W. Va. CSR § 64-77-6

This section is current through regulations in effect as of May 2015

West Virginia Code of State Rules > ***WEST VIRGINIA STATE BOARD OF HEALTH*** > ***SERIES 77. PUBLIC WATER SYSTEMS DESIGN STANDARDS***

§ 64-77-6. Treatment (General and Clarification).

Omitted 6.1-6.3

6.4. ***Disinfection***. -- Chlorine is the preferred ***disinfecting*** agent. ***Disinfection*** may be accomplished with gas and liquid chlorine, calcium or sodium hypochlorites, chlorine dioxide, ozone or ultraviolet light. Other ***disinfecting*** agents may be considered, providing reliable application equipment is available and testing procedures for a ***residual*** are recognized in "Standard Methods for the Examination of Water and Wastewater," latest edition. Continuous ***disinfection*** is required for all public water systems. Since ***disinfection*** agents other than chlorine usually demonstrate shortcomings when applied to a public water system, proposals for use of ***disinfecting*** agents in combination with chlorine or other than chlorine require approval by the BPH prior to preparation of final plans and specifications.

6.4.a. Chlorination equipment.

6.4.a.1. Type. -- Solution-feed, gas chlorinators or hypochlorite feeders of the positive displacement type shall be provided.

6.4.a.2. Capacity. -- The chlorinator capacity shall be such that a free chlorine ***residual*** of at least two (2) milligrams per liter can be maintained in the water to meet the CT for surface water and ground water when maximum flow rate coincides with anticipated maximum chlorine demand, maximum pH and minimum temperatures. The equipment shall be of such design that it operates accurately over the desired feeding range.

6.4.a.3. Standby equipment. -- Standby equipment of sufficient capacity shall be available to replace the largest unit. Spare parts shall be made available to replace parts subject to wear and breakage. If there is a large difference in feed rates between routine and emergency dosages, a gas metering tube shall be provided for each dose range to ensure accurate control of the chlorine feed.

'6.4.a.4. Automatic switchover. -- Automatic switchover of chlorine cylinders shall be provided, where necessary, to assure continuous ***disinfection***.

6.4.a.5. Automatic proportioning. -- Automatic proportioning chlorinators are required where the rate of flow or chlorine demand is not reasonably constant.

6.4.a.6. Eductor. -- Each eductor shall be selected for the point of application with particular attention given to the quantity of chlorine to be added, the maximum injector water flow, the total discharge back pressure, the injector operating pressure, and the size of the chlorine solution line. Gauges for measuring water pressure and vacuum at the inlet and outlet of each eductor shall be provided.

6.4.a.7. Injector/diffuser. -- The chlorine solution injector/diffuser shall be compatible with the point of application to provide a rapid and thorough mix with all the water being treated. The center of a pipeline is the preferred application point.

6.4.b. Contact time and point of application.

6.4.b.1. Due consideration shall be given to the contact time of the chlorine in water with relation to pH, ammonia, taste-producing substances, temperature, bacterial quality, ***disinfection*** byproduct formation potential and other pertinent factors. The ***disinfectant*** shall be applied at a point that provides adequate contact time. All basins used for ***disinfection*** shall be designed to minimize short circuiting. Additional baffling can be added to new or existing basins to minimize short circuiting and increase contact time.

6.4.b.2. At plants treating surface water, provisions shall be made for applying ***disinfectant*** to the raw water, settled water, filtered water, and water entering the distribution system. The contact time as required shall be provided after filtration.

6.4.b.3. As a minimum, at plants treating groundwater, provisions shall be made for applying the ***disinfectant*** to the detention basin inlet and water entering the distribution system.

6.4.b.4. The minimum contact time for surface water sources and ground water sources shall be determined by "CT Calculations." Details for calculating "CT" values are contained in the West Virginia Bureau for Public Health's rule, Public Water Systems, 64CSR3. If primary ***disinfection*** is accomplished using ozone or some other chemical that does not provide a ***residual*** ***disinfectant***, then chlorine shall be added to provide a ***residual*** ***disinfectant*** as provided in subdivision 6.4.c.

6.4.c. ***Residual*** chlorine. -- Minimum total chlorine ***residual*** at all points in a water distribution system shall be two tenths (***0.2***) milligrams per liter. Higher ***residuals*** may be required depending on pH, temperature and other characteristics of the water. Booster chlorination may be required to maintain proper ***residuals***.

6.4.d. Testing equipment. -- Chlorine ***residual*** test equipment recognized in the latest edition of the Standard Methods for the Examination of Water and Wastewater publication, shall be provided and shall be capable of measuring ***residuals*** as contained in the West Virginia Bureau for Public Health's legislative rule, Public Water Systems, 64CSR3. Automatic chlorine ***residual*** recorders shall be provided where the chlorine demand varies appreciably over a short period of time. All surface water treatment plants designed to serve three thousand three hundred (3,300) people or more shall be equipped with recording chlorine analyzers and continuous recorders monitoring water entering the distribution system.

…Omitted 6.4e-6.12…

WEST VIRGINIA CODE OF STATE RULES
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