

SUBCHAPTER F: USE OF GRAYWATER AND ALTERNATIVE ONSITE WATER
§§210.81 - 210.85
Effective December 29, 2016

§210.81. Applicability.

(a) This subchapter applies to graywater and alternative onsite water generated and used at a private residence, commercial facility, industrial facility, institution, or agriculture facility regardless of the disposal method for other wastewater.

(b) This subchapter does not apply to reclaimed water which is regulated by Subchapters A - E of this chapter (relating to General Provisions; General Requirements for the Production, Conveyance, and Use of Reclaimed Water; Quality Criteria and Specific Uses for Reclaimed Water; Alternative and Pre-Existing Reclaimed Water Systems; and Special Requirements for Use of Industrial Reclaimed Water).

(c) This subchapter does not regulate the design, construction, or operation of on-site sewage facilities (OSSFs) but instead regulates the design, construction, and operation of alternative water reuse systems, combined reuse systems, and graywater reuse systems that may be located at a site that uses an OSSF. The design, construction, and operation of OSSFs are regulated by Chapter 285 of this title (relating to On-Site Sewage Facilities).

(d) An existing graywater system shall comply with the requirements of this subchapter as they existed on the date installation was completed. The previous version of this subchapter is continued in effect for this purpose.

(e) This subchapter does not authorize the diversion or impoundment of state water, as defined in Chapter 297 of this title (relating to Water Rights, Substantive).

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§210.82. Definitions and General Requirements.

(a) Definitions. For the purposes of this subchapter, the following terms have the following meanings.

(1) Alternative onsite water--rainwater, air-conditioner condensate, foundation drain water, stormwater, swimming pool backwash and drain water, or reverse osmosis reject water. Cooling tower blowdown is regulated by Subchapter E

of this chapter (relating to Special Requirements for Use of Industrial Reclaimed Water); therefore, for the purposes of this subchapter, all references to alternative onsite water do not include cooling tower blowdown. Reverse osmosis reject water generated at industrial facilities, commercial facilities, and institutions is regulated by Subchapter E of this chapter; therefore, for the purposes of this subchapter, all references to alternative onsite water do not include reverse osmosis reject water generated at industrial facilities, commercial facilities, and institutions. Reverse osmosis reject water generated at private residences and agriculture facilities may be used in accordance with this subchapter.

(2) Alternative water reuse system--a system designed and constructed to store and distribute one or more sources of alternative onsite water. An alternative water reuse system shall not contain, store, or distribute any graywater.

(3) Combined reuse system--a system designed and constructed to store and distribute graywater and one or more sources of alternative onsite water.

(4) Graywater-- wastewater from showers, bathtubs, handwashing lavatories, sinks that are used for disposal of household or domestic products, sinks that are not used for food preparation or disposal, and clothes-washing machines. Graywater does not include wastewater from the washing of material, including diapers, soiled with human excreta or wastewater that has come into contact with toilet waste.

(5) Graywater reuse system--a system designed and constructed to store and distribute graywater only. A graywater reuse system shall not contain, store, or distribute any source of alternative onsite water.

(b) Alternative water reuse systems. The following requirements apply to alternative water reuse systems used at a private residence, industrial facility, commercial facility, institution, or agriculture facility.

(1) Water from an alternative water reuse system may be reused for beneficial purposes including but not limited to landscape irrigation, gardening, composting, foundation stabilization, and toilet and urinal flushing. An alternative water reuse system may store and use either a single source or a combination of sources of alternative onsite water, and in any volume.

(2) Reverse osmosis reject water generated at an industrial facility, commercial facility, or an institution is prohibited from being stored and used in an alternative water reuse system. Reverse osmosis reject water generated by an industrial facility, commercial facility, or an institution is regulated by Subchapter E of this chapter.

(3) Reuse of water from an alternative water reuse system does not require authorization from the commission if used in accordance with this subchapter. The property owner is responsible for ensuring that the alternative water reuse system is properly operated and maintained to comply with the requirements of this subchapter.

(4) Water from an alternative water reuse system must be applied at a rate that will not result in ponding or pooling, or cause runoff across the property lines or onto any paved surface.

(5) Water from an alternative water reuse system shall not be applied using a spray distribution system except in accordance with the following conditions.

(A) Water from the spray distribution system must be applied at times when people and pets are not actively using the distribution area.

(B) Water from the spray distribution system must not be applied during rainfall events, when the ground is frozen, or within 24 hours after one-half inch or more of rain.

(C) Water from the spray distribution system must be applied at a rate to prevent ponding, puddling, or runoff.

(D) Water from the spray distribution system must not be sprayed or allowed to drift off the property.

