

**TITLE 252. DEPARTMENT OF ENVIRONMENTAL QUALITY  
CHAPTER 631. PUBLIC WATER SUPPLY OPERATION**

**SUBCHAPTER 1. INTRODUCTION**

**252:631-1-2. 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:

**"Accredited laboratory"** means a laboratory accredited through the DEQ laboratory accreditation program.

**"Approved laboratory"** means a laboratory certified or approved by EPA, DEQ, or an EPA approved third party certification program (such as the National Sanitation Foundation, and Drinking Water Accreditation Program).

**"AWWA"** means the American Water Works Association.

**"Direct Integrity Test"** means a physical test applied to a membrane unit in order to identify and isolate integrity breaches.

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

**"Disinfection"** means a process that inactivates pathogenic organisms in water by chemical oxidants or equivalent agents.

**"EPA"** means the Environmental Protection Agency.

**"Groundwater under the direct influence of surface water"** means any water beneath the surface of the ground with significant occurrence of insects or other macroorganisms, algae, or large-diameter pathogens such as *Giardia Lamblia* or *Cryptosporidium*, or significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH that closely correlate to climatological or surface water conditions.

**"Indirect Integrity Monitoring"** means monitoring some aspect of membrane filtrate water quality that is indicative of the removal of particulate matter.

**"Laboratory checks"** means chemical, radiochemical, physical, bacteriological, and microbiological tests made in a laboratory approved by the DEQ, on water samples submitted to confirm the quality of the water.

**"Maximum contaminant level (MCL)"** means the maximum permissible level of a contaminant in a Public Water Supply system that has been determined to be necessary to safeguard the public health as specified in these regulations. MCL are the same as primary drinking water standards.

**"Maximum residual disinfectant level (MRDL)"** means the level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects. Compliance with the MRDL will be determined using the disinfectant concentration measured at the time Total Coliform Rule (TCR) samples are collected.

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

**"Operating records and reports"** means the daily record of data connected with the operation of the system compiled in a monthly report.

**"OWRB"** means the Oklahoma Water Resources Board.

**"Point of connection (POC)"** means the point at which a consecutive system receives water from the wholesale system. This is not the same as a "point of entry".

**"Point of entry (POE)"** means the point at which a source or combination of sources enters the distribution system.

**"Primary Drinking Water Standards"** means the same as MCL.

**"Protected groundwater free of sanitary defects"** means a ground water source that is properly designed and permitted, practices full-time chlorination, and is properly operated and maintained as evidenced by no critical deficiencies on inspections.

**"Public Water Supply (PWS) system"** means a system, whether publicly or privately

owned, which supplies water under pressure to the public through pipes or other constructed conveyances whether receiving payment for same or not. Multi-family dwellings, which are constructed, inspected, and maintained under State Health Department-approved plumbing code, purchase water from a permitted water system, do not provide treatment, and do not resell water, are not classified as a Public Water Supply system. The following are the categories of Public Water Supply systems:

(A) **"Community water system"** means any PWS system that serves at least fifteen (15) service connections used by year-round residents or regularly serves at least twenty-five (25) year-round residents.

(B) **"Non-community water system"** means any PWS system that serves an average of at least twenty-five (25) individuals at least sixty (60) days per year but is neither a community water system nor a non-transient non-community water system.

(C) **"Non-transient non-community (NTNC) water system"** means any PWS system that is not a community water system and that regularly serves at least twenty-five (25) of the same persons over six months per year.

(D) **"Minor water system"** means any other PWS system not included in (A), (B), or (C) of this definition. These water systems may be state licensed facilities or non-licensed facilities and ~~is~~ are regulated in OAC 252:624.

**"Residual disinfectant concentration"** means the concentration of disinfectant measured in milligrams per liter (mg/l) in a representative sample of water.

**"Secondary standard"** means a non-mandatory guideline that has been determined to be desirable to provide acceptable drinking water.

**"Slow sand filtration"** means a process involving passage of raw water through a bed of sand at low velocity (generally less than 50 gallons/sq.ft./day) resulting in substantial particulate removal by physical and biological mechanisms.

**"Source"** means any lake, stream, spring or groundwater supply that is used as treated or untreated water for a PWS system.

