5 CCR 1002-11

This document reflects all regulations in effect as of April 25, 2015

Colorado Code of Regulations > ***DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT*** > ***WATER QUALITY CONTROL COMMISSION***

5 CCR 1002-11. PRIMARY DRINKING WATER REGULATIONS

11.8(3) Disinfection Treatment Technique Requirements

(a) Applicability for Disinfection Treatment Technique Requirements

(i) For all surface water systems, the supplier must comply with the disinfection treatment technique requirements specified in this section, 11.8(3).

(ii) When the Department determines that a groundwater source is under the direct influence of surface water, and therefore the system is reclassified as a surface water system, the supplier must comply with all of the following:

(A) Either Department-determined interim disinfection requirements or disinfection treatment technique requirements specified in 11.8(3)(b), no later than 60 days after written notification from the Department of the decision to change the source's classification; and

(B) All requirements specified in this section, 11.8(3), no later 18 months after written notification from the Department of the decision to change the source's classification or no later than when the filtration is installed, whichever is sooner.

(b) Treatment Technique Requirements for Disinfection

(i) The disinfection treatment technique requirements are as follows:

(A) The supplier must maintain disinfection treatment sufficient to ensure that the total treatment processes, including filtration and disinfection, achieve 99.9 percent (3-log) treatment of Giardia lamblia cysts and 99.99 percent (4-log) treatment of viruses, as determined by the Department.

(B) The supplier must maintain a residual disinfectant concentration at each entry point and throughout the distribution system.

(I) At each entry point, the residual disinfectant concentration cannot be less than (<) 0.2 mg/L for more than four hours.

(II) In the distribution system, until March 31, 2016, the residual disinfectant concentration cannot be undetectable in more than 5 percent of the samples collected in each month, for two consecutive months during which the system supplies water to the public.

(III) In the distribution system, beginning April 1, 2016, the residual disinfectant concentration must be greater than or equal to ([greater than or equal]) 0.2 mg/L.

(ii) No later than December 31, 2015, the supplier may apply to the Department for an extension for complying with the treatment technique requirements specified in 11.8(3)(b)(i)(B)(III).

(A) In the application, the supplier must include all of the following information:

(I) An explanation of why the supplier is unable to comply with the treatment technique requirements specified in 11.8(3)(b)(i)(B)(III).

(II) A distribution system disinfectant residual data analysis demonstrating the inability to comply with the treatment technique requirements specified in 11.8(3)(b)(i)(B)(III).

(III) An engineering report prepared by a professional engineer registered in the state of Colorado demonstrating that capital improvements are necessary to comply with the treatment technique requirements specified in 11.8(3)(b)(i)(B)(III).

(IV) A proposed schedule for completing the system modifications.

(B) The Department shall consider the following criteria when determining if an extension will be granted:

(I) The supplier submitted a complete application that included the information specified above;

(II) The supplier has complied with the monitoring requirements specified in 11.17 in the last 36 months; and

(III) The supplier has not incurred an MCL violation specified in 11.17(9) in the last 36 months.

(iii) The Department will only grant an extension for up to four years.

(iv) If the supplier receives written Department-approval for an extension, the supplier must:

(A) Continue to comply with the treatment technique requirements specified in 11.8(3)(b)(i)(B)(II) and is subject to the violation specified in 11.8(3)(d)(i)(B) until the capital improvements are completed or the extension expires, whichever comes first; and

(B) Comply with any Department-specified requirements.

(c) Monitoring Requirements for Disinfection Treatment Technique Requirements

(i) To determine compliance with the disinfection treatment technique requirements, the supplier must monitor the residual disinfectant concentration.

(A) At each entry point, the supplier must continuously monitor the residual disinfectant concentration.

(I) The supplier must record the lowest monitoring result each day.

(II) If there is a failure of the continuous monitoring equipment, the supplier must monitor the residual disinfectant concentration by collecting a grab sample no later than four hours after the equipment failure and continue collecting grab samples every four hours until the continuous monitoring equipment is returned to service.

(a) The supplier must resume continuous residual disinfectant concentration monitoring no later than five working days after the equipment failure.

(III) For systems supplying less than or equal to ([less than or equal]) 3,300 people, the supplier is not required to monitor continuously if the supplier collects grab samples at the frequency specified in Table 11.8-II.

(a) If more than one sample per day is required, the supplier must collect the samples throughout the day. The sampling intervals are subject to Department approval.

(b) If any grab sample result is less than (<) 0.2 mg/L, the supplier must increase the monitoring frequency of the residual disinfectant concentration at that entry point to at least every four hours until the residual disinfectant concentration is greater than or equal to ([greater than or equal]) 0.2 mg/L.

Display Table

(B) In the distribution system, the supplier must monitor the residual disinfectant concentration at the same time and at the same sampling locations that total coliform samples are collected under 11.17(3) until March 31, 2016, and collected under 11.16(6-7) beginning April 1, 2016.

