

CHAPTER 627. OPERATION AND MAINTENANCE OF WATER REUSE SYSTEMS

[Authority: 27A O.S., §§ 1-3-101, 2-2-101, 2-2-201, 2-3-402, 2-6-103, 2-6-203, 2-6-402, and 2-6-501 et seq.]

[Source: Codified 7-1-12]

SUBCHAPTER 1. GENERAL PROVISIONS

252:627-1-1. Purpose and authority

(a) **Purpose.** This Chapter establishes the operating requirements for water reuse systems that are permitted or qualify to be permitted under OAC 252:656.

(b) **Authority.** This Chapter is authorized by 27A O.S. §§ 2-6-101 through 2-6-105, 27A O.S. §§ 2-6-401 through 2-6-403, and 27A O.S. §§ 2-6-501.

(c) **Applicability.** The rules in this Chapter apply to any person or entity that owns, operates and/or has been permitted to construct a water reuse system in accordance with OAC 252:656.

[Source: Added at 29 Ok Reg 1044, eff 7-1-12]

252:627-1-2. Definitions

In addition to the definitions contained in the Environmental Quality Code (27A O.S. § 2-1-101 *et seq.*), the following words and terms, when used in this Chapter, shall have the following meaning, unless the context clearly indicates otherwise:

"Bypass" means the intentional or unintentional diversion of a waste stream from any portion of a wastewater treatment system or a water reuse system.

"Cell" means an individual basin of a lagoon system.

"DEQ" means the Oklahoma Department of Environmental Quality.

"Discharge" means any intentional or unintentional release by leaking, pumping, pouring, emitting, emptying, dumping, escaping, seeping, overflowing, leaching or other means of release of wastewater or reclaimed water into any waters of the state or into or on any location where they may enter waters of the state.

"End-of-pipe" means the terminal points in all reclaimed water users' distribution systems.

"Lagoon" means a soil or lined basin, either below or above ground level, that is designed, maintained and operated to store, recycle and/or treat wastewater.

"Operator" means the individual who is properly certified by DEQ and who is responsible for the maintenance and operation of a water reuse system.

"MOR" means Monthly Operation Report.

"Person" means any individual, company, corporation, government agency, municipality, or any other entity.

"Reclaimed water" means wastewater that has gone through various treatment processes to meet specific water quality criteria with the intent of being used in a beneficial manner.

"Supplier" means a person or entity that treats and provides reclaimed water pursuant to a permit issued by DEQ.

"Treatment works" means any plant, disposal field, lagoon, incinerator or other facility used to treat, stabilize, hold or reclaim wastewater.

"User" means a person or entity that uses reclaimed water. In those instances in which the supplier and the user are the same entity, the entity is a "supplier" subject to the provisions of this Chapter.

"Water reuse system" means a treatment and distribution system designed to treat and supply reclaimed water.

"Wetted perimeter" means the area where a land application device distributes reclaimed water.

[Source: Added at 29 Ok Reg 1044, eff 7-1-12]

252:627-1-3. Permit requirements

(a) **Requirement for Permit to Construct.** No one shall construct, modify or operate a water reuse system without first obtaining a Permit to Construct pursuant to OAC 252:656.

(b) **Requirement for Permit to Supply.** No one shall supply reclaimed water without first obtaining a Permit to Supply pursuant to this Section, except when using reclaimed water within the wastewater treatment plant boundaries pursuant to Category 6.

(c) **Applications for Permits to Supply.** Applications for Permits to Supply Reclaimed Water shall be submitted to DEQ at least six (6) months prior to the anticipated start date for supplying reclaimed water and shall include the following:

- (1) a complete and signed application;
- (2) the required permit application fee;
- (3) a copy of the Permit(s) to Construct the water reuse treatment and distribution system; and
- (4) a copy of the binding user agreement between the supplier and each user of the reclaimed water.

(A) Agreements between suppliers and users of Categories 2 through 4 reclaimed water shall contain the following minimum provisions:

(i) A statement that the user shall operate all reclaimed water distribution systems in compliance with all applicable DEQ regulations.

(ii) A statement that the user shall allow the supplier reasonable access to all site(s) to determine whether the user is operating its facilities in compliance with the applicable DEQ regulations, and/or performing all required monitoring and analysis.