(E) The spray distribution system must not be connected to a potable or raw water irrigation system unless suitable backflow prevention is provided to protect the potable or raw water system.

(F) The spray distribution system must be inspected and repaired as needed to prevent discharges to water in the state or off the property.

(6) The storage and use of water from an alternative water reuse system must not create a nuisance, threaten human health, or damage the quality of surface water or groundwater.

(7) Swimming pool backwash and drain water cannot be used within five days of adding chemicals for shock or acid treatment.

(8) Water from an alternative water reuse system that is used for toilet or urinal flushing must meet the following requirements. Property owners may

refer to the regulatory guidance document that is required by the Texas Health and Safety Code, §341.039, for assistance in complying with these requirements.

(A) For residential toilet or urinal flushing, *Escherichia coli* (*E. coli*) must be less than 14 most probable number (MPN) or colony-forming units (CFU) per 100 milliliters for 30-day geometric mean and less than 240 MPN or CFU per 100 milliliters maximum single grab sample. For industrial, commercial, or agricultural toilet or urinal flushing, *E. coli* must be less than 2.2 MPN or CFU per 100 milliliters for 30-day geometric mean and less than 200 MPN or CFU per 100 milliliters maximum single grab sample.

(B) Total suspended solids must be less than 10.0 milligrams per liter for 30-day geometric mean and less than 30.0 milligrams per liter maximum single grab sample.

(C) All exposed piping and piping carrying alternative onsite water within a building must be either purple pipe or painted purple; all buried piping must be either manufactured in purple, painted purple, taped with purple metallic tape, or bagged in purple; and all exposed piping must be stenciled in yellow with a warning reading "NON-POTABLE WATER." An alternative water reuse system that stores only rainwater, commonly referred to as a rainwater harvesting system, and uses the water for potable purposes in accordance with §290.44 of this title (relating to Water Distribution) is exempt from this subparagraph.

(9) An alternative water reuse system cannot have a physical connection to an organized wastewater collection system or an on-site sewage facility (OSSF). When the system reaches capacity, it is allowed to overflow onto the ground only if the overflow is caused by inflow of rainwater or stormwater. Overflow under these conditions is exempt from the requirement of paragraph (4) of this subsection.

(10) An alternative water reuse system may be subject to backflow prevention requirements in §290.44 of this title to protect public water supply systems from cross-contamination.

(c) Graywater reuse systems and combined reuse systems. The following requirements apply to all graywater reuse systems and combined reuse systems.

(1) Construction of a graywater reuse system or a combined reuse system, including storage and distribution systems, must comply with this subchapter and any requirements of the local permitting authority.

(2) Water from a graywater reuse system or a combined reuse system must be applied at a rate that will not result in ponding or pooling and will not cause runoff across the property lines or onto any paved surface.

(3) The storage and use of water from a graywater reuse system or a combined reuse system must not create a nuisance, threaten human health, or damage the quality of surface water or groundwater.

(4) A graywater reuse system or combined reuse system may be subject to backflow prevention requirements in §290.44 of this title to protect public water supply systems from cross-contamination.

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§210.83. Residential Use of Graywater and Alternative Onsite Water.

(a) An authorization from the commission is not required for the residential use of graywater and alternative onsite water from a graywater reuse system or a combined reuse system when the total combined average is less than 400 gallons per day and the water is used in accordance with this subchapter. Unless directed by the executive director, an authorization from the commission is not required for the residential use of graywater and alternative onsite water from a graywater reuse system or a combined reuse system when the total combined average is greater than or equal to 400 gallons per day and the water is used in accordance with this subchapter.

(b) The graywater and alternative onsite water must originate from a private residence.

(c) Water from a graywater reuse system or a combined reuse system may only be used at the private residence for the following purposes:

- (1) to minimize foundation movement and cracking;
- (2) for gardening;
- (3) for composting;
- (4) for landscaping; or
- (5) for toilet or urinal flushing.

(d) Graywater reuse systems and combined reuse systems are not authorized to overflow onto the ground under any circumstance.

(1) Graywater reuse systems must be designed and constructed so that the storage tank required by subsection (e) of this section overflows to an organized wastewater collection system or an on-site sewage facility (OSSF) unless prohibited by Chapter 285, Subchapter H of this title (relating to Disposal of Graywater). The graywater must enter the organized wastewater collection system or OSSF through either one air gap or two backflow valves or backflow preventers.

