# Subchapter N: RECLAIMED WATER FACILITIES AND DISTRIBUTION SYSTEMS

# §§217.350 – 217.375

# Statutory Authority

[Language drafted and provided for inclusion by OLS attorney assigned to this rulemaking project (this should be done simultaneously while the Fiscal Note information is being drafted (if not before)).

**Note:**  The **1st paragraph** of a Statutory Authority should state what the rules are proposed "under the authority of," and the **2nd paragraph** should list (no titles) any bills, statutes (state or federal) the rules implement.]

**RULE OF THUMB**: for existing rules/sections, language must have been downloaded from 30 Texas Administrative Code as this is the *official* version of the rules.

* **NEW language**: to designate language that is *new* to 30 TAC, you ***must*** underline new language that does *not* currently exist in TAC, including punctuation
* **Delete existing language**: to designate existing language in 30 TAC that is *obsolete, no longer required/needed*, [you ***must*** place that language between brackets]in order to show deletion of that language from 30 TAC
* new language before [old language]

# §217.350. Applicability.

This subchapter applies to the design, construction, operation, maintenance, and testing of reclaimed water distribution systems conveying either Type I or Type II reclaimed water.

# §217.351.

An owner who plans to install a reclaimed water distribution system located over the Edwards Aquifer recharge zone, as defined in §213.3 of this title (relating to Definitions), must design and install the reclaimed water distribution system in accordance with Chapter 213 of this title (relating to Edwards Aquifer), in addition to this subchapter. The completed reclaimed water distribution system design must be submitted to the Edwards Aquifer Protection Program (EAPP) for review and approval.

# §217.360. Reclaimed Water Facilities.

A reclaimed water distribution system must provide reclaimed water of the type and quality as listed in 30 TAC Chapter 210 to all respective users of the water.

(a) In accordance with §217.6 of this title (relating to Submittal Requirements and Review Process), the design of a distribution system that will convey reclaimed water to a user must be submitted, reviewed, and approved in writing by the executive director before the distribution system may be used.

(b) A municipality may be the review authority in accordance with §217.8 of this title (relating to Municipality Reviews) and may approve a reclaimed water distribution system.

(c) A distribution system designed to transport Type II reclaimed water, as defined by §210.33(2) of this title (relating to Quality Standards for Using Reclaimed Water), must comply with this subchapter, as applicable to the project.

(d) A distribution system designed to transport Type I reclaimed water, as defined by §210.33(1) of this title must meet the requirements of subsections (e) - (j) of this section.

(e) Type I reclaimed water gravity pipes must comply with §§217.53 - 217.55, 217.58, and 217.59 of this title (relating to Pipe Design; Criteria for Laying Pipe; Manholes and Related Structures; Testing Requirements for Manholes; and Lift Station Site Requirements). Type I reclaimed water pipe design must prevent pipe and bedding displacement.

(f) Each appurtenance designed to handle reclaimed water must be identified in the plans and the engineering report.

(1) An above-ground hose bib, spigot, or other hand-operated connection is prohibited, except in a lockable, secured area that is only accessible to authorized personnel.

(2) An underground hose bib must:

(A) be located in a locked, below-grade vault, or be operated only by a special tool in a non-lockable, underground service box;

(B) be clearly labeled "NON-POTABLE WATER, DO NOT DRINK" and "NO BEBA EL AGUA;"

(C) be purple; and

(D) be designed to prevent a connection to a standard water hose.

(3) Reclaimed water storage areas, hose bibs, and spigots must include signs in both English and Spanish reading "NON-POTABLE WATER, DO NOT DRINK" and "NO BEBA EL AGUA."

(g) Cross Connection Control and Separation Distances.

(1) A Type I reclaimed water pipe must be at least 4.0 feet from a potable water pipe, as measured from the outside surface of each of the respective pipes.

(2) A physical connection between a potable water pipe and a reclaimed water pipe is prohibited.

(3) Backflow prevention must be provided for all potable water connections to prevent any possibility of reclaimed water entering a drinking water system according to the requirements of §217.330 of this title (relating to Drinking Water Supply Connections).

(4) Where a 4.0-foot separation distance cannot be achieved, a reclaimed water pipe must meet the requirements of subparagraph (A) of this paragraph if the reclaimed water pipe runs parallel to the potable water pipe or subparagraph (B) of this paragraph if the reclaimed water pipe crosses the potable water pipe.

(A) If a new Type I reclaimed water pipe is installed parallel to an existing potable water pipe, the reclaimed water pipe must:

(i) be located below the potable water pipe and maintain a horizontal separation distance of no less than 3.0-feet;

(ii) have a minimum pipe stiffness of 115 pounds per square inch (psi) with compatible joints, or a pressure rating of 150 psi for both pipe and joints; and

(iii) be embedded in cement stabilized sand that meets the requirements of subparagraph (D) of this paragraph.

(B) If a new Type I reclaimed water pipe crosses a potable water pipe, the design of the reclaimed water pipe must:

(i) include one full segment of reclaimed water pipe that is centered on the potable water pipe such that the joints of the reclaimed water pipe are equidistant from the center point of the potable water pipe;

(ii) cross the potable water pipe at a point that is equidistant between the joints of the potable water pipe; and

(iii) have a separation of at least six inches between the outsides of the pipes.

(C) A Type I reclaimed water pipe must have either a pressure rating of 150 psi for both pipe and joints or a pipe stiffness of at least 115 psi with compatible joints for a minimum distance of 4.0 feet in each direction, as measured perpendicularly from any point on the potable water pipe to the Type I reclaimed water pipe.