(iii) Documentation evidencing the user's legal interest in all locations where reclaimed water is being used.

(B) Category 5 user agreements are subject to the provisions of OAC 252:656-25-2(d).

(d) **Duration.** Permits to Supply are operating permits that expire five (5) years from the date of issuance.

(e) **Renewals for Permits to Supply.** Suppliers shall submit applications to renew existing Permits to Supply at least six (6) months prior to the permit's expiration date.

(f) **Responsibility.** Suppliers shall be responsible for assuring that users operate all reclaimed water distribution sites in compliance with DEQ regulations.

[Source: Added at 29 Ok Reg 1044, eff 7-1-12; Amended at 32 Ok Reg 983, eff 9-15-15]

252:627-1-4. Compliance required

Suppliers shall ensure that water reuse systems are operated pursuant to the terms of permits issued by DEQ and this Chapter. When in conflict, the terms of the permit shall supersede the requirements of this Chapter. Suppliers shall immediately stop supplying reclaimed water whenever the reclaimed water does not meet the requirements in Appendix A for chlorine residual, turbidity and/or fecal coliform.

[Source: Added at 29 Ok Reg 1044, eff 7-1-12]

252:627-1-5. General requirements for water reuse systems

(a) **Unauthorized wastes.** Suppliers shall take reasonable measures to prevent the introduction of unauthorized industrial wastewater, hazardous substances, chemicals or wastes into water reuse systems.

(b) **Protection of potable water supplies.** Suppliers shall prevent cross-connections between wastewater, water reuse and potable water supplies.

(c) **Discharges prohibited.** Suppliers shall ensure that all parts of water reuse systems are operated and maintained so that there are no unpermitted bypasses or discharges of wastewater or reclaimed water from the system. All such bypasses and/or discharges shall be considered violations of this Chapter and shall be subject to enforcement as an unpermitted discharge to waters of the state in violation of the Oklahoma Pollutant Discharge Elimination System Act.

- (1) **Reporting requirement.** Suppliers shall ensure that any and all bypasses and/or discharges from water reuse systems are reported to DEQ at (800) 522-0206 within 24-hours of an incident and that a completed and signed DEQ Form 605-011 "Self Reporting Wastewater Bypass Form" is submitted to DEQ within five (5) days of the incident.

(2) **Required response.** Suppliers shall ensure that immediate action is taken to stop, contain, clean up and prevent recurrence of bypasses or discharges.

(d) **Certified operator required.** Suppliers shall have at least one certified operator employed at all times for each water reuse system. Operators shall be certified pursuant to OAC 252:710.

(e) **Noncompliance reporting.** Suppliers shall report any chlorine residual, turbidity and/or fecal coliform violations within twenty-four (24) hours from the time suppliers become aware of a violation(s) by calling DEQ at (800) 522-0206. A written report describing the reason for the violation and the steps taken to correct the violation shall be submitted to DEQ within five (5) days of discovery of the violation.

(f) **User inspection program.** A supplier may become approved by DEQ to inspect the supplier's users' storage and distribution systems in lieu of DEQ performing the inspections.

(1) **Applications.** A supplier may become approved by submitting the following to DEQ:

(A) a copy of the binding user agreement(s) between the supplier and all of its users;

(B) a copy of the supplier's proposed inspection form, which shall include:

(i) the date and time of inspection;

(ii) the name of the inspector;

(iii) whether separation distances are met;

(iv) whether all steps necessary to prevent bypasses have been taken;

(v) whether there was evidence of ponding of reclaimed water;

(vi) the application rate of reclaimed water, if applicable;

(vii) the type of vegetative cover, if applicable;

(viii) whether the area where reclaimed water is used is secure;

(ix) whether disinfection requirements are being met;

(x) whether flushing plan has been followed; and

(xi) whether the reclaimed water is being used in compliance with the permit.

(C) documentation that the supplier's inspector has completed a DEQ approved water reuse training class;

(2) **Duties.** Once approved, a supplier shall:

(A) Perform annual inspections at each of its users' reclaimed water distribution sites. The supplier shall complete and maintain on-site an inspection form for each inspection completed; and

(B) review water reuse regulations with users.

