331.133 of this title (relating to Closure Standards for Injection Wells). Motor vehicle waste disposal wells, large capacity septic systems, large capacity cesspools, subsurface fluid distribution systems, and drywells shall be closed according

(b) Injection into Class V wells, unless otherwise provided in subsection (c) of this section, §331.7 of this title (relating to Permit Required), or §331.137 of this title (relating to Permit for Motor Vehicle Waste Disposal Wells), is authorized under this rule.

(1) Well authorization under this section expires upon the effective date of a permit issued under §331.7 of this title.

(2) An owner or operator of a Class V well is prohibited from injecting into the well:

(A) upon the effective date of permit denial;

(B) upon failure to submit a permit application in a timely manner under subsection (c) of this section;

(C) upon failure to submit inventory information in a timely manner under §331.10 of this title (relating to Inventory of Wells Authorized by Rule);
(D) upon failure to comply with a request for information from the executive director in a timely manner;

(E) upon failure to comply with provisions contained in Subchapter H of this chapter (relating to Standards for Class V Wells) and, if applicable, Subchapter K of this chapter (relating to Additional Requirements for Class V Injection Wells Associated with Aquifer Storage and Recovery Projects) or Subchapter O of this chapter (relating to Additional Requirements for Class V Injection Wells Associated with Aquifer Recharge Projects); or

(F) upon failure of the owner or operator to comply with provisions contained in paragraph (3) of this subsection for a Class V well that is authorized to inject certain wastes into a Class II disposal well permitted by the Railroad Commission of Texas.

(3) Unless otherwise provided in subsection (c) of this section, a disposal well authorized by an active Class II permit issued by the Railroad Commission of Texas whose operator has an active Form P-5 Organization Report in good standing with the Railroad Commission of Texas may be authorized by rule of the commission as a Class V injection well for the disposal by injection of nonhazardous brine from a desalination operation or nonhazardous drinking water treatment residuals.
(A) Subchapter H of this chapter and subsection (a) of this section are not applicable to a Class V well authorized by rule under this paragraph.

(B) 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).

(c) The executive director may require the owner or operator of an injection well authorized by rule to apply for and obtain an injection well permit. The owner or operator shall submit a complete application within 90 days after the receipt of a letter from the executive director requesting that the owner or operator of an injection well submit an application for permit. Cases for which a permit may be required include, but are not limited to, wells not in compliance with the standards required by this section.

(d) Class IV wells injecting hazardous waste-contaminated groundwater that is of acceptable quality to aid remediation and that is being reinjected into the same formation from which it was drawn, as authorized by §331.6 of this title (relating to Prohibition of Class IV Well Injection), shall be authorized by rule.
SUBCHAPTER H: STANDARDS FOR CLASS V WELLS

§331.131

Statutory Authority

This amendment is proposed under the authority of Texas Water Code (TWC), §5.102, which establishes the commission’s general authority necessary to carry out its jurisdiction; TWC, §5.103, which establishes the commission’s general authority to adopt rules; TWC, §5.105, which establishes the commission’s authority to set policy by rule; TWC, §5.120, which authorizes the commission to administer the law so as to promote the judicious use and maximum conservation and protection of the environment and natural resources of the state; TWC, §27.003, which allows the commission to use all reasonable methods to implement its policy of maintaining the quality of fresh water in the state of Texas; TWC, §27.011, which establishes the commission's jurisdiction over certain injection well permits; TWC, §27.019, which specifically authorizes the commission to adopt rules and procedures necessary for performance of its powers, duties, and functions under TWC, Chapter 27; and House Bill (HB) 720, Section 4, which authorizes and directs the commission to adopt rules implementing TWC, §11.157 and §11.158 and TWC, Chapter 27, Subchapter H.

The proposed amendment implements HB 720.