**"Total coliform positive sample"** means a sample in which one or more coliform organisms are found.

**"Treatment technique"** means the practice of a PWS system to properly remove pathogens and total organic carbon.

**"Turbidity"** means the amount of suspended material in water as measured by Nephelometric Turbidity Units (NTU).

**"Water Treatment"** means the act of removing contaminants from source water or adjusting water quality by the addition of chemicals, filtration, and other processes, thereby making the water safe for human consumption.

### **252:631-1-3. Adoption of U.S. EPA regulations by reference**

The provisions of Parts 141, "National Primary Drinking Water Regulations," and 143, "National Secondary Drinking Water Regulations," of Title 40 of the Code of Federal Regulations (CFR) as published on July 1, 2013~~2014~~, and the requirements contained therein are, unless otherwise specified, adopted and incorporated by reference.

## **SUBCHAPTER 3. OPERATIONS**

### **252:631-3-2. ~~Laboratory approval~~ Laboratory accreditation**

Compliance analyses for coliform, inorganics, organics, radioactivity and corrosivity contaminants must be performed in a laboratory ~~approved by the EPA or the~~ accredited by the DEQ. Laboratory certification must be based upon Safe Drinking Water Act requirements and must be specific to each parameter analyzed. An accredited lab must transmit the analyses to the DEQ in an electronic form acceptable to the DEQ, no later than the first ten (10) days following

the month in which the result is received or the first ten (10) days following the end of the required monitoring period. Testing required for compliance with turbidity treatment technique, disinfectant residual, temperature and pH requirements may be performed by a laboratory operator certified by the DEQ. Process control tests may be performed by a laboratory operator certified by the DEQ. ~~The DEQ may approve a laboratory for the purposes of testing for compliance with primary drinking water standards upon written submittal of a request for approval from the owner of the laboratory and upon proof satisfactory to the DEQ that the laboratory:~~

- ~~— (1) possesses sufficient personnel, equipment, and facilities;~~
- ~~— (2) implements an adequate quality control and quality assurance program;~~
- ~~— (3) owns and will continue to own sufficient managerial and financial resources to continuously comply with and implement all requirements of "Standard Methods for the Examination of Water and Wastewater" in accordance with the current "Manual for the Certification of Laboratories Analyzing Drinking Water," and~~
- ~~— (4) transmits the analyses to the DEQ in an electronic form acceptable to the DEQ, no later than the tenth (10<sup>th</sup>) day of the following month.~~

### **252:631-3-3. Disinfection requirements**

(a) **Mandatory disinfection.** Full-time disinfection is mandatory for:

- (1) surface water, groundwater under the direct influence of surface water, and spring water supplies unless an alternative has been approved by the DEQ. Each of these systems shall provide disinfection in accordance with 40 CFR Section 141.72(b) and meet the monitoring requirements contained in 40 CFR Section 141.74(c).
- (2) groundwater supplies or purchase water systems whenever their record of bacteriological tests show:
  - (A) a persistent presence of Total Coliform; or
  - (B) a verified Fecal Coliform, or E. Coli MCL exceedance;
- (3) PWS systems that purchase water from a public water supply under mandatory disinfection, unless the purchase water system verifies chlorine residuals that are in compliance with (c) or, if chloramines are used, (d) of this Section; and
- (4) any new well in a system where the initial bacteriological tests of the well do not show a safe record with the DEQ for 2 consecutive days after completion and testing of the well.

(b) **Modification of disinfection methods.** When any change in the disinfection process is contemplated, contact the DEQ. Submittal of an application, including plans, specifications, engineering reports, disinfection profile and disinfection benchmark justifying such a change may be required in order to obtain approval from the DEQ.

(c) **Chlorine.** The minimum free chlorine residuals shall be as follows:

- (1) **Most distant points.** The minimum free chlorine residual at the most distant points in a water distribution system must be 0.2 mg/l.
- (2) **Point of entry.** The minimum free chlorine residual at the POE shall be at 1.0 mg/l. For supplies that document they meet or exceed the inactivation requirements in 252:631-3-3(a)(1), the minimum free chlorine residual at the POE shall be 0.2 mg/l.
- (3) **Point of connection.** The minimum free chlorine residual at the POC shall be 0.2 mg/l and shall be monitored and reported by the purchase water system (see also 252:631-3-10(3)).