(g) **DEQ's right to inspect.** Nothing in this section shall affect DEQ's statutory right to enter and inspect users' facilities.

(h) **Use of accredited laboratories.** All laboratory analyses required to be conducted pursuant to this Chapter shall be performed by laboratories accredited by DEQ.

(i) **Separation Distances.** Buffer zones and setback distances shall be maintained in accordance with OAC 252:656-27-2-(b).

[Source: Added at 29 Ok Reg 1044, eff 7-1-12; Amended at 32 Ok Reg 983, eff 9-15-15]

252:627-1-6. Permitted uses of reclaimed water

The following are the permitted uses of reclaimed water by category:

(1) **Category 1.** Reserved

(2) **Category 2.** Category 2 reclaimed water shall only be used for the permitted uses in Categories 3, 4 and 5, and:

(A) drip irrigation on orchards or vineyards;

(B) spray or drip irrigation on sod farms, public access landscapes and public use areas/sports complexes, including unrestricted access golf courses;

(C) toilet and urinal flushing;

(D) fire protection systems;

(E) commercial closed-loop air conditioning systems;

(F) vehicle and equipment washing (excluding self-service car washes);

(G) range cattle watering; and

(H) make-up water for oil and gas production.

(3) **Category 3.** Category 3 reclaimed water shall only be used for the permitted uses in Categories 4 and 5, and:

- (A) subsurface irrigation of orchards or vineyards;
- (B) restricted access landscape irrigation;
- (C) irrigation of livestock pasture;
- (D) concrete mixing;
- (E) dust control;
- (F) aggregate washing/sieving;
- (G) new restricted access golf course irrigation systems;
- (H) industrial cooling towers, once-through cooling systems, and closed loop systems such as boiler feed water;
- (I) restricted access irrigation of sod farms.; and
- (J) hydraulic fracturing.

(4) **Category 4.** Category 4 reclaimed water shall only be used for the permitted uses in Category 5 and:

- (A) soil compaction and similar construction activities; and
- (B) existing restricted golf course irrigation systems utilizing water that has received primary treatment in lagoon systems. Permits to construct shall not be issued for new Category 4 restricted access golf course irrigation systems pending further research and evaluation of performance data collected from existing systems.

(5) **Category 5.** Category 5 reclaimed water shall only be used for:

- (A) restricted access pasture irrigation for range cattle;
- (B) restricted access irrigation of fiber, seed, forage and similar crops; and
- (C) irrigation of silviculture.

(6) **Category 6.** Category 6 reclaimed water, which does not require a permit to supply, shall only be used within the wastewater treatment plant and includes:

- (A) dilution water for chemicals used in the process such as polymers, coagulants, chlorination or dechlorination;
- (B) mechanical seal water for gas compressors, pumps and other equipment;
- (C) mechanical seal water and cooling water for pumps;
- (D) odor and gas absorption including bio-filters used for odor control;
- (E) centrifuge flushing;
- (F) flushing grit and sludge pipes;
- (G) gravity thickener make-up water;
- (H) supply water for filter backwash;
- (I) headworks screen washing;
- (J) headworks screening washer-compactors;
- (K) belt filter press;
- (L) other reclaimed water that is permanently plumbed to a fixed nozzle and contained within unit operations;
- (M) yard hydrants; and
- (N) hose bibs.

[Source: Added at 29 Ok Reg 1044, eff 7-1-12; Amended at 32 Ok Reg 983, eff 9-15-15]

252:627-1-7. Annual fees for water reuse systems

(a) **Fees.** Each water reuse system shall be charged an annual fee. [See 27A O.S. § 2-3-402] The annual fee for suppliers shall be:

- (1) Category 2 - \$700.00
- (2) Category 3 - \$400.00
- (3) Category 4 - \$200.00
- (4) Category 5 - \$100.00
- (5) Water reuse systems will be charged an additional \$50.00 per user if the supplier does not have a DEQ approved inspection program.

(b) **Due date.** Suppliers shall submit payment of the fees within thirty (30) days of receipt of invoices mailed by DEQ.