(D) All portions of reclaimed water pipe within 4.0 feet of a potable water pipe must be embedded in cement stabilized sand that:

(i) has a minimum content of 10% cement, based on loose dry weight volume;

(ii) is installed a minimum of 6.0 inches above and one quarter of the pipe diameter on either side and below a reclaimed water pipe.

(h) Site Selection of Type I Reclaimed Water Pump Stations. A design must comply with §217.59(a) - (c) of this title.

(i) Design of Type I Reclaimed Water Pump Stations. A design must comply with §§217.60(d) and (g); 217.61(d); and 217.62(a) and (c) of this title (relating to Lift Station, Wet Well, and Dry Well Designs; Lift Station Pumps; and Lift Station Pipes), and paragraphs (1) - (3) of this subsection.

(1) Pump Controls.

(A) All electrical equipment must be protected from a 100-year flood event and be protected from potential flooding from a wet well.

(B) Motor control centers must be mounted at least 4.0 inches above grade to prevent water intrusion and corrosion from standing water in the enclosure.

(2) Pumps.

(A) A pump support must prevent movement or vibration during operation.

(B) A submersible pump must use a rail-type pump support incorporating manufacturer-approved mechanisms designed to allow an operator to readily remove and replace any single pump without first entering or dewatering the wet well.

(C) Submersible pump rails and lifting chains must be made of a material that is equivalent to Series 300 stainless steel at minimum.

(3) Pump Station Valves.

(A) The discharge side of each pump must include a check valve followed by a full-closing isolation valve.

(B) Check valves must be swing type with an external lever or external position indicator to show the open and closed positions.

(C) All valve types other than rising stem gate valves must include a position indicator to show the open and closed positions.

(j) Force Main Pipe for Type I Reclaimed Water. A force main pipe for Type I reclaimed water must comply with §§217.54, 217.64, 217.65, 217.67(a) - (c) and (e), and 217.68 of this title (relating to Criteria for Laying Pipe; Materials for Force Main Pipes; Force Main Pipe Joints; Force Main Design; and Force Main Testing) and the following:

(1) A valve casing for an underground isolation valve must include "REUSE" or "NPW" cast into its lid.

(2) A force main pipe must either be purple in color or be contained in an 8.0 mils thick purple polyethylene sleeve conforming to American Water Works Association C105, Class C. In-line isolation valves for reuse pipes must open clockwise to distinguish them from potable water isolation valves.

# §217.365. Storage Tanks for Reclaimed Water.

Ground level storage tanks and elevated storage tanks for reclaimed water must be designed, installed, and constructed in accordance with the American Water Works Association standards with reference to materials and construction practices, except for health-based standards strictly related to potable water storage and contact practices.

**§217.372 Reclaimed Water Pressure Planes**

1. A reclaimed water distribution system may consist of one or more pressure planes to provide reclaimed water to users. The minimum required pressure at all points within the distribution network is 35 psi at flowrates of at least 1.5 gpm per connection can be achieved and maintained through the use of elevated storage tanks, service pumps taking suction from ground storage tanks, and booster pumps taking suction directly from distribution;
2. The minimum required capacity of the storage tanks and pumps will depend on the number of connections a pressure plane services and the maximum/peak daily demand;
3. When a reclaimed water system is intended to provide water for fire fighting capability is must also be designed to maintain a minimum pressure of 20 psi under combined fire fighting and standard reclaimed water use
4. Reclaimed water lines solely distributing reclaimed water to storage ponds, or tanks are exempt for the pressure plane requirements

**§217.373 Reclaimed Water Distribution System Design**

1. Minimum reclaimed waterline sizes depend on the number of reclaimed water service connections
2. The minimum pressure of 35 psi must be maintained at all points in the distribution system at flowrates of at least 1.5 gpm per connection
3. Air release devices must be installed in the distribution system at all points where topography or other factors may create air locks in the lines. Air release devices shall be installed in such a manner as to preclude the possibility of submergence entrance of contaminants.

**§217.374 Looping and Dead-End Flushing**

1. Reclaimed water distribution systems shall be designed to maintain effective circulation of the reclaimed water with minimum dead ends.
2. All dead-ends mains shall be provided with acceptable flush valves and discharge piping
3. All dead ends less than two inches in diameter will not require flush valves if the end is at a customer service
4. Where dead ends are necessary as a stage in the system growth they shall be located and arranged to ultimately connect the ends to provide circulation
5. Dead-end mains must be flushed at monthly intervals
6. Dead-end lines and other mains shall be designed to be flushed on a regular interval as determined by the reclaimed water provider, or as needed when reclaimed water quality complaints are received from customers
7. All flushing of reclaimed water lines must be done so that the flush water enters sanitary sewer lines

**§217.375 Additional Disinfection of Reclaimed Water Systems**

1. All reclaimed water provided for end use must be of the type and quality as indicated in 30 TA Chapter 210 requirements
2. Testing of the reclaimed water quality should be performed throughout the entire reclaimed water distribution system
3. To ensure reclaimed water quality additional disinfection must be used as needed with Additional chlorination injection station should be placed throughout the system as needed to ensure that the required chlorine residual and reclaimed water quality is maintained
4. Reclaimed water lines solely distributing reclaimed water to storage ponds or tanks are exempt for the listed additional chlorination requirements until the reclaimed water is placed into a distribution system for a Type I or Type II authorized use.
5. Chlorine at injection stations should be handled as indicated in the Chemical handling Section 217.324 of this Chapter