

**TITLE 252. DEPARTMENT OF ENVIRONMENTAL QUALITY  
CHAPTER 656. WATER POLLUTION CONTROL FACILITY CONSTRUCTION  
STANDARDS**

**RULEMAKING ACTION:**

PERMANENT final adoption

**RULES:**

- Subchapter 1. Introduction
  - 252:656-1-1 [AMENDED]
  - 252:656-1-2 [AMENDED]
  - 252:656-1-3 [NEW]
- Subchapter 3. Permit Procedures
  - 252:656-3-1 [AMENDED]
  - 252:656-3-2 [AMENDED]
  - 252:656-3-4 [AMENDED]
  - 252:656-3-5 [AMENDED]
  - 252:656-3-6 [AMENDED]
  - 252:656-3-8 [REVOKED]
  - 252:656-3-9 [AMENDED]
  - 252:656-3-10 [AMENDED]
- Subchapter 9. General Standards
  - 252:656-9-2 [AMENDED]
- Subchapter 25. Wastewater Land Application Systems
  - 252:656-25-1 [AMENDED]
  - 252:656-25-2 [AMENDED]
- Subchapter 27. Wastewater Reuse
  - 252:656-27-1 [NEW]
  - 252:656-27-2 [NEW]
  - 252:656-27-3 [NEW]
  - 252:656-27-4 [NEW]
  - 252:656-27-5 [NEW]

**AUTHORITY:**

Environmental Quality Board, 27A O.S. § 2-2-101; Water Quality Management Advisory Council, 27A O.S. § 2-2-201; and 27A O.S. §§ 1-3-101, 2-3-202, 2-3-402, 2-3-501, 2-6-103, 2-6-203, 2-6-402 and 2-6-501.

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**Submitted to House:**

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**Legislative approval:**

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July 1, 2012 (proposed)

**SUPERSEDED EMERGENCY ACTIONS:**

N/A

**INCORPORATION BY REFERENCE:**

N/A

**ANALYSIS:**

The DEQ proposes to amend OAC 252:656 as follows: (1) to incorporate design, construction and permitting requirements for four categories of water reuse systems (Categories 2 through 5); (2) to establish permit application fees for water reuse treatment systems and reclaimed water distribution systems in accordance with the existing fee structure in OAC 252:656-3-9; (3) to remove a duplicate financial responsibility section; and (4) to clarify language in existing sections. The requirements for the land application of wastewater from lagoon systems are being moved from Chapters 619 and 621 to this Chapter as Categories 4 and 5 reclaimed water.

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**PURSUANT TO THE ACTIONS DESCRIBED HEREIN, THE FOLLOWING RULES ARE CONSIDERED FINALLY ADOPTED AS SET FORTH IN 75 O.S., SECTION 308.1, WITH AN EFFECTIVE DATE OF JULY 1, 2012:**

**SUBCHAPTER 1. INTRODUCTION**

**252:656-1-1. Applicability**

(a) This chapter sets the permit and construction standards for wastewater collection systems and treatment works. It does not apply to innovative technology (see 27A O.S. § 2-6-401), to small public sewage systems as defined in 27A O.S. § 2-6-101 (also see OAC 252:641, Individual and Small Public On-Site Sewage Treatment Systems), nor does it apply to industrial wastewater (see OAC 252:606, Oklahoma Pollutant Discharge Elimination System (OPDES) Standards and OAC 252:616, Industrial Wastewater Systems). There are other rules that also may govern wastewater systems, such as OAC 252:621, Non-Industrial Flow-Through and Public Water Supply Impoundments ~~including Land Application~~; OAC 252:619, Operation and Maintenance of Non-Industrial Total Retention Lagoon Systems ~~and Land Application~~; OAC 252:627, Operation and Maintenance of Water Reuse Systems; OAC 252:515, Management of Solid Waste; and the federal OSHA standards.

(b) This chapter applies to any person or entity that constructs or modifies a wastewater collection system or treatment works that is not:

- (1) a small public sewage treatment system as defined in 27A O.S. § 2-6-101, or
- (2) an industrial wastewater system.

**252:656-1-2. Definitions**

In addition to terms defined in Title 27A of the Oklahoma Statutes, the following words or terms, when used in this Chapter, shall have the following meaning unless the context clearly indicates otherwise:

"**208 plan**" means an area wide wastewater treatment management plan that states are required to submit to EPA for approval pursuant to section 208 of the Clean Water Act, 33 U.S.C. § 1288.

"**ASTM**" means the American Standard Testing Method and Material.

"**Biosolids**" means organically treated wastewater materials from municipal wastewater treatment plants that are suitable for recycling as a soil amendment. This term is within the meaning of "sludge" as defined in 27A O.S. § 2-6-101(11). Biosolids are divided into the following classes:

- (A) Class A Biosolids meets the pathogen reduction requirements of 40 CFR § 503.32 (a);
- (B) Class B Biosolids meets the pathogen reduction requirements of 40 CFR § 503.32 (b).

"**BOD**" means total 5-day biochemical oxygen demand.

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

"**CBOD**" means 5-day carbonaceous biochemical oxygen demand.

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

"**cfm**" means cubic feet per minute.

"**Collection system**" means pipelines or conduits, pumping stations, force mains and all other facilities used to collect or conduct wastewater to a treatment works.

"**DEQ**" means the Oklahoma Department of Environmental Quality.

~~"**Deviation**" means change from the adopted or current standards for equipment, material or process.~~

"**Discharge point**" means the point at which wastewater enters Waters of the State or become Waters of the State.

"**Domestic wastewater**" means wastewater from drinking fountains, showers, toilets, lavatories and kitchens.

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

"**Engineer**" means a person licensed to practice engineering in Oklahoma.

"**fps**" means feet per second.

"**Freeboard**" means the vertical distance from the surface water level to the overflow elevation in a ~~treatment~~ treatment unit.

"**GPM**" means gallons per minute.

"**Land application**" means the controlled application of treated wastewater onto the land surface for beneficial use.

"**MGD**" or "**mgd**" means million gallons per day.

"**MLSS**" means mixed liquor suspended solids.

"**MLVSS**" means mixed liquor volatile suspended solids.

"**New technology**" means any method, process or equipment which is used to treat or convey sewage which is not addressed in this Chapter. This does not refer to innovative technology as defined by 40 CFR Part 35.

"**NPDES**" means the National Pollution Discharge Elimination System.

"**OAC**" means Oklahoma Administrative Code.

"**OSHA**" means the Occupational Health and Safety Administration.

"**Open storage basin**" means an uncovered basin, below or above ground level, that is designed, maintained and operated to store Category 2 or 3 reclaimed water.

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

"**Population equivalent**" and "**PE**" mean the calculated population which would normally contribute the same amount of biochemical oxygen demand (BOD) per day of wastewater. It is computed on the basis of 0.17 lb. of 5-day BOD per capita per day.