§331.131. Applicability.
This subchapter applies to all Class V injection wells under the jurisdiction of the commission except those Class V wells authorized by rule under §331.9(b)(3) of this title (relating to Injection Authorized by Rule). Aquifer storage and recovery injection wells must also comply with Subchapter K of this chapter (relating to Additional Requirements for Class V Injection Wells Associated with Aquifer Storage and Recovery Projects) in addition to this subchapter. Aquifer recharge injection wells must also comply with Subchapter O of this chapter (relating to Additional Requirements for Class V Injection Wells Associated with Aquifer Recharge Projects) in addition to this subchapter.
SUBCHAPTER O: ADDITIONAL REQUIREMENTS FOR CLASS V INJECTION WELLS
ASSOCIATED WITH AQUIFER RECHARGE PROJECTS

§§331.262 - 331.267

Statutory Authority
The new sections are proposed under the authority of Texas Water Code (TWC), §5.102, which establishes the commission's general authority necessary to carry out its jurisdiction; TWC, §5.103, which establishes the commission's general authority to adopt rules; TWC, §5.105, which establishes the commission's authority to set policy by rule; TWC, §5.120, which authorizes the commission to administer the law so as to promote the judicious use and maximum conservation and protection of the environment and natural resources of the state; TWC, §27.003, which allows the commission to use all reasonable methods to implement its policy of maintaining the quality of fresh water in the state of Texas; TWC, §27.011, which establishes the commission's jurisdiction over certain injection well permits; TWC, §27.019, which specifically authorizes the commission to adopt rules and procedures necessary for performance of its powers, duties, and functions under TWC, Chapter 27; and House Bill (HB) 720 Section 4, which authorizes and directs the commission to adopt rules implementing TWC, §11.157 and §11.158 and TWC, Chapter 27, Subchapter H.

The proposed new sections implement HB 720.
§331.262. **Applicability.**

In addition to the requirements of Subchapter H of this chapter (relating to Standards for Class V Wells), the requirements of this subchapter apply to all Class V aquifer recharge projects, whether by means of an injection well or improved sinkhole or cave connected to an aquifer.

§331.263. **Area of Review.**

The area of review for an aquifer recharge (AR) project is the area determined by a radius of at least 1/2 mile from the proposed AR injection well. For an AR project that includes more than one proposed AR injection well, the area of review is the area determined by a radius of at least 1/2 mile from the centroid of the AR injection well field. In the application for authorization, the applicant shall provide information on the activities within the area of review, including the following factors and any adverse interactions between the factors and the AR project:

(1) locations of:

(A) all artificial penetrations that penetrate the injection interval, including but not limited to: water wells and abandoned water wells from commission well files or groundwater district files; oil and gas wells and saltwater injection wells from
the Railroad Commission of Texas files; and waste disposal wells/other injection wells from the commission disposal well files; and

(B) springs, quarries, and any other bodies of water, surface or subsurface features that connect to the injection interval;

(2) completion and construction information, where available, for identified artificial penetrations;

(3) site-specific, significant geologic features, such as faults and fractures;

(4) land surface elevations for projects used to mitigate subsidence;

(5) land use in the drainage basin and geographic extent of the drainage basin for projects using improved sinkholes and caves; and

(6) all information required for the consideration of an AR injection well under §331.267(a) of this title (relating to Additional Requirements).

§331.264. Construction and Closure Standards.

All Class V aquifer recharge (AR) injection wells shall be designed, constructed, completed, and closed to prevent commingling, through the wellbore and casing, of
injection waters with other fluids outside of the authorized injection zone; mixing through the wellbore and casing of fluids from aquifers of substantively different water quality; and infiltration through the wellbore and casing of water from the surface into groundwater zones.

(1) Plans and specifications. Except as specifically required in the terms of the Class V AR injection well authorization, the drilling and completion of a Class V AR injection well shall be done in accordance with the requirements of §331.132 of this title (relating to Construction Standards) and the closure of a Class V AR injection well shall be done in accordance with the requirements of §331.133 of this title (relating to Closure Standards for Injection Wells).

(A) If the project operator proposes to change the injection interval to one not reviewed and approved during the authorization process, the project operator shall notify the executive director immediately. The project operator may not inject into any unauthorized zone without prior written approval from the executive director.