[Source: Added at 29 Ok Reg 1044, eff 7-1-12]

SUBCHAPTER 3. OPERATION AND MAINTENANCE

252:627-3-1. Distribution system

(a) **Maintenance.** Suppliers shall maintain the structural integrity of all parts of the distribution system and maintain it in good working order.

(b) **Connections.** Suppliers shall maintain the integrity of the distribution system by inspecting all connections to the distribution system.

(c) **Erosion control.** Suppliers shall provide erosion protection for all parts of the distribution system located in or near waterways or flood plains.

(d) **Pump stations.** Suppliers shall ensure that pump stations are properly maintained and operated by doing the following:

- (1) Securing pump stations to prevent unauthorized access.
- (2) Maintaining the pumps in working condition.
- (3) Keeping the screens free of debris to prevent clogging.
- (4) Maintaining the required alarms in working order.
- (5) Maintaining the required back-up generators and/or portable engine driven pumps in working order.
- (6) Maintaining a complete set of operational instructions, emergency procedures and maintenance schedules.

(e) **Flushing Plan.** Suppliers shall have and implement comprehensive plans, approved by DEQ, for flushing reclaimed water within storage and distribution systems pursuant to OAC 252:656-27-4(e).

Flushing plans shall also be included in the reclaimed water systems' O&M manuals [OAC 252: 656-3-10] and in the suppliers' DEQ approved inspection programs [OAC 252:627-1-5(f)].

(f) **Flow Measurement.** Supplier shall maintain flow measuring device in proper working order.

[Source: Added at 29 Ok Reg 1044, eff 7-1-12; Amended at 32 Ok Reg 983, eff 9-15-15]

252:627-3-2. Requirements for using Category 2 reclaimed water

(a) **Operation and maintenance.** The following operation and maintenance requirements shall apply to areas where Category 2 reclaimed water is used:

- (1) **Legal access to site.** Suppliers shall have continued legal access to all areas where Category 2 reclaimed water from suppliers' systems is used.
- (2) **Equipment maintenance.** Suppliers shall ensure that all distribution and irrigation equipment is maintained in working order.

(b) **Restrictions.** Suppliers shall ensure that Category 2 reclaimed water is not used:

- (1) on any food crop that may be consumed raw;
- (2) on processed food crops such as corn, wheat and oats, less than thirty (30) days before harvest;
- (3) for spray irrigation on orchards or vineyards;
- (4) at rates that allow discharge from irrigation sites;
- (5) at a rate that exceeds the nitrogen and phosphorus uptake rates for the crop at the site;
- (6) at rates that result in phytotoxicity;
- (7) during periods of precipitation or while the soil is saturated or frozen;
- (8) on land having a slope greater than five percent (5%);
- (9) where there are berms or other barriers on a water reuse site that would cause the pooling or ponding of reclaimed water at the site, nor shall any berms or barriers impede the natural flow of stormwater from the site;
- (10) on public use areas that have a high potential for skin to ground contact (e.g., football fields, sports complexes, playgrounds, etc.) when in use by the public; and
- (11) at any location not authorized by the state in the permit.

252:627-3-3. Requirements for using Categories 3 and 4 reclaimed water

(a) **Operation and maintenance.** The following operation and maintenance requirements shall apply to areas where Categories 3 or 4 reclaimed water is used:

(1) **Legal access to site.** Suppliers shall have continued legal access to all areas that are being irrigated with Category 3 or 4 reclaimed water.

(2) **Equipment maintenance.** Suppliers shall ensure that all distribution and irrigation equipment is maintained in working order.

(b) **Restrictions.** Suppliers shall ensure that Category 3 or 4 reclaimed water is not used:

(1) from a lagoon cell that receives raw sewage;

(2) on public use areas that have a high potential for skin to ground contact (e.g., football fields, sports complexes and playgrounds);

(3) on golf courses unless irrigation takes place when the public is not allowed to access the sites;

(4) on any food crop that may be consumed raw;

(5) for spray irrigation on orchards or vineyards;

(6) at rates that allow a discharge from the permitted irrigation site;

(7) within one hundred feet (100') of the permitted boundary of the site;

(8) at a rate that exceeds the nitrogen and phosphorus rates for the crop at the site;

(9) at a rate that results in phytotoxicity;