"**PSRP**" means process to significantly reduce pathogens.

"**PVC**" means polyvinyl chloride.

"**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.

"**Retention time**" means the theoretical time required to displace the contents of a tank or treatment unit at a given rate of flow (volume divided by rate of flow).

"**Rip-rap Riprap**" means a permanent, erosion resistant ground cover that consists of hard, sound durable stones that average in weight between thirty to fifty pounds (30-50 lbs), with no more than twenty percent (20%) weighing less than twenty pounds (20 lbs).

"**Service line**" means a wastewater line that connects an individual home, building or business to a permitted collection system.

"**Total Kjeldahl nitrogen (TKN)**" means the total of the organic and ammonia nitrogen.

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

~~"**Total Kjeldahl nitrogen (TKN)**" means the total of the organic and ammonia nitrogen.~~

"**UL**" means Underwriters Laboratories Inc.

"**U.S.C.**" means United States Code.

**"Variation"** means change from the adopted or current standards for equipment, material or process.

**"Wastewater system"** means a collection system and treatment works.

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

### **252:656-1-3. Permit requirements**

(a) **Permit to construct.** No one shall construct, modify or put into operation a wastewater system or a water reuse system without first obtaining a permit to construct from DEQ. Permits to construct will not be issued for new Category 4 restricted golf course irrigation systems pending further research and evaluation of performance data collected from existing systems.

(b) **Permit to supply.** No one shall supply reclaimed water without first obtaining a permit to supply from DEQ.

## **SUBCHAPTER 3. PERMIT PROCEDURES**

### **252:656-3-1. Permitting process**

(a) This subchapter implements the permitting process of Part 4, Water and Wastewater Treatment Systems, 27A O.S. § 2-6-401 *et seq.*, the Uniform Permitting Act, Title 27A O.S. § 2-14-101 and the rules promulgated pursuant thereto.

(b) ~~A permit is~~ Permits are required for the construction or modification of ~~a non-industrial wastewater system and water reuse systems.~~

(c) The permit application is a two-step process:

(1) The first step is the submission of an engineering report (as described in OAC 252:656-3-4); and

(2) The second step is the submission of the final design report along with the required application forms and fees. The final design report shall:

(A) include two (2) sets of plans and specifications, and

(B) reflect any changes from the approved engineering report.

(d) Unless an extension is granted, a construction permit expires if construction does not begin within one (1) year from the date the permit is issued.

(e) Permits to construct or modify non-industrial wastewater ~~systems~~ and water reuse systems shall only be issued to public entities unless all components of the proposed systems, including all service lines, are located on property:

(1) owned by the applicant, or

(2) dedicated to the applicant through a recorded easement for the installation and operation of the system.

### **252:656-3-2. Applications**

(a) **Permit application requirements.** ~~The applicant~~ Applicants seeking permits to construct either a non-industrial wastewater or water reuse system shall submit the following to DEQ:

(1) an application;

(2) the appropriate fee;

(3) two (2) copies of an engineering report in compliance with OAC 252:656-3-4;

(4) two (2) sets of plans and specifications; and

(5) documentation of adequate financial accountability.

(b) **Application.** The application shall be complete and legible ~~applications on forms provided by the DEQ~~ and include:

(1) the type of entity that is applying for the permit,

(2) the legal description of the property where the system will be located,

(3) ~~a minimum of two (2) sets of plans and specifications;~~

~~(4) a final design analysis,~~

~~(5) applicable fees, and~~

~~(6) (4)~~ a list of all applicable ASTM standards required for construction, installation and testing of the processes and equipment listed in the plans and specifications.

~~(b)~~(c) **Governing body and authority of public entity.** Public entities other than municipalities shall provide certified copies of the results of the last election or appointment of the members of the governing body. Public entities must also provide ~~a citation of~~citations to their legal authority to own and operate the proposed facility.

~~(c)~~(d) **Notice to political subdivision.** If the proposed facility is to be located within a political subdivision, the applicant must notify the political subdivision.

~~(d)~~(e) **Financial accountability.** All applicants must demonstrate they have adequate financial accountability, and technical and managerial capacity to comply with the requirements of this Chapter and to continuously maintain the facility.

(1) If the applicant is not a city, town or other public entity, the applicant must demonstrate to the satisfaction of the DEQ:

(A) that the ~~facility~~applicant can cover the expected costs for operation and maintenance, replacement and closure;

(B) that the applicant can provide for the continued existence and financial accountability of the facility;

(C) that provisions have been made for continued existence of the operating entity for the expected life of the facility; and

(D) that all components of the non-industrial wastewater or water reuse system, including service lines, are located on property under the control of the applicant through a recorded easement or ownership of the property. [See 27A O.S. § 2-6-401(A)].

(2) Financial accountability may be demonstrated in one of the following fashions:

(A) The applicant must provide proof of a sufficient amount on deposit to the credit of a trust, the powers of which are to operate and maintain the wastewater system for the expected life of the facility; or

(B) Other proof of financial viability, such as the issuance of a bond or insurance contract covering the operation and maintenance of the wastewater system may be submitted to DEQ for approval; and

(3) Costs for closure of the wastewater system as required by law must be included in any funding plan.

~~(e)~~(f) **Transferring applications.** Applications and unexpired permits may be transferred upon showing the transferee has legal authority and financial accountability, and that both parties agree to the transfer.

~~(g)~~ **Compliance with permit.** Applicants ~~must~~shall:

~~(1)~~ construct ~~facilities~~wastewater and water reuse systems according to the plans and specifications ~~that are approved by DEQ;~~

~~(2)~~ Applicants ~~must~~comply with the terms of the permits that are issued by DEQ. Permits may contain provisions more stringent than these rules in order to meet water quality standards;

~~(g)~~~~(3)~~ Applicants ~~must have adequate staff and procedures in place to assure construction does not~~ ~~(1)~~ not proceed with construction before the plans and specifications are approved permit is issued by DEQ; or and

~~(2)~~~~(4)~~ not deviate from the approved plans and specifications.

#### **252:656-3-4. Engineering report**

(a) ~~Submit~~ Applicants shall submit to DEQ two (2) copies of the engineering report for proposed new construction or modifications to sewage collection systems, or treatment works at least thirty (30) days prior to the submittal of plans and specifications. Applicants shall also submit a letter in which the applicant endorses the contents of each engineering report submitted to DEQ. For line extension and lift station construction, the submission of an Engineering Report Form, developed by the DEQ, signed and sealed by an engineer licensed by the State of Oklahoma, may be submitted to meet the requirements of the necessary engineering report, unless a full engineering report is required by the DEQ. Engineering reports ~~must~~shall include:

(1) **Volume and strength of sewage flow.** Establish the existing and anticipated design average and design peak flows and waste load for the existing and ultimate conditions. Include the basis for projecting initial current and/or future dry and wet weather flows and waste load for the existing, or initial, service area, and the anticipated future service area. For discharging facilities, the report must

demonstrate that the proposed project complies with the design flow in the 208 Plan and other applicable OPDES permit limits.

