449.525 Water treatment system: General requirements

1.

The design for the water treatment system of a facility must be: (a) Based on considerations of the source of water for the facility; and (b) Prepared by a person who, as determined by the Bureau, has obtained education, training or experience in the design of dialysis systems.

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2.

If a facility does not obtain water from a public water system, any water used by the facility for medical treatment must be subjected to a bacteriological analysis conducted by the appropriate health authority or by a commercial laboratory that is certified by the Division. An analysis must be conducted pursuant to the provisions of this subsection at least once every 3 months.

3.

The area in which the water treatment system of a facility is located must be of sufficient size to allow for the maintenance, testing and repair of the equipment. If any dialysate is mixed in the area, the area must be of sufficient size to house and

allow for the mixing of the dialysate and for the maintenance, testing and repair of any equipment used to mix the dialysate.

4.

Each component of the water treatment system of a facility must be arranged and maintained in such a manner as to ensure that the amount of bacterial and chemical contaminants in the product water does not exceed the standards for hemodialysis water quality relating to hemodialysis systems and maximum level of chemical contaminants set forth in the American National Standard, Water Treatment Equipment for Hemodialysis Applications, adopted by reference pursuant to the provisions of NAC 449.520.

5.

Each facility shall prepare and comply with a written policy concerning the operation of the water treatment system of the facility. The written policy must include guidelines for the operation of each component of the water treatment system. The facility shall: (a) Ensure that each person who operates those components is aware of the guidelines and operates those components in accordance with those guidelines; and (b) Establish and maintain in the area in which those components are located written procedures describing the actions to be taken if the guidelines are not complied with.

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6.

Except as otherwise provided in this subsection, the water treatment system of a facility must be equipped with reverse osmosis membranes or deionization tanks and not less than two carbon tanks arranged in series. If the source of water for the water treatment system is obtained from a private supply that does not use chlorine or chloramine, the water treatment system must be equipped with reverse osmosis membranes or deionization tanks and not less than one carbon tank.

7.

If the water treatment system of a facility is equipped with reverse osmosis membranes, the membranes must satisfy the requirements relating to reverse osmosis set forth in the American National Standard, Water Treatment Equipment for Hemodialysis Applications, adopted by reference pursuant to the provisions of NAC 449.520.

8.

If the water treatment system of a facility is equipped with a deionization system, the system must satisfy the requirements relating to regenerated or reconstituted devices and deionization set forth in the American National Standard, Water Treatment Equipment for Hemodialysis Applications, adopted by reference pursuant to the provisions of NAC 449.520.

9.

Each carbon tank that is used in the water treatment system of the facility must:
(a) Contain acid-washed 30-mesh or smaller carbon placed in series with a minimum empty bed contact time of 3 minutes for each tank or bank of tanks; and
(b) Include a testing port that is located between the tanks or bank of tanks. The facility shall, at least once each day before providing treatment to any patient of the facility, test water from the port to determine the amount of chlorine and chloramine in the water. The initial test each treatment day for chlorine and

chloramine must be conducted not less than 15 minutes after the water treatment system is started for that day.

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10.

If the results of a test conducted pursuant to the provisions of subsection 9 indicate the presence of more than 0.5 parts per million of chlorine or 0.1 parts per million of chloramine in the water that is obtained from the port between the initial tank and the final tank of the water treatment system, the facility shall replace the initial tank and conduct a test of the water from the final exit of the water treatment system. If the results of that test indicate the presence of chlorine or chloramine in an amount that is greater than the requirements specified in this subsection, the facility shall immediately terminate any dialysis treatment provided to a patient of the facility and notify the medical director of the facility of the results of the test.

11.

If a facility uses a water softener in the water treatment system of the facility, the water softener must have the capacity to treat a sufficient amount of water to supply the facility for the entire treatment day.

12.

If a facility uses a cartridge filter in the water treatment system of the facility, the cartridge filter must be made of material that does not leach surfactants, formaldehyde or other material that was used to manufacture the material.

13.

If a facility uses a cartridge filter housing during disinfectant procedures, the housing must include a mechanism to clear the lower portion of the housing of the disinfecting agents. Each cartridge filter housing must be opaque.

14.

The water treatment system of the facility must be: (a) Continuously monitored during the treatment of a patient of the facility; and (b) Protected by audible and visual alarms that are capable of being seen and heard in the dialysis treatment area if the quality of the water used in the water treatment system falls below the standards established by the facility for the water treatment system or the manufacturer of the water treatment system.

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(b)

Protected by audible and visual alarms that are capable of being seen and heard in the dialysis treatment area if the quality of the water used in the water treatment system falls below the standards established by the facility for the water treatment system or the manufacturer of the water treatment system.

15.

If the deionization tanks of the water treatment system of a facility do not follow a reverse osmosis system, standards for the rate of rejection of the membranes must ensure that the lowest rate accepted will provide product water in compliance with

the maximum level of chemical contaminants set forth in the American National Standard, Water Treatment Equipment for Hemodialysis Applications, adopted by reference pursuant to the provisions of NAC 449.520.

16.

Each facility shall maintain a written record of the operation of the water treatment system for each treatment day. The written record must include the guidelines established by the facility for operating each component of the system and any action taken during that day if the operation of a component was not within the guidelines established by the facility for that component.