(10) when the dissolved oxygen concentration for Category 4 reclaimed water is less than 2.0 mg/l;

(11) during periods of precipitation or while the soil is saturated or frozen;

(12) on land having a slope greater than five percent (5%);

(13) where there are berms or other barriers on a water reuse site that would cause the pooling or ponding of reclaimed water at the site, nor shall any berms or barriers impede the natural flow of stormwater from the site;

(14) on public use areas during times of use; and

(15) on sod farms unless a period of 30 (thirty) days has elapsed between the last application of Category 3 reclaimed water and harvesting of sod. [See OAC 252:627-1-6(3)(I)]

[Source: Added at 29 Ok Reg 1044, eff 7-1-12; Amended at 32 Ok Reg 983, eff 9-15-15]

252:627-3-4. Requirements for using Category 5 reclaimed water

(a) **Operation and maintenance.** The following operation and maintenance requirements shall apply to areas where Category 5 reclaimed water is used for irrigation:

(1) **Fencing.** Suppliers are responsible for ensuring that any required fencing is maintained in order to prevent unauthorized access to the site.

(2) **Signs.** Suppliers are responsible for ensuring that the required signs, which describe the nature of the facility and advise against trespassing are posted on or near the fence on each side of the water reuse site.

(3) **Legal access and control of site.** Suppliers shall ensure that Category 5 reclaimed water is applied on sites to which suppliers have legal access and control pursuant to the provisions of OAC 252:656-25-2(d).

(4) **Prohibition in public use area.** Category 5 reclaimed water shall not be applied to any public use areas.

(5) **Equipment maintenance.** Suppliers shall ensure that all irrigation equipment is maintained and in working order.

(b) **Restrictions.** Suppliers shall not irrigate with Category 5 reclaimed water:

(1) from a lagoon cell that receives raw sewage;

(2) from any cell other than the one specified in the permit;

(3) on any food crop that may be consumed raw;

(4) on grain crops such as corn, wheat and oats, less than thirty (30) days before harvest;

(5) at rates that allow a discharge from the permitted water reuse site;

(6) within one hundred feet (100') of the permitted boundary of the site;

- (7) at a rate that exceeds the nitrogen and phosphorus rates for the crop grown at the site;
- (8) at a rate that results in phytotoxicity;
- (9) when the reclaimed water has a dissolved oxygen concentration of less than 2.0 mg/l;
- (10) during periods of precipitation or while the soil is saturated or frozen;
- (11) on land having a slope greater than five percent (5%); and
- (12) where there are berms or other barriers on a water reuse site that would cause the pooling or ponding of reclaimed water at the water reuse site, nor shall any berms or barriers impede the natural flow of stormwater from the site.

[Source: Added at 29 Ok Reg 1044, eff 7-1-12]

252:627-3-5. Requirements for using Category 6 reclaimed water Signs

Yard hydrants and hose bibs must have signs containing the cautionary language found in OAC 252:656-27-4(a).

[Source: Added at 32 Ok Reg 983, eff 9-15-15]

SUBCHAPTER 5. SAMPLING, RECORD KEEPING AND REPORTING REQUIREMENTS

252:627-5-1. Sampling, reporting and record keeping requirements

(a) **Sampling.** Suppliers shall comply with the sampling requirements in Appendix A. However, Category 6 reclaimed water shall not require separate sampling but shall meet effluent limits pursuant to the OPDES permit and meet Best Management Practices as required in OAC 252:656-3-10 Operation and Maintenance Manual.

(b) **Completing MORs.** Suppliers shall complete DEQ Form 627-001 "Water Reuse System Monthly Operation Report" ("MOR") for each month. The MOR shall contain the following information:

- (1) The estimated volume of reclaimed water produced and distributed to each end user;
- (2) The results of each sampling event and:
 - (A) the name of the person taking each sample,
 - (B) the date and time of sampling,
 - (C) the date and time the analysis began, and
 - (D) the name of the laboratory doing the analysis.
- (3) The weather conditions during the reuse period;
- (4) The type of crop, grass or vegetation irrigated with the reclaimed water, if applicable; and
- (5) The loading rates at each water reuse site to verify that agronomic rates are not being exceeded.