(2) **Existing system.** Describe the existing system, including the needs for the project related to health and safety, system operations and maintenance, and population growth. Issues that must be addressed include, but are not limited to, suitability of existing facilities for continued use, adequacy of water supply, history of compliance with state and federal requirements, and comparison of existing treatment units with state and federal design requirements.

(3) **Project description and alternatives.** The report must contain a description of the alternatives that were considered to meet the identified need. Provide a service area and project site ~~map~~ maps showing the existing and proposed systems. The information must describe legal and natural boundaries, major obstacles, elevations, and any other information necessary to properly evaluate the project. Describe the proposed project and, where two or more solutions exist, discuss the alternatives including cost analysis and discuss the reasons for selecting the one recommended. For each alternative considered, the report must provide the following:

(A) **Description.** A description of the collection system, pumping systems, treatment, and discharge facilities associated with each alternative as applicable.

(B) **Design criteria.** The design parameters used for evaluation purposes.

(C) **Schematic.** A schematic diagram(s) of all existing and proposed treatment processes.

(D) **Land requirements.** The identification of sites and easements that will be used and whether the sites:

(i) are currently owned or leased by the applicant, or

(ii) will be acquired or leased by the applicant.

(E) **Construction problems.** A discussion of concerns such as subsurface rock, high water table, limited access, or other conditions that may affect the cost of construction or the operation of the facility.

(F) **Advantages and disadvantages.** A description of the ability of each alternative to meet the owner's needs, address violations cited in any enforcement orders, satisfy public and environmental concerns, and comply with regulatory requirements. The report must demonstrate the compatibility of each alternative with existing, comprehensive, and area-wide development plans. Provide a short description of environmental impacts that may preclude any alternatives.

(G) **Selected alternative.** A complete description of the proposed project based on the general description presented in the evaluation of alternatives. The report must show that the proposed project will comply with all the requirements of this Chapter. At a minimum, the following information must be included:

(i) **Treatment.** A description of the processes, including biosolids management, in detail and the identification of the location of the plant and the site of any discharges; a status of compliance with the 208 Plan, and if applicable, include current revisions with copy of DEQ approval letter, if approved in the current 208 Plan.

(ii) **Pumping stations.** The size, type, location and any special power requirements, including provisions for emergency operations, of all pumping stations.

(iii) **Collection system layout.** Identify general location of line improvements, including: lengths, sizes and key components.

(iv) **Calculations.** Provide supporting calculations in sufficient detail to demonstrate compliance with DEQ design requirements to assure adequate capacity for the collection and treatment system as a whole to transport and treat the wastewater or reclaimed water. For collection system projects, the submittal must include a map with a list of manholes and pipes and the associated characteristics, such as elevation of inverts, pipe diameter, pipe segment length, and other information necessary to evaluate the project. The report must provide assurance that the receiving collection and treatment systems have adequate capacity.

(4) **Construction sequence.** A description of the sequence of construction and steps needed to maintain compliance during construction. If the project is not to be completed in one sequence, then provide details of the phases.

(5) **Site.** Describe the topography, soils, geologic conditions, depth to bedrock, groundwater level, floodway or floodplain considerations, and other pertinent site information. The project must be

constructed on the site consistent with approved plans. Include 6 months of data on the groundwater level. Provide soil boring information pursuant to OAC 252:656-11-3 (a) for projects that include lagoons or other non-industrial impoundments.

(6) **Water supply.** Identify surface water intakes within five (5) miles of the discharge and known public and private water wells within three hundred feet (300').

(7) **Receiving stream.** Identify the receiving stream and its wasteload requirements according to the Water Quality sections of OAC 252:606 and Oklahoma's Water Quality Management Plan (208 Plan).

(8) **Disposition of biosolids.** Discuss the available alternatives for biosolids reuse and/or disposal (OAC 252:606 and OAC 252:515). Submit a sludge management or sludge disposition plan to DEQ for approval. All biosolids that will be land applied and/or disposed in a landfill must comply, at a minimum, with the Class B pathogen reduction requirements contained at 40 CFR, Part 503, adopted by reference at OAC 252:606.

(9) **Industrial wastes.** Discuss the characteristics and volume of anticipated industrial wastes.

(10) **Collection system.** Describe the area to be served by existing and proposed sewers. Sewer capacities must be designed for the estimated ultimate population that will be served. Similarly, consideration must be given to the maximum anticipated loadings from institutions, industrial parks and other similarly situated facilities.

(11) **Financing.** Provide itemized cost estimates to build, operate and maintain the proposed project including, but not limited to:

(A) development, construction, land and rights-of-way, legal services, engineering services, contingencies, refinancing, and any other factors associated with the proposed project;

(B) discuss financing methods;

(C) provide information regarding rate structures, annual operating and maintenance (O&M) cost, tabulation of users by monthly usage categories and revenue received for the last three fiscal years; and

(D) give status of existing debts and required reserve accounts. Include a schedule of short-lived assets and a recommended annual reserve deposit to fund replacement of short-lived assets such as pumps, paint and small equipment.

(12) **Enforcement orders.** Discuss all applicable enforcement orders, including the violations cited in the orders and how the project will eliminate said violations.

(13) **Conclusions and Recommendations.** Provide any additional findings and recommendations that must be considered in development of the project. This must include recommendations for a specific course of action to be undertaken, any special studies to be developed, highlight the need for special coordination, include a recommended plan of action to expedite project development, etc.

(14) **Project Schedule.** The report must propose a schedule to obtain funds to complete the proposed project, submit construction plans, specifications, and permit application(s), start construction, complete construction, and attain compliance with applicable OPDES discharge permits.

**(b) Water reuse treatment and reclaimed water distribution systems.** Applicants shall submit to DEQ two (2) copies of the engineering report for proposed new construction or modifications to water reuse treatment and reclaimed water distribution systems. Engineering reports shall be submitted at least thirty (30) days prior to the submission of plans and specifications and all engineering reports submitted to DEQ shall be signed and sealed by an engineer licensed by the State of Oklahoma. Applicants shall also submit a letter in which the applicant endorses the contents of each engineering report submitted to DEQ. For line extension and lift station construction, the submission of an Engineering Report Form, developed by DEQ, signed and sealed by an engineer licensed by the State of Oklahoma, may be submitted to meet the requirements of the necessary engineering report, unless a full engineering report is required by DEQ. Engineering reports shall include the following, as applicable:

(1) **Volume and quality of reclaimed water flow.** Describe anticipated flow from wastewater treatment works to the water reuse treatment facility. For discharging facilities, the report must demonstrate how the proposed project impacts the design flow in the 208 Plan and other applicable OPDES permit limits.

(2) **Existing system.** Describe existing wastewater treatment and water reuse systems. Descriptions shall include: the suitability of existing facilities for continued use, adequacy of water supply and the facility's history of compliance with state and federal requirements.