(2) Combined reuse systems must be designed and constructed so that 100% of the graywater can be diverted to an organized wastewater collection system or an OSSF, unless prohibited by Chapter 285, Subchapter H of this title, prior to entering the storage tank required by subsection (e) of this section. Graywater must be diverted to the organized wastewater collection system or OSSF during periods of non-use of the system or if the storage tank required by subsection (e) of this section reaches 80% capacity. The graywater must enter the organized wastewater collection system or the OSSF through either one air gap or two backflow valves or backflow preventers.

(3) Combined reuse systems that store stormwater, rainwater, and/or foundation drain water must have an automatic shutoff system to stop the inflow of stormwater, rainwater, and foundation drain water into the combined reuse system. The automatic shutoff system must activate when the storage tank required by subsection (e) of this section reaches 80% capacity.

(e) Except as authorized by subsection (j) of this section, graywater reuse systems and combined reuse systems must store the water in tanks and the tanks must:

- (1) be clearly labeled as non-potable water;
- (2) restrict access, especially to children;
- (3) eliminate habitat for mosquitoes and other vectors;
- (4) be able to be cleaned; and

(5) meet the structural requirements of §210.25(i) of this title (relating to Special Design Criteria for Reclaimed Water Systems).

(f) Graywater reuse systems and combined reuse systems must use piping that meets the piping requirement of §210.25 of this title.

(g) Water from a graywater reuse system or a combined reuse system shall not be applied using a spray distribution system except in accordance with the following conditions.

(1) Water from the spray distribution system must meet the following limits: *Escherichia coli* (*E. coli*) must be less than 14 most probable number (MPN) or colony-forming units (CFU) per 100 milliliters for 30-day geometric mean and less than 240 MPN or CFU per 100 milliliters maximum single grab sample.

(2) Water from the spray distribution system must be applied at times when people and pets are not actively using the distribution area.

(3) Water from the spray distribution system must not be applied during rainfall events, when the ground is frozen, or within 24 hours after one-half inch or more of rain.

(4) Water from the spray distribution system must be applied at a rate to prevent ponding, puddling, or runoff.

(5) Water from the spray distribution system must not be sprayed or allowed to drift off property.

(6) The spray distribution system must not be connected to a potable or raw water irrigation system unless suitable backflow prevention is provided to protect the potable or raw water system.

(7) The spray distribution system must be inspected and repaired as needed to prevent discharges to water in the state or off property.

(h) The property owner is responsible for ensuring that the graywater reuse system or combined reuse system is properly operated and maintained to achieve the following requirements. Monitoring and recordkeeping for *E. coli* and total suspended solids is not required. Property owners may refer to the regulatory guidance document that is required by the Texas Health and Safety Code, §341.039, for assistance in complying with these requirements.

(1) Graywater and alternative onsite water shall be treated to remove debris such as lint, leaves, twigs, and branches prior to entering the storage tank by use of a 50 mesh screen.

(2) Swimming pool backwash and drain water cannot be used within five days after adding chemicals for shock or acid treatment.

(3) Water from a graywater reuse system or a combined reuse system that is used for toilet or urinal flushing must meet the following requirements.

(A) *E. coli* must be less than 14 MPN or CFU per 100 milliliters for 30-day geometric mean and less than 240 MPN or CFU per 100 milliliters maximum single grab sample.

(B) Total suspended solids must be less than 10.0 milligrams per liter for 30-day geometric mean and less than 30.0 milligrams per liter maximum single grab sample.

(C) All exposed piping and piping carrying graywater and/or alternative onsite water within a building must be either purple pipe or painted purple; all buried piping must be either manufactured in purple, painted purple, taped with purple metallic tape, or bagged in purple; and all exposed piping must be stenciled in yellow with a warning reading "NON-POTABLE WATER."

(i) Builders of private residences are encouraged to:

(1) install plumbing in new housing to collect graywater and alternative onsite water from all allowable sources, taking into consideration end-use requirements and maintaining sufficient blackwater waste flow; and

(2) design and install a subsurface distribution system around the foundation of new housing to minimize foundation movement or cracking.

(j) Property owners who have been disposing of wastewater from residential clothes-washing machines, otherwise known as laundry graywater, directly onto the ground prior to January 6, 2005, may continue disposing of laundry graywater under the following conditions.

(1) The disposal area must not create a nuisance or threaten human health.

(2) Surface ponding must not occur in the disposal area.

(3) The disposal area must support plant growth or be sodded with vegetative cover.

(4) The disposal area must have limited access and use by residents and pets.

(5) Laundry graywater that has been in contact with human or animal waste must not be disposed onto the ground surface.

(6) Laundry graywater must not be disposed onto an area where the soil is wet.

(7) A lint trap must be affixed to the end of the discharge line.

(8) The system has not been altered after January 6, 2005, has not created a nuisance, and does not discharge graywater from any source other than clothes-washing machines.