(d) **Chloramines.**

- (1) **Prior public notice.** Systems must notify all users of kidney dialysis machines at least one month before introducing chloramines into the distribution system or starting chloramination.
- (2) **Chloramines engineering study.** Before changing to chloramines as the residual disinfectant in the distribution system, the system must conduct and submit to the DEQ for approval an engineering study and weekly analyses for at least 6 weeks prior to and quarterly for one year following such a change of disinfectant. The engineering study and analysis must address the following:
  - (A) Select at least 4 sample points for each treatment plant used by the system. At least 25% of the sample points must be at locations within the distribution system reflecting the

maximum residence time of water in the system; and

(B) Collect samples from the selected points weekly for 6 weeks and perform the following analyses using the methods approved in 40 CFR 141.74(a)(1) before modification of treatment is initiated:

- (i) Total coliform;
- (ii) Fecal coliform; and
- (iii) Heterotrophic Plate Count

(3) **Continuing testing.** After modification of the treatment process, perform the bacteriological tests for samples collected at each of the selected points at quarterly intervals for one year, and then annually, when samples are collected for total trihalomethane determination. Submit the results to the DEQ.

(4) **Primary Disinfection.** A disinfectant must be added to provide the required log inactivation of *Giardia Lamblia* cysts before ammonia is added.

(5) **Total chlorine.** The minimum total chlorine residual at the most distant points in a water distribution system must be 1.0 mg/l, 1.0 mg/l at the POC, and at least 2.0 mg/l at the POE. Higher residuals may be required depending on pH, temperature and other characteristics of the water.

(e) **Other disinfectants.** Iodine or bromine compounds shall not be used as a disinfectant. Ozone, chlorine dioxide, or ultraviolet light may be used for in-plant treatment or disinfection provided chlorine or chloramine residual is maintained according to this Section.

#### **252:631-3-4. Validation of data**

Notwithstanding other provisions of this Chapter, samples that are not properly collected or submitted, not collected by trained and authorized personnel, not analyzed in an approved accredited laboratory, or samples that do not represent the distribution system must not be used to determine compliance with these regulations. Total coliform positive samples, which are due to improper analysis, domestic or other non-distribution plumbing problems, or due to circumstances or conditions that do not reflect water quality in the distribution system must not be counted toward meeting minimum monitoring requirements. The DEQ must document the determination that there are circumstances or conditions that do not reflect water quality in the distribution system. A sample that produces a turbid culture in the absence of gas production, produces a turbid culture in the absence of an acid reaction, exhibits confluent growth, or produces colonies too numerous to count must be invalidated and replaced with another sample within twenty-four (24) hours of notification by the state.

#### **252:631-3-10. Process control tests**

Control tests must be performed in accordance with procedures approved by the DEQ.

(1) **Surface water, groundwater under the direct influence of surface water, and springs.**

(A) Systems that use coagulation, settling, softening or filtration must do the following chemical control tests on the filtered water twice a day, record the results on a report form provided or approved by the DEQ, and submit the form to the DEQ Water Quality Division each month, with a copy to the local DEQ representative:

- (i) Alkalinity - Phenolphthalein (P);
- (ii) Alkalinity - Total;
- (iii) Hardness (where softening is used);
- (iv) pH value; and
- (v) Stability to calcium carbonate (once per day);

(B) Perform jar tests as needed to determine the optimum coagulant dosages for plant control and operation to meet turbidity requirements.

(C) Turbidity and residual disinfection samples must be collected and analyzed in accordance with 40 CFR Part 141, Subparts H and P.

(D) Systems that use membrane filtration shall perform direct integrity testing and indirect integrity monitoring in accordance with 40 CFR Part 141.719(b)(3) and (4).

(2) **Groundwater supplies.** The following tests are required for public water supply systems

utilizing groundwater as a source. Test results must be listed as indicated on the appropriate forms and submitted to DEQ:

(A) For all public water supply systems that practice chlorination, the chlorine residual shall be tested and recorded once daily at the POE;

(B) For community and ~~non-transient non-community~~ NTNC public water supply systems:

Static level and pumping level of each well must be determined quarterly;

(i) Alkalinity, pH, and stability must be determined at least monthly for community systems and at least quarterly for non-transient non-community water systems;

(ii) Where ion-exchange softening is provided, determine the hardness of the finished water once a day; and

(iii) Where nanofiltration, reverse osmosis or electro dialysis is provided, perform the following chemical control tests on the treated water once a day:

(I) Alkalinity – Phenolphthalein (P),

(II) Alkalinity – Total,

(III) Hardness,

(IV) pH value, and

(V) Stability to calcium carbonate.