(3) **Project description.** Provide service area and project site maps showing the existing and proposed systems. The information shall describe legal and natural boundaries, elevations, major obstacles and any other information necessary to properly evaluate the project.

Project descriptions shall include the following:

(A) **Description.** A description of the wastewater treatment system preceding the water reuse treatment facility.

(B) **Design criteria.** The design parameters used for evaluation purposes.

(C) **Schematic.** Schematic diagrams of all existing and proposed treatment processes.

(D) **Land requirements.** Identification of the sites and easements that will be used and whether the sites:

(i) are currently owned or leased by the applicant, or

(ii) will be acquired or leased by the applicant.

(E) **Treatment.** A detailed description of the treatment processes, including biosolids management, identification of the location of the plant and the site of any discharges:

(i) **Pumping stations.** Identify the size, type, location, any special power requirements and provisions for emergency operations of all pumping stations.

(ii) **Reclaimed water distribution system layout.** Identify the general locations of line improvements, including lengths, sizes and key components.

(iii) **Calculations.** Provide supporting calculations in sufficient detail to demonstrate compliance with DEQ design requirements.

(4) **Construction sequence.** A description of the sequence of construction and steps needed to maintain compliance during construction. If the project is not to be completed in one sequence, provide details of the phases.

(5) **Site.** Describe the topography, soils, geologic conditions, depth to bedrock, groundwater level, floodway or floodplain considerations, and other pertinent site information. The project must be constructed on the site consistent with approved plans. Include 6 months of data on the groundwater level. Provide soil boring information pursuant to OAC 252:656-11-3 (a) for projects that include lagoons or other non-industrial impoundments.

(6) **Biosolids handling.** If the proposed project will increase the production of biosolids and/or residuals, provide a description of any modifications necessary to properly treat and dispose of biosolids. All biosolids that will be land applied and/or disposed in a landfill must comply, at a minimum, with the Class B pathogen reduction requirements contained at 40 CFR, Part 503, adopted by reference at OAC 252:606. Submit a sludge management or sludge disposition plan as appropriate to the DEQ for approval.

(7) **Reclaimed water distribution system.** A description of the following:

(A) The location, size, and direction of flow of all existing and proposed reclaimed water distribution lines from the point of connection with the existing or proposed treatment works or storage locations to the end user.

(B) A summary of quantities that includes, at a minimum, pipe size, materials and linear feet of piping, types of testing and number and size of pumps.

(C) The disinfection system design based on one of the following criteria:

(i) maintaining a chlorine residual to end-of-pipe pursuant to Appendix A of OAC 252:627;

or

(ii) a DEQ approved calibrated model of chlorine decay rate in the distribution system to demonstrate that adequate chlorine residual will be maintained to prevent slime growth and regrowth of pathogens to end-of-pipe.

(8) **Financing.** Itemized cost estimates to build, operate and maintain the proposed project including, but not limited to:

(A) development, construction, land and rights-of-way, legal services, engineering services, contingencies, refinancing, and any other factors associated with the proposed project;

(B) financing methods;

(C) information regarding rate structures, annual operating and maintenance (O&M) cost, tabulation of users by monthly usage categories and revenue received for the last three fiscal years; and



(D) the status of existing debts and required reserve accounts. Include a schedule of short-lived assets and a recommended annual reserve deposit to fund replacement of short-lived assets such as pumps, paint and small equipment.

(9) **Enforcement orders.** A discussion of all enforcement orders, identifying the violations cited in orders and explaining how the project will eliminate those violations.

(10) **Conclusions and Recommendations.** All engineering reports shall include a recommendation for a specific course of action to be undertaken. The conclusions and recommendations shall also include any additional findings, identify any special studies to be developed, and any other recommendations that must be considered in development of the project.

(11) **Project Schedule.** A proposed schedule to obtain funds to complete the proposed project, submit construction plans, specifications, and permit application(s), start construction, complete construction, and attain compliance with applicable OPDES discharge permits.

### **252:656-3-5. Plans and specifications**

(a) **General layout plans.** Submit Applicants shall submit to DEQ two (2) copies of general plans that include the following:

(1) **Plan view.** Include a plan view of the plant and any discharge points, using at least 10-foot contours.

(2) **Flood elevations.** Show both the 25-year and 100-year flood elevations and their boundaries.

(3) **Existing and proposed treatment works.** Show the physical arrangement of all treatment units on a project site plat.

(4) **Existing collection systems.** Show the location, size and direction of flow of all existing sanitary sewers at the point of connection with proposed new sanitary sewers. Show the elevations of all sewer inverts close to the manholes.

(5) **Proposed collection systems.** Show the location of all proposed sewers, sewer easements and direction of flow. Number all manholes on the layout and correspondingly on the profile. Provide a summary of quantities that includes, at a minimum, linear feet of trenching, number of manholes, size, materials and linear feet of piping, types of testing and number and size of pumps (if applicable).

(6) **Existing and proposed reclaimed water distribution systems.** Show the location, size, and direction of flow of all existing and proposed reclaimed water distribution lines from the point of connection with the existing or proposed treatment works or storage locations to the end user. Provide a summary of quantities for proposed reclaimed water distribution lines that includes, at a minimum, pipe size, materials and linear feet of piping, types of testing and the number and size of pumps. Testing specifications shall include requirements for flushing mains to remove any construction debris before placing the system into service. Construction of reclaimed water distribution systems shall be in accordance with OAC 252:626-19-2, except as follows:

(A) locate reclaimed waterlines at least 5 feet horizontally from any existing or proposed potable waterlines;

(B) locate reclaimed waterlines at least 5 feet horizontally from any existing or proposed sewer lines;

(C) locate reclaimed waterlines crossing any existing or proposed potable waterlines at least 2 feet vertically below the potable waterlines; and

(D) locate reclaimed waterlines crossing any existing or proposed sewer lines at least 2 feet vertically above the sewer lines.

~~(6)~~(7) **Drawings.** Show the name of the municipality, sewer district, or institution; scale in feet; north point; date; and name, telephone number, address, signature of engineer and/or imprint of engineer's seal on the drawings. In the case of bound documents, engineers must affix their seal, signature and date to the cover sheet or index page, which identifies all documents bound together for which the registrant has responsible charge. In the absence of a cover sheet or index page each sheet must have the seal, and dated signature of the registrant who has responsible charge. For bound documents involving multiple registrants, either each document in the bound set must be sealed, signed and dated by the registrant in responsible charge for that portion of the work, or the cover sheet or index page must be sealed, signed and dated by each registrant with a breakdown of responsibility for each document clearly identified. Draw general plans to a scale of 100 feet per inch. Establish and reference a permanent benchmark.

The minimum plan size must be 11" x 17", one-sided and of adequate contrast sufficient for ~~microfilming~~ electronic imaging and storage.