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§210.84. Industrial, Commercial, or Institutional Use of Graywater and Alternative Onsite Water.

(a) For the purposes of this section, alternative onsite water does not include reverse osmosis reject water, as this source of water is regulated by Subchapter E of this chapter (relating to Special Requirements for Use of Industrial Reclaimed Water).

(b) An authorization from the commission is not required for the use of graywater and alternative onsite water from a graywater reuse system or a combined reuse system at an industrial facility, commercial facility, or institution. Treatment required by this section does not require authorization from the commission.

(c) The graywater and alternative onsite water must be generated and used onsite.

(d) Graywater reuse systems and combined reuse systems are not authorized to overflow onto the ground under any circumstances.

(1) Graywater reuse systems must be designed and constructed so that 100% of the graywater can be diverted to an organized wastewater collection system, on-site sewage facility (OSSF), authorized outfall in a wastewater discharge permit, or authorized disposal area in a Texas Land Application Permit (TLAP). The graywater must be diverted to the organized wastewater collection system, OSSF, authorized outfall in a wastewater discharge permit, or authorized disposal area in a TLAP during periods of non-use of the graywater reuse system or if the system reaches maximum capacity. The graywater must enter the organized wastewater system or OSSF through either one air gap or two backflow valves or backflow preventers.

(2) Combined reuse systems must be designed and constructed so that 100% of the graywater can be diverted to an organized wastewater collection system, OSSF, authorized outfall in a wastewater discharge permit, or authorized disposal area in a TLAP prior to entering the combined reuse system. Graywater must be diverted to the organized wastewater collection system, OSSF, authorized outfall in a wastewater discharge permit, or authorized disposal area in a TLAP during periods of non-use of the system or if the combined reuse system reaches 80% capacity. The graywater must enter the organized wastewater collection system or the OSSF through either one air gap or two backflow valves or backflow preventers.

(3) Combined reuse systems that store stormwater, rainwater, and/or foundation drain water must have an automatic shutoff system to stop the inflow of stormwater, rainwater, and foundation drain water into the combined reuse system. The automatic shutoff system must activate when the combined reuse system reaches 80% capacity.

(e) Water from a graywater reuse system or a combined reuse system may be used onsite for the following activities.

(1) Process water. Water from a graywater reuse system or a combined reuse system that is used for process water must be treated to a standard that allows the water to be used in operational processes.

(2) Landscape maintenance. Water from a graywater reuse system or a combined reuse system that is used for landscape maintenance must meet the following limits.

(A) If the water will be applied in areas with public access, the water must meet the following limits:

(i) *Escherichia coli* (*E. coli*), 20 most probable number (MPN) or colony-forming units (CFU) per 100 milliliters (ml), 30-day geometric mean; or

(ii) *E. coli* (not to exceed), 75 MPN or CFU per 100 ml, single grab sample.

(B) If the water will be applied in areas with restricted access to the public, the water must meet the following limits:

(i) *E. coli*, 200 MPN or CFU per 100 ml, 30-day geometric mean; or

(ii) *E. coli* (not to exceed), 800 MPN or CFU per 100 ml, single grab sample.

(3) Dust control. Water from a graywater reuse system or a combined reuse system that is used for dust control must meet the *E. coli* limits in paragraph (2)(B) of this subsection.

(4) Toilet or urinal flushing. Water from a graywater reuse system or a combined reuse system that is used for toilet or urinal flushing must meet the following requirements.

(A) *E. coli* must be less than 2.2 MPN or CFU per 100 ml for 30-day geometric mean and less than 200 MPN or CFU per 100 ml maximum single grab sample.

(B) Total suspended solids must be less than 10.0 milligrams per liter for 30-day geometric mean and less than 30.0 milligrams per liter maximum single grab sample.

(C) All exposed piping and piping carrying graywater and/or alternative onsite water within a building must be either purple pipe or painted purple; all buried piping installed after January 6, 2005, must be either manufactured in purple, painted purple, taped with purple metallic tape, or bagged in purple; and all exposed piping must be stenciled in yellow with a warning reading "NON-POTABLE WATER."

(5) Other uses. Water from a graywater reuse system or a combined reuse system that is used for other similar activities must:

(A) meet the *E. coli* limits in paragraph (2)(A) of this subsection if used in a way that the public may come into contact with the water; or

(B) meet the *E. coli* limits in paragraph (2)(B) of this subsection if used in a way that the public will not come into contact with the water.

(f) Water from a graywater reuse system or a combined reuse system that is required to meet the *E. coli* limits in subsection (e) of this section must be monitored for *E. coli* at least monthly. These records must be maintained at the site and be readily available for inspection by the commission for a minimum of five years.