(I) The supplier must measure the residual disinfectant concentration as free chlorine unless the supplier uses a disinfection process that results in a monochloramine residual disinfectant, then the supplier must measure the residual disinfectant concentration as total chlorine. If the supplier uses a different type of chemical disinfectant (e.g., ozone or chlorine dioxide), the supplier must measure the appropriate residual disinfectant concentration.

(II) For systems using both surface water and groundwater sources, the Department may allow the supplier to collect residual disinfectant concentration samples at locations other than the total coliform sampling locations if the Department determines that other locations are more representative of finished water quality in the distribution system.

(d) Treatment Technique Violations for Disinfection

(i) The following constitute disinfection treatment technique violations:

(A) At any entry point, the residual disinfectant concentration is less than (<) 0.2 mg/L for more than four hours.

(B) In the distribution system, until March 31, 2016, the residual disinfectant concentration is not detectable in more than 5 percent of the samples collected in each month, for two consecutive months that the system supplies water to the public.

(I) If the Department grants an extension under 11.8(3)(b)(ii), the supplier is subject to this violation after March 31, 2016 and until capital improvements are completed or the extension expires, whichever comes first.

(C) In the distribution system, beginning April 1, 2016:

(I) If the supplier collects greater than or equal to ([greater than or equal]) 40 residual disinfectant concentration samples per month, the residual disinfectant concentration is less than (<) 0.2 mg/L in more than 5 percent of the samples collected.

(II) If the supplier collects greater than (>) one but less than (<) 40 residual disinfectant concentration samples per month, the residual disinfectant concentration is less than (<) 0.2 mg/L in more than one sample collected.

(III) If the supplier collects greater than (>) one but less than (<) 40 residual disinfectant concentration samples per month, the residual disinfectant concentration is less than (<) 0.2 mg/L in more than 5 percent of the samples collected in each month for two consecutive months that the system supplies water to the public.

(IV) If the supplier collects only one residual disinfectant concentration sample per monitoring period, the residual disinfectant concentration is less than (<) 0.2 mg/L.

(D) Any time the supplier fails to comply with the treatment technique requirements specified in 11.8(3)(b)(i)(A).

(e) Response to Disinfection Treatment Technique Violations

(i) In the event of an entry point disinfection treatment technique violation as specified in 11.8(3)(d)(i)(A), the supplier must:

(A) Notify the Department no later than the end of the next business day.

(B) Distribute Tier 2 public notice as specified in 11.33.

(ii) In the event of a disinfection treatment technique violation as specified in 11.8(3)(d)(i)(B-D), the supplier must:

(A) Notify the Department no later than 48 hours after the violation occurs.

(B) Distribute Tier 2 public notice as specified in 11.33.

(f) Reporting Requirements for Disinfection Monitoring

(i) If at any time the entry point residual disinfectant concentration is less than (<) 0.2 mg/L, the supplier must notify the Department as soon as possible but no later than the end of the next business day.

(A) The supplier must also report, no later than the end of the next business day, whether the entry point residual disinfectant concentration was restored to at least 0.2 mg/L within four hours.

(ii) For residual disinfectant concentration samples collected under 11.8(3)(c), the supplier must submit all of the following information no later than the 10 [th] of the following month:

(A) For each entry point, the lowest daily residual disinfectant concentration result in mg/L.

(B) The date and duration of each period when the entry point residual disinfectant concentration fell below 0.2 mg/L and when the Department was notified of the occurrence.

(C) For distribution system residual disinfectant concentration samples until March 31, 2016:

(I) The number of sample results that were undetectable.

(II) The percentage of sample results that were undetectable for each of the last two months.

(D) For distribution system residual disinfectant concentration samples beginning April 1, 2016:

(I) The number of sample results that were less than (<) 0.2 mg/L.

(II) The percentage of sample results that were less than (<) 0.2 mg/L for each of the last two months.

(g) Monitoring Requirements for Alternative Disinfection- Heterotrophic Bacteria

(i) In the distribution system, the supplier may monitor for heterotrophic bacteria, measured as Heterotrophic Plate Count (HPC), instead of residual disinfectant concentration.

(A) If the supplier is monitoring for heterotrophic bacteria instead of residual disinfectant concentration, heterotrophic bacteria concentrations less than or equal to ([less than or equal]) 500 CFU/ml are considered to have a detectable residual disinfectant concentration for purposes of determining compliance with the treatment technique requirement specified in 11.8(3)(b)(i)(B)(II) and must be included with the reporting requirements specified in 11.8(3)(f)(ii)(C).

(B) If the supplier is monitoring for heterotrophic bacteria, the supplier is not required to comply with the requirements for the distribution system residual disinfectant concentration specified in this section, 11.8(3) if the Department determines that the supplier meets all of the following criteria:

(I) Providing adequate disinfection in the distribution system.

(II) Not capable of having a sample transported and analyzed for HPC by a certified laboratory within the required time and temperature conditions specified by approved analytical methods.