(b) **Detailed plans.** ~~Prepare~~ The applicant shall submit to DEQ two (2) copies of detailed plans drawn to a suitable scale. Plans to modify or extend existing wastewater treatment systems or water reuse systems must shall clearly indicate the changes. The detailed plans must include the following:

(1) **Non-industrial wastewater systems.** Detailed plans for non-industrial wastewater systems shall include the following:

(A) **Sewer plan and profile.** Include a plan and profile of all sewers to be constructed showing all special features, such as inverted siphons, extra strength pipe, concrete encasements, outfall structures and sewer bridges. Show all stream crossings on the profile with stream bed elevations, normal flow elevation and extreme high and low water levels. Scale the profiles to not more than 100 feet per inch horizontal and 10 feet per inch vertical. Show the scale on the profiles. Show all known existing structures both above and below ground that might interfere with the proposed construction; including water mains, gas mains, storm drains, and nature of street surfacing. Show wyes on the plan view and dimensions from the nearest down-stream manhole recorded on maps.

~~(2)~~ (B) **Sewer details.** Include profiles showing manhole stationing, size of sewers, top of rim and sewer invert elevations at each manhole and the grade and length of sewers between adjacent manholes. Show ground elevations at the house line or at approximately 50 to 75 feet from the centerline of the sewer in each direction except in the case of out-fall and/or relief sewers, where no wyes for house connections are needed.

~~(3)~~ (C) **Sewer appurtenances.** Include the details of all ordinary sewer appurtenances such as manholes, drop manholes, inverted siphons and pumping stations. A sufficiently detailed drawing of each structure ~~shall~~ must show dimensions, equipment, elevations, capacities, and any explanatory notes necessary to make them easily interpreted.

~~(4)~~ (D) **Sewer cross sections.** Include cross sections for manholes, outfall structures, headwalls, pipe cradling and encasement, and similar structures.

~~(5)~~ (E) **Sewage pumping station details.** Include complete construction details showing number and size of pumps, isolation valves, check valves, alarm system and emergency operation provisions.

~~(6)~~ (F) **Treatment works hydraulic profile.** Show hydraulic profiles with sewage, supernatant liquor and sludge flow through the plant.

~~(7)~~ (G) **Schematic diagrams.** Label schematic piping diagrams with all lines, appurtenances and direction of flow.

~~(8)~~ (H) **Treatment units.** Provide complete construction details of all treatment units including high and low water levels of receiving stream.

~~(9)~~ (I) **Fillets.** Eliminate dead spots in all tanks by designing fillets and otherwise rounding edges.

(2) **Water reuse systems.** Detailed plans for water reuse systems shall include the following information:

(A) **Treatment works hydraulic profile.** Show hydraulic profiles with sewage, supernatant liquor and sludge flow through the system.

(B) **Schematic diagrams.** Label schematic piping diagrams with all lines, appurtenances and direction of flow.

(C) **Treatment units.** Provide complete construction details of all treatment units including high and low water levels of receiving stream.

(D) **Distribution system.** Provide complete construction details of the distribution system, which shall be designed in compliance with Subchapter 27.

(c) **Specifications.** ~~Complete~~ Applicants shall submit to DEQ complete detailed specifications for the proposed project shall accompany, or be included in, with the plans and must shall include a detailed summary of equipment and design data, with references to the specific applicable ~~specific~~ ASTM standards (e.g., ASTM, UL, etc.) for construction, installation and testing of said equipment.

(d) **Construction materials.** Applicants are responsible for complying with any occupational, safety and building codes. Reference in the plans or specifications where these codes require special construction materials, such as the National Electrical Code requirement for explosion-proof wiring where gases may accumulate. The DEQ will not, however, determine whether the proposed construction will meet such codes.

- (e) **Redundant equipment.** Provide a backup for all treatment units and pumping equipment to provide for equipment maintenance and repair.
- (f) **Maintenance and cleaning.** For maintenance and operational controls, all units must be equipped with means for cleaning. Direct discharge of untreated sewage is prohibited.
- (g) **Weather protection.** Protect the structures and all electrical and mechanical equipment and controls from elements and a 100-year flood. Protect mechanical units, pumps, valves and piping from freezing.
- (h) **Construction sequence.** Include a program for keeping existing wastewater facilities in compliance with all applicable water quality permit conditions during construction of additional facilities ~~(see 252:6563-4(3))~~ in accordance with OAC 252:656-3-4(a)(4) and/or OAC 252:656-3-4(b)(4).

### 252:656-3-6. Revisions

#### (a) Approved plans.

(1) **Before contract is awarded.** Any changes from approved plans or specifications affecting capacity, flow or operation of units must be submitted to the DEQ as an addendum for review and approval. The DEQ must review and approve the submission before construction can commence based on the addendum.

(2) **After contract is awarded.** After a contract has been awarded, submit proposed changes from approved plans or specifications in the form of a Change Order, signed and sealed by an engineer, licensed by the State of Oklahoma. The permittee and the contractor must sign Change Orders. The DEQ must review and approve the submission of the proposed changes before construction can commence based on the Change Order.

(b) **As-built plans.** File as-built plans (plans of record) for wastewater treatment works and water reuse systems with the DEQ within six months after the project is completed, unless the engineer certifies that construction was completed according to the approved plans.

(c) **DEQ Inspection.** The applicant must notify the DEQ of construction completed pursuant to an Addendum or Change Order, a minimum of ten (10) days prior to the commencement of operations.

### 252:656-3-8. Financial responsibility [REVOKED]

~~(a) All applicants must demonstrate they have adequate financial, technical, and managerial capacity to comply with the requirements of this Chapter and to continuously maintain the wastewater treatment system.~~

~~(b) If the applicant is not a city, town or other public entity, the applicant must demonstrate to the satisfaction of the DEQ:~~

- ~~— (1) expected costs for operation and maintenance, replacement and closure;~~
- ~~— (2) continued existence and financial accountability; and that~~
- ~~— (3) provisions have been made for continued existence of the operating entity for the expected life of the facility.~~

~~(c) Continued existence may be demonstrated in one of the following fashions:~~

- ~~— (1) The applicant must provide proof of a sufficient amount on deposit to the credit of a trust, the powers of which are to operate and maintain the wastewater treatment system for the expected life of the facility; or~~
- ~~— (2) Other proof of financial viability, such as the issuance of a bond or insurance contract covering the operation and maintenance of the wastewater treatment system may be submitted to DEQ for approval.~~

~~(d) Costs for closure of the wastewater treatment system as required by law must be included in any funding plan.~~

### 252:656-3-9. Fees

(a) Permits will not be issued until all fees are paid unless a monthly billing agreement with the DEQ and the permittee is current.