(c) **Submission of MORs.** Categories 2 and 4 reclaimed water suppliers shall submit MORs to DEQ by the fifteenth (15th) day of the following month.

(d) **Retention of MORs.** All suppliers of reclaimed water shall maintain MORs on-site for three (3) years and make them available to DEQ upon request

(e) **Record keeping.** Suppliers shall keep all records, including all maintenance records, on site for at least three (3) years and available for review by DEQ upon request.

(f) **Additional reporting, records and/or sampling.** Additional sampling, reporting, and/or records requirements may be included by DEQ in any permit, authorization, order, consent decree, closure plan, remediation plan, or other official document issued by DEQ pursuant to applicable law and the provisions of this Chapter.

[Source: Added at 29 Ok Reg 1044, eff 7-1-12; Amended at 32 Ok Reg 983, eff 9-15-15]

APPENDIX A. Testing Frequency and Limits for Water Reuse Systems

Figure 1

Category	Testing Frequency	Limits	MORs
1	Reserved	Reserved	Reserved
2	<u>Turbidity:</u> Continuous	Turbidity shall not exceed the following: <ul style="list-style-type: none"> • Daily average 2 NTU¹ • 5 NTU >5% of the daily maximum per month² • 10 NTU at any time 	Supplier Submit MORs to DEQ
	<u>Chlorine disinfection at POE:</u> Continuous	(1) Free available chlorine residual shall always be ≥ 1.0 ppm at POE to distribution system and following any subsequent storage or treatment OR The chlorine residual at the POE to the distribution system and following any subsequent storage or treatment shall be at a level to prevent growth of slime and regrowth of pathogens in the distribution and storage systems as determined by an approved chlorine decay rate model pursuant to OAC 252:656-3-4 (b)(7)(C) AND (2) Free available chlorine residual at the end-of-pipe shall always be ≥ 0.20 mg/l OR Combined chlorine residual at the end-of-pipe shall always be ≥ 0.50 mg/l	
	<u>Chlorine disinfection at end-of-pipe:</u> Daily		
	<u>Fecal Coliform:</u> Daily	Fecal Coliform: No detectable fecal coliform organisms in four of the last seven daily samples, single sample maximum ≤ 23 cfu/100 ml	
	<u>Nitrogen/Phosphorous:</u> Monthly	\leq most stringent agronomic rate	
	<u>CBOD5:</u> Weekly	< 5.0 mg/l	
3	<u>Chlorine disinfection:</u> Every 12 hours	Free available chlorine residual at the POE to the distribution system and following any subsequent storage or treatment shall always be ≥ 0.20 ppm OR Combined chlorine residual at the POE to the distribution system and following any subsequent storage or treatment shall always be ≥ 0.50 mg/l	Supplier Maintain MORs On Site
	<u>Fecal coliform:</u> 3 per week	<ul style="list-style-type: none"> • Monthly geometric mean of < 200 cfu/100 ml • Single sample maximum < 400 cfu/100 ml 	
	<u>Nitrogen/Phosphorous:</u> Monthly	\leq most stringent agronomic rate	
	<u>BOD5 or CBOD5:</u> Weekly	< 20 mg/l	
4	<u>Fecal coliform:</u> Weekly	<ul style="list-style-type: none"> • Monthly geometric mean of < 200 cfu/100 ml • Single sample maximum < 800 cfu/100 ml 	Supplier Submit MORs to DEQ
	<u>Chlorine disinfection:</u> Daily	Free available chlorine residual at the POE to the distribution system and following any subsequent storage or treatment shall always be ≥ 0.20 ppm OR Combined chlorine residual at the POE to the distribution system and following any subsequent storage or treatment shall always be ≥ 0.50 mg/l	
	<u>Dissolved oxygen:</u> Weekly	> 2.0 mg/l	
5	None		Supplier Maintain MORs On Site

Figure 2

¹ The daily mean operating filter effluent turbidity (continuously monitored) is calculated as the average of turbidity measures at ≤ 1.2 hour intervals over 24 hours, and must be reported monthly.

² The maximum 24 hour turbidity must be based on highest measure from continuous monitoring taken at ≤ 1.2 hour intervals over 24 hours.