(B) The executive director shall be notified immediately of any other changes, including but not limited to, changes in the completion of the AR injection well, changes in the setting of screens, and changes in the injection intervals within the authorized injection zone.
(2) Construction materials. Casing materials for Class V AR injection wells shall be constructed of materials resistant to corrosion.

(3) Construction and workover supervision. All phases of any AR injection well construction, workover or closure shall be supervised by qualified individuals who are knowledgeable and experienced in practical drilling engineering, as applicable, and who are familiar with the special conditions and requirements of injection well and water well construction.

§331.265. Operating Requirements.

(a) All Class V aquifer recharge (AR) injection wells shall be operated in such a manner that injection will not endanger drinking water sources. Underground injection endangers drinking water sources if such injection may result in the presence of any contaminant in underground water which supplies or can reasonably be expected to supply any public water system, and if the presence of such contaminant may result in such system's not complying with any national primary drinking water regulation, or may otherwise adversely affect the health of persons.

(b) Injection pressure and volume at the wellhead shall not exceed a maximum which shall be calculated so as to assure the pressure and volume in the injection zone does not cause movement of fluid out of the injection zone.
(c) The owner or operator of an AR injection well that has ceased operations for more than two years shall provide verification of the well’s mechanical integrity and notification of intent to resume operations to the executive director at least 30 days prior to resuming operation of the well.

(d) The owner or operator shall maintain the mechanical integrity of all wells operated under this section.

(e) The quality of the water injected at an AR injection well must meet the requirements in §331.267(a)(1) of this title (relating to Additional Requirements).

(f) All AR injection wells must be installed with a flow meter for measuring the volume of water injected.

§331.266. Monitoring and Reporting Requirements.

(a) An aquifer recharge (AR) project operator shall monitor each AR injection well associated with an AR project. Each calendar year the project operator shall provide the executive director a written report of the following information for the previous year:

(1) the volume of water injected for recharge; and
(2) other information as determined by the executive director as necessary for the protection of underground sources of drinking water.

(b) At least on an annual basis and each time the source changes, an AR project operator shall perform water-quality testing on water to be injected at an AR injection well. All environmental laboratory analyses shall be performed by laboratories accredited under the Texas Laboratory Accreditation Program using National Environmental Laboratory Accreditation Conference standards. The AR project operator shall provide to the executive director a written report of the results of this testing. The report shall include the test results for all water-quality parameters identified in the individual permit, general permit, or authorization by rule.

§331.267. Additional Requirements.

(a) The executive director or commission shall consider the following before issuing an individual permit, a general permit, or an authorization by rule for an aquifer recharge (AR) injection well:

(1) whether the injection of water will comply with the standards set forth under the federal Safe Drinking Water Act (42 United States Code, §§300f, et seq);

(2) the effect of the AR project on existing water wells:
(3) the effect of the AR project on existing springs and other surface features that connect to the injection interval; and

(4) whether the introduction of water into the receiving geologic formation will alter the physical, chemical, or biological quality of the native groundwater to a degree that would:

(A) render the groundwater produced from the receiving formation harmful or detrimental to people, animals, vegetation, or property; or

(B) require an unreasonably higher level of treatment of the groundwater produced from the receiving geologic formation than is necessary before AR project initiation for the native groundwater to render the groundwater suitable for beneficial use.

(b) Upon completion of an AR injection well, the following information, as applicable, shall be submitted to the executive director within 30 days of receipt of the results of all analyses and test results:

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

(2) all logging and testing data on the well;
(3) formation fluid analyses;

(4) injection fluid analyses;

(5) injectivity and pumping tests determining well capacity and reservoir characteristics;

(6) hydrogeologic modeling, with supporting data, predicting the results of injection fluid interaction with the receiving formation and the native groundwater, and predicting injection fluid movement; and

(7) other information as determined by the executive director as necessary for the protection of underground sources of drinking water.