(b) Fees for treatment works construction are based on design flow and are as follows:

(1) New facilities and major modifications that alter the original design or the design capacity:

- (A) 1.0 MGD and greater \$5,440.00
- (B) 0.50 MGD - 0.99 MGD \$4,080.00
- (C) 0.10 MGD - 0.49 MGD \$2,720.00
- (D) 0.01 MGD - 0.09 MGD \$1,360.00

- (E) less than 0.01 MGD \$680.00
- (2) Minor modifications that will not alter the design capacity of the facility such as flow measurement, discharge structures and equalization basins:
  - (A) 1.0 MGD and greater \$1,360.00
  - (B) 0.50 MGD - 0.99 MGD \$1,090.00
  - (C) 0.10 MGD - 0.49 MGD \$814.00
  - (D) 0.01 MGD - 0.09 MGD \$540.00
  - (E) less than 0.01 MGD \$270.00
- (c) Collection system and reclaimed water distribution system improvement fees are:
  - (1) Line extensions (rounded to the nearest one hundred feet (100')): \$150.00 for the initial one to five hundred feet (1-500') plus \$28.50 for each additional one hundred feet (100').
  - (2) Lift stations: \$140.00 per 100 GPM for the peak capacity rating rounded to the nearest 100 GPM.
  - (3) Municipalities that are exempted from obtaining construction permits under OAC 252:656-3-3 shall submit payment to DEQ for twenty percent (20%) of the total fee calculated in this Subsection. This fee may be paid upon submission of plans, or on a monthly or quarterly basis.
- (d) To assist in meeting rising costs to the Department for the non-industrial wastewater systems program and water reuse systems program, the fees set out in paragraphs (b) and (c) above shall be automatically adjusted on July 1<sup>st</sup> every year to correspond to the percentage, if any, by which the Consumer Price Index (CPI) for the most recent calendar year exceeds the CPI for the previous calendar year. The Department may round the adjusted fees up to the nearest dollar. The Department may waive collection of an automatic increase in a given year if it determines other revenues, including appropriated state general revenue funds, have increased sufficiently to make the funds generated by the automatic adjustment unnecessary in that year. A waiver does not affect future automatic adjustments.
  - (1) Any automatic fee adjustment under this subsection may be averted or eliminated, or the adjustment percentage may be modified, by rule promulgated pursuant to the Oklahoma Administrative Procedures Act. The rulemaking process may be initiated in any manner provided by law, including a petition for rulemaking pursuant to 75 O.S. § 305 and OAC 252:4-5-3 by any person affected by the automatic fee adjustment.
  - (2) If the United States Department of Labor ceases to publish the CPI or revises the methodology or base years, no further automatic fee adjustments ~~shall~~ must occur until a new automatic fee adjustment rule is promulgated pursuant to the Oklahoma Administrative Procedures Act.
  - (3) For purposes of this subsection, "Consumer Price Index" or "CPI" means the Consumer Price Index - All Urban Consumers (U.S. All Items, Current Series, 1982-1984=100, CUUR0000SA0) published by the United States Department of Labor. The CPI for a calendar year is the figure denoted by the Department of Labor as the "Annual" index figure for that calendar year.
- (e) Emergency grant projects are exempt from construction permit fees (wastewater systems funded in part or in whole by grant monies made available through the Oklahoma Water Resources Board as authorized by Title 82, § 1085.39).
- (f) REAP (Rural Economic Assistance Program) Grant Projects are exempt from permit fees.
- (g) The maximum fee for any one application will not exceed \$5,825.00. Any person or entity that constructs or modifies a wastewater collection system or treatment works subject to these rules, prior to the issuance of a permit, is subject to the doubling of all fees required by this chapter, as deemed necessary to offset additional administrative costs of such reviews. Further, the submission of appropriate fees and/or the issuance of a permit does not preclude any person or entity from further enforcement and/or fines as set out by State statutes and rules, for constructing or modifying a wastewater collection system or treatment works prior to the issuance of all appropriate permits as required by this chapter.

**252:656-3-10. Operation and Maintenance (O & M) Manual**

Within ninety (90) days of the completion of ~~the project construction~~, the applicant must submit to the DEQ an O & M Manual for the operation and maintenance of the wastewater treatment system or the water reuse system. The O & M Manual must include at a minimum:

- (1) System Treatment Requirements;
- (2) Current NPDES Permit wasteload requirements to water quality sections of OAC 252:606 including 208 ~~plan~~ Plan requirements;

- (3) Description, Operation and Control of the Treatment Works;
- (4) Control of Unit Processes;
- (5) Laboratory Testing;
- (6) Common Operating Problems;
- (7) Start-Up Testing and Procedures;
- (8) Normal Operating Procedures;
- (9) Alternative and Emergency Operations;
- (10) Emergency Shutdown Operations and Emergency Response;
- (11) Records Control and Retention;
- (12) Safety;
- (13) Wastewater Treatment System Maintenance Requirements and/or Water Reuse System Maintenance Requirements; and
- (14) Spare Parts and Chemical Inventory; and
- (15) Reclaimed water storage and distribution system flushing plan to prevent slime growth, regrowth of pathogens and water age.

## SUBCHAPTER 9. GENERAL STANDARDS

### 252:656-9-2. Essential facilities

(a) **Emergency power facilities.** All plants shall provide standby equipment which will generate electric power to allow continuity of operation, including but not limited to pumping, aeration and disinfection, during power failures.

(b) **Water supply.**

(1) **General.** Provide potable water under pressure to laboratories, restrooms, offices, drinking fountains and showers. Cross-connections between potable and non-potable water lines is prohibited.

(2) **Direct connections.** Potable water from a municipal or separate supply may be used directly at points above grade. Hot water shall not be taken directly from a boiler used for supplying hot water to a sludge heat exchanger or digester heating unit.

(3) **Indirect connections.** Where a potable water supply is to be used for any purpose in a plant other than those listed in paragraph (1), above, provide a break tank, pressure pump, and pressure tank. Discharge water to the break tank through an air gap at least six inches above the maximum flood line or the spill line of the tank, whichever is higher. Post a permanent sign at every hose bib, faucet, hydrant, or sill cock located on the water system beyond the break tank to indicate that the water is not safe for drinking. The installation of a reduced pressure zone backflow prevention device will be considered in lieu of the break tank. To allow maintenance on the backflow prevention device, the design shall include a bypass line with equal backflow prevention. Do not locate back-flow devices in a pit or vault where they may become submerged; they must be easily accessible for routine testing for proper operation.

(4) **Non-potable water outlets.** Post a permanent sign at non-potable water outlets indicating the water is not safe for drinking.

(5) **Prevention of cross-connections.** Do not allow a physical connection between potable water lines, sanitary sewer lines and/or reclaimed water lines unless a break tank is provided. All water discharged to a break tank shall be discharged through an air gap at least six inches (6") above the maximum flood line or the spill line of the tank, whichever is higher.

(c) **Laboratory equipment.** All treatment works shall have access to a laboratory for making analytical determinations and operation control tests.