(3) **Purchase water systems.** Purchase water systems that are required to maintain a disinfection residual must determine the chlorine residual once daily at the ~~point(s) of connection~~ POC to the wholesale system or in accordance with a sampling plan approved by DEQ.

(4) **Special tests.**

(A) Systems that remove iron or manganese must test the raw and finished water weekly for those metals.

(B) Systems that treat or blend for the reduction in concentration of regulated contaminants must monitor the raw and finished water for those contaminants daily in addition to collecting compliance samples.

(C) Threshold odor and other tests may be required by the DEQ based on local conditions.

(D) Systems that treat or blend for the reduction in concentration of nitrates must test the raw and finished water at least once a day for nitrates.

(E) Systems that apply phosphate chemicals in the treatment process must test the finished water at least once a day for phosphates.

(5) **Fluoridation.** Where fluoridation is practiced, the system must:

(A) analyze the water twice a day for fluoride content, both before and after fluoridation;

(B) forward a copy of the analytical report (ODH form No. 561/DEQ form No. 631-001) to the DEQ monthly and keep a copy at the plant (ODH also requires a copy); and

(C) submit a sample of treated water to the DEQ State Environmental Laboratory, or to a DEQ-accredited laboratory, for analysis of fluoride content every month.

(6) **Sampling disinfectants in distribution system.** The following control tests shall be performed in the distribution system for by all systems that disinfect. Sampling points shall be changed regularly so ~~that~~ the system is sampled completely at least once each week or in accordance with a sampling plan approved by DEQ.

(A) **Chlorine.** Systems that use chlorine shall test for free chlorine and total chlorine residual twice a day in the distribution system.

(B) **Chloramines.** Systems that use chloramines shall test for total chlorine residual twice a day in the distribution system. See 252:631-3-3(d) for the requirements for Heterotrophic Plate Counts.

(C) **Other disinfectants.** Systems that use ozone or chlorine dioxide shall perform process control tests in accordance with 40 CFR Section 141.132.

### **252:631-3-11. Operating records & reports**

(a) **Immediate notification to DEQ.** Each system must report to the DEQ by the end of the next

business day if any of the following occur:

- (1) Waterborne disease outbreak;
- (2) Finished water turbidity exceeds 1 NTU;
- (3) Chlorine residual falls below 0.2 mg/l at the POE and whether the residual was restored to at least 0.2 mg/l within 4 hours;
- (4) Nitrate level exceeds 10 mg/l;
- (5) Verification of a positive Fecal Coliform or E. Coli sample; and
- (6) Exceedance of the Chlorine Dioxide MRDL.

(b) **Records.** All systems must keep a daily record of the results of required process control tests and list the results of microbiological checks on the dates sampled. The records of all laboratory checks and control tests must indicate when, where, and by whom the tests were made. The PWS system must complete and submit the original of the DEQ-approved monthly operational report form to the DEQ with a copy to the appropriate local DEQ representative no later than the tenth (10th) day of the following month.

(c) **Water treatment systems.**

(1) Systems that provide water treatment must keep:

- (A) a daily record of the operations performed in the treatment process;
- (B) observations, cost and occurrences related to the operation of the plant; and
- (C) the control tests and laboratory checks previously described in 252:631-3-10.

(2) In addition, water treatment plants designed for turbidity and microbial removal must keep:

- (A) the number of filtered water turbidity samples taken during the month;
- (B) the number and percentage of turbidity samples that are less than or equal to the standards; ~~and~~
- (C) the date and value of any turbidity measurements that exceed 1 and 5 NTU. Where continuous monitoring is used, measurements must be recorded every 4 hours during plant operation; ~~and~~
- (D) the results of direct integrity testing and indirect integrity monitoring for membrane filtration as required in 252:631-3-10(1)(D).

(d) **Groundwater systems.** Operators of groundwater systems must keep a daily record of all well operations, in addition to the process control tests and laboratory checks required for ground water supplies.

(e) **Purchase water systems.** Purchase water systems that are required to maintain a disinfection residual must submit a monthly operational report to the DEQ of the operation of the system, in addition to required laboratory checks.

(f) **Record keeping.** All records must be available for inspection by the DEQ and maintained for at least 10 years unless otherwise specified.