§210.85. Agricultural Use of Graywater and Alternative Onsite Water.

(a) An authorization from the commission is not required for the use of graywater and alternative onsite water from a graywater reuse system or a combined reuse system for agricultural purposes. Treatment required by this section does not require authorization from the commission.

(b) The graywater and alternative onsite water must be generated and used onsite.

(c) Graywater reuse systems and combined reuse systems are not authorized to overflow onto the ground under any circumstances.

(1) Graywater reuse systems must be designed and constructed so that 100% of the graywater can be diverted to an organized wastewater collection system or on-site sewage facility (OSSF), unless prohibited by Chapter 285, Subchapter H of this title (relating to Disposal of Graywater). The graywater must be diverted during periods of non-use of the graywater reuse system or if the system reaches maximum capacity. The graywater must enter the organized wastewater collection system or OSSF through either one air gap or two backflow valves or backflow preventers.

(2) Combined reuse systems must be designed and constructed so that 100% of the graywater can be diverted to an organized wastewater collection system or OSSF, unless prohibited by Chapter 285, Subchapter H of this title prior to entering the combined reuse system. Graywater must be diverted to the organized wastewater collection system or OSSF during periods of non-use of the system or if the combined reuse system reaches 80% capacity. The graywater must enter the organized wastewater collection system or the OSSF through either one air gap or two backflow valves or backflow preventers.

(3) Combined reuse systems that store stormwater, rainwater, and/or foundation drain water must have an automatic shutoff system to stop the inflow of stormwater, rainwater, and foundation drain water into the combined reuse system. The automatic shutoff system must activate when the combined reuse system reaches 80% capacity.

(d) Water from a graywater reuse system or a combined reuse system may be used for the following activities.

(1) Process water. Water from a graywater reuse system or a combined reuse system that is used for irrigation and other agricultural purposes may be treated to a standard that allows the water to be used in operational processes.

(2) Landscape maintenance. Water from a graywater reuse system or a combined reuse system that is used for landscape maintenance must meet the following limits.

(A) If the water will be applied in areas with public access, the water must meet the following limits:

(i) *Escherichia coli* (*E. coli*), 20 most probable number (MPN) or colony-forming units (CFU) per 100 milliliters (ml), 30-day geometric mean; or

(ii) *E. coli* (not to exceed), 75 MPN or CFU per 100 ml, single grab sample.

(B) If the water will be applied in areas with restricted access to the public, the water must meet the following limits:

(i) *E. coli*, 200 MPN or CFU per 100 ml, 30-day geometric mean; or

(ii) *E. coli*, 800 MPN or CFU per 100 ml, single grab sample.

(3) Dust control. Water from a graywater reuse system or a combined reuse system that is used for dust control must meet the *E. coli* limits in paragraph (2)(B) of this subsection.

(4) Irrigation of fields. Water from a graywater reuse system or a combined reuse system that is used to irrigate fields where edible crops are grown or fields that are pastures for milking animals, the water must meet the *E. coli* limits in paragraph (2)(A) of this subsection. *E. coli* limits do not apply to graywater and alternative onsite water that is used to irrigate fields other than those where edible crops are grown or fields that are pastures for milking animals.

(5) Toilet or urinal flushing. Water from a graywater reuse system or a combined reuse system that is used for toilet or urinal flushing must meet the following requirements.

(A) *E. coli* must be less than 2.2 MPN or CFU per 100 ml for 30-day geometric mean and less than 200 MPN or CFU per 100 ml maximum single grab sample.

(B) Total suspended solids must be less than 10.0 milligrams per liter for 30-day geometric mean and less than 30.0 milligrams per liter maximum single grab sample.

(C) All exposed piping and piping carrying graywater and/or alternative onsite water within a building must be either purple pipe or painted purple; all buried piping must be either manufactured in purple, painted purple, taped with purple metallic tape, or bagged in purple; and all exposed piping must be stenciled in yellow with a warning reading "NON-POTABLE WATER."

(6) Other uses. Water from a graywater reuse system or a combined reuse system that is used for other similar activities must:

(A) meet the *E. coli* limits in paragraph (2)(A) of this subsection if used in a way that the public may come into contact with the water; or

(B) meet the *E. coli* limits in paragraph (2)(B) of this subsection if used in a way that the public will not come into contact with the water.

(e) Water from a graywater reuse system or a combined reuse system that is required to meet the *E. coli* limits in subsection (d) of this section must be monitored for *E. coli* at least monthly. These records must be maintained at the site and be readily available for inspection by the commission for a minimum period of five years.

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