(d) **Sewage flow measurement.** Flow measurement devices shall be selected for reliability and accuracy. All flow measurement equipment must be sized to function effectively over the full range of flows expected and shall be protected against freezing. Every primary flow measurement device must conform to the standard guidelines in the *Water Measurement Manual*, 3<sup>rd</sup> Edition, published by the United States Department of the Interior, Bureau of Reclamation. An equivalent set of standard guidelines may be used, if approved by the DEQ. Every primary measurement device, sharp crested weir or flume, must be equipped with an affixed staff gauge to measure the liquid level and placed at the proper head measurement location. For continuous flow measurement, the level sensor must be placed at the proper head

measurement location equivalent to the location of the staff gauge so that the head measured using the staff gauge and that measured by the sensor are the same.

(1) **Influent flow.** Provide for the measurement of incoming flow at all non-industrial wastewater treatment plants. Where all incoming flow to a plant having a design flow of less than 0.5 mgd is through a single pump station, flow measurements may be satisfied by the calibration of pumps and the installation of run-time meters. Weirs must not be used to measure influent flow.

(2) **Effluent flow.** For discharging systems, provide for the measurement of wastewater effluent flow in accordance with the system's OPDES permit and OAC 252:606. For lagoon effluent, a baffle shall be provided to prevent the discharge of surface debris and algae to a depth of at least one foot (1') below the weir crest.

(3) **Land application.** For land application systems, effluent flow measurement shall be in accordance with OAC 252:656-25-2(h).

(4) **Closed channel flow measurement.** Provide the complete design information and calculations for all closed channel flow measurement devices.

(e) **Housed facilities.** Where treatment units are in a housed facility, introduce fresh air continuously at a rate of 12 air changes per hour, or intermittently at a rate of 30 air changes per hour. Provide adequate stairway access to above or below ground installations. All electrical installation in enclosed grit removal areas where hazardous gases may accumulate shall meet the requirements of the National Electrical Code.

## SUBCHAPTER 25. WASTEWATER LAND APPLICATION SYSTEMS

### 252:656-25-1. The slow rate land application process

~~Land treatment~~ Slow rate land application is the controlled application of wastewater to the surface of land to achieve a designed degree of treatment through natural, chemical and biological processes that occur on and in the soil. In Oklahoma, slow rate land application systems are acceptable for meeting the agronomic water needs of pasture land, hay meadows and for crop production where the crops will not be eaten raw. See Appendix D for the loading rate, field area and storage volume equations. Refer to ~~Chapters OAC 252:619 and 252:621~~ OAC 252:627 for permit and operations criteria.

### 252:656-25-2. Slow rate land application system design

(a) **Treatment.** Primary treatment ~~is required~~ of wastewater shall be completed in the primary lagoon cell prior to being land applied. ~~Do~~ Wastewater from the primary lagoon cell shall not ~~and apply~~ be land applied from the primary cell.

(b) **Loading rates.** Hydraulic loading, BOD, suspended solids, nitrogen, phosphorus and crop selection must all be considered in the process design of land applications systems. Typically loading rates of BOD and SS for municipal wastewater are far below the loading rates determined by other parameters and will not be a concern in system design.

(c) **Land area.** The total area required for a ~~wastewater~~ slow rate land application system includes the field area (application site), treatment and storage site (normally primary treatment lagoons and storage ponds), buffer zones and service roads.

(d) **Control.** The applicant shall show they have the right to control the use of the land application site. A long-term contract for a minimum of 20 years is required.

(e) **Buffer zone.** A buffer zone of at least 100 feet in width shall be provided between the land application site and adjacent property. Additional distance may be required where prevailing winds could cause aerosols to drift into residential areas. The buffer zone shall be a part of the permitted site.

(f) **Public contact.** ~~Disinfect the wastewater,~~ Wastewater shall be disinfected in accordance with 252:656-21 if it is to be applied to public contact areas.

(g) **Storage.** Storage of wastewater is required for periods when available wastewater exceeds design hydraulic loading rate, and when the ground is saturated or frozen. A water balance computation is used to estimate the storage requirement. Provide water balance computations of the estimated storage needs. There shall be at least 90 days of storage in addition to the detention time required for primary treatment.

The monthly available wastewater for each month shall be determined by equation (25-5) in Appendix D.

(h) **Flow measurement.** Provide for the measurement of wastewater to be land-applied. Flow measurement shall be accomplished by flow meters, or the calibration of pumps and installation of run-time

meters.

(i) **Restrictions.** There shall not be any berms or other barriers on a land application site that would cause the pooling or ponding of wastewater at the land application site. Additionally, there shall not be any berms or barriers that impede the natural flow of stormwater from the site. No land application site shall exceed the maximum slope requirements at ~~252:621-5-2~~ OAC 252:627-3.

## SUBCHAPTER 27. WASTEWATER REUSE

### **252:656-27-1. Categories of reclaimed water**

(a) **Categories of reclaimed water.** The following are the categories of and allowed uses for reclaimed water:

(1) **Category 2.** Category 2 reclaimed water shall only be used for the allowed 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); and
- (G) range cattle watering.

(2) **Category 3.** Category 3 reclaimed water shall only be used for the allowed 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 and once-through cooling systems; and
- (I) restricted access irrigation of sod farms.

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

- (A) soil compaction and similar construction activities; and
- (B) existing restricted access 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 golf course irrigation systems pending further research and evaluation of performance data collected from existing systems.

(4) **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.

### **252:656-27-2. General provisions**

(a) **Prohibition against cross connections.** Permittees shall not allow physical connections between reclaimed water lines and public water supply lines. Permittees shall follow the requirements of OAC 252:626-5-15 and OAC 252:656-9-2.

(b) **Separation distances.** Systems shall be designed to ensure that direct and wind-blown spray from irrigation systems and other sources are confined to the designated irrigation areas. Systems shall also be designed to comply with the following minimum buffer zones and setback distances, with all distances being measured from the edge of the wetted perimeter of the irrigation area to the edge of the following features:

(1) **Wells.** Permittees shall maintain the following separation distances from wells for all categories of reclaimed water:

- (A) three hundred feet (300') from public wells; and

- (B) fifty feet (50') from private water wells.
- (2) **Waters of the state.** Permittees shall maintain the following separation distances from creeks, lakes, ponds and other waters of the state:
  - (A) Category 2 reclaimed water - twenty-five feet (25'); and
  - (B) Categories 3, 4 and 5 reclaimed water - fifty feet (50').
- (3) **Property lines.** Permittees shall maintain the following separation distances from adjacent property lines:
  - (A) Category 2 reclaimed water - twenty feet (20'); and
  - (B) Categories 3, 4 and 5 reclaimed water - one hundred feet (100').
- (c) **Flow measuring devices.** Permittees shall provide flow measuring devices to measure the amount of reclaimed water being generated and distributed. Flow measurement devices shall have recording, totalizing and instantaneous indicating capabilities.
- (d) **Control of land application site(s).** Wastewater treatment facilities that depend on land application to maintain total retention shall demonstrate they have the right to control the site(s) on which the effluent is applied. If Permittees do not own the land application site(s), long-term leases and/or contractual agreements for a minimum of twenty (20) years are required for each land application site.
- (e) **Prohibition.** Wastewater facilities that utilize lagoon systems for treatment shall not be used as sources of Categories 2 or 3 reclaimed water.
- (f) **Reclaimed water sources.** Only wastewater from facilities permitted pursuant to this Chapter may be used as a source for reclaimed water.

### **252:656-27-3. Treatment**

- (a) **Category 2 reclaimed water.** Water reuse systems generating Category 2 reclaimed water shall include the following:
  - (1) **Secondary treatment.** A secondary suspended growth mechanical treatment process, or the equivalent approved by DEQ as a variance, capable of producing an effluent that conforms to the limits specified in Appendix A of OAC 252:627.
  - (2) **Nutrient removal.** A process in accordance with OAC 252:656-16-3 that will remove nutrients to the level required based on the final use of the reclaimed water. Systems may be exempt from the requirement to remove nutrients when documentation is provided to show that nutrients are utilized based on the agronomic and/or crop uptake rates of the final use.
  - (3) **Coagulation.** Coagulation with chemicals following the secondary treatment process.
    - (A) Coagulation, chemical feed and storage equipment shall meet the requirements of OAC 252:626-9 and OAC 252:626-11; and
    - (B) Rapid mix or inline static mixers shall be used to ensure the rapid dispersion and mixing of chemicals through the reclaimed water.
  - (4) **Filtration.** Granular media effluent filtration in accordance with OAC 252:656-23-1.
  - (5) **Turbidimeters.** Continuous online turbidimeters with recording devices installed following filtration and prior to disinfection.
  - (6) **Disinfection.** Disinfection by chlorination or a combination of UV and chlorination in accordance with OAC 252:656-21 and OAC 252:656-3-4(b)(7)(C). The method of disinfection shall achieve:
    - (A) 5-log removal or inactivation of Adenovirus type 15;
    - (B) 5-log removal or inactivation of *Salmonella typhimurium*; and
    - (C) 3-log removal or inactivation of *Giardia lamblia*.
- (b) **Category 3 reclaimed water.** Water reuse systems generating Category 3 reclaimed water shall include the following:
  - (1) **Secondary treatment.** The secondary suspended growth mechanical treatment process, or the equivalent approved by DEQ as a variance, shall be capable of producing an effluent that conforms to the limits specified in Appendix A of OAC 252:627.
  - (2) **Nutrient removal.** A process in accordance with OAC 252:656-16-3 that will remove nutrients to the level required based on the final use of the reclaimed water. Systems may be exempt from the requirement to remove nutrients when documentation is provided to show that nutrients are utilized based on the agronomic and/or crop uptake rates of the final use.
  - (3) **Disinfection.** Disinfection by chlorination in conformance with OAC 252:656-21 at the point of



entry into the distribution system.

(c) **Category 4 reclaimed water.** Existing golf course land application systems generating Category 4 reclaimed water shall include the following:

(1) **Primary treatment.** Primary treatment through a wastewater lagoon system designed in accordance with OAC 252:656-11 and OAC 252:656-25-2(g) and (h).

(2) **Disinfection.** Chlorination in conformance with OAC 252:656-21 to disinfect the reclaimed water at the point of entry into the distribution system.

(3) **Storage detention time.** Storage detention time following primary treatment in accordance with OAC 252:656-25-2(g).

(d) **Category 5 reclaimed water.** Water reuse systems generating Category 5 reclaimed water shall include primary treatment through a wastewater lagoon system designed in accordance with OAC 252:656-11 and OAC 252:656-25-2(g) and (h).

#### **252:656-27-4. Distribution systems**

(a) **Piping.** All reclaimed water piping, valves, outlets and appurtenances in distribution systems shall be colored purple (Pantone 522) and shall be embossed or integrally stamped with a warning that includes the following:

(1) the word "CAUTION;"

(2) specifies the category number of the reclaimed water; and

(3) the words "DO NOT DRINK;"

(e.g.: "CAUTION: CATEGORY #3 RECLAIMED WATER-DO NOT DRINK.") For all pipes, the warning shall be located on opposite sides of all pipes and repeated every three feet (3') or less.

(b) **Hose bibs.** Hose bibs shall be located in locked, below-grade vaults. Reclaimed water hose bibs, hydrants and/or similar outlets shall be equipped with warning signs that indicate the water is not safe for drinking.

(c) **Gravity pipes.** Reclaimed water gravity pipes shall be designed and constructed to meet the requirements of OAC 252:656-5-2, OAC 252:656-5-3, OAC 252:656-5-4 and OAC 252:656-5-5.

(d) **Pumping stations and force mains.** Pumping stations and force mains shall be designed and constructed in accordance with OAC 252:656-7-1 through 4, with the following exceptions:

(1) Pump openings less than three inches (3") may be allowed when settled or filtered reclaimed water is pumped.

(2) Water reuse systems with the ability to divert all reclaimed water to the wastewater's permitted discharge point, without operator assistance, may be exempt from the requirement to equip the lift station with emergency wet well storage, backup power supply or duplicate pumps.

(e) **Reclaimed water flushing system.** Reclaimed water distribution systems shall be designed with all appurtenances necessary to adequately flush the distribution system to prevent slime growth and the regrowth of pathogens. Flushing plans shall be developed for all reclaimed water distribution systems and submitted for DEQ approval. Flushing plans shall also be included in reclaimed water systems' O&M manuals [see OAC 252:656-3-10] and in suppliers' DEQ approved inspection programs [see OAC 252:627-1-5(f)]. All flushing systems shall include at a minimum:

(1) provisions for disposal of flushed water that prevent bypasses and discharges to waters of the or elsewhere; and

(2) air gaps designed pursuant to OAC 252:656-9-2 for all discharges to sanitary sewers.

#### **252:656-27-5. Storage, retreatment and chlorination**

(a) **Storage.** Reclaimed water may be stored as follows:

(1) **Storage tanks.** Categories 2-5 reclaimed water may be stored in storage tanks that meet NSF or ASTM standards for public water supply storage tanks.

(2) **Open storage basins.** Categories 2 and 3 reclaimed water may be stored in open storage basins that are permitted and constructed in compliance with OAC 252:656-11-3 and operated as a lagoon in accordance with OAC 252:619 or OAC 252:621.

(3) **Lagoons.** Categories 4 and 5 reclaimed water may be stored in lagoons that are permitted and constructed in compliance with OAC 252:656-11-3 and operated in accordance with OAC 252:619 or OAC 252-621.

(b) **Retreatment.** Following storage in an open storage basin, Category 2 reclaimed water shall be retreated with filtration and chlorination, at a minimum, to prevent slime growth and regrowth of pathogens to end-of-pipe.