WATER QUALITY TESTING CHART

(Updated 2/2005)*

TEST	LIMITS	FREQUENCY	SITE	METHOD	ACTION IF LIMITS EXCEEDED
CHEMICAL CONTAMINANTS & MAXIMUM ALLOWED (MG/L) Aluminum 0.01 — Lead 0.005 Antimony 0.006 — Magnesium 4 (0.3mEQ/L) Arsenic 0.005 — Mercury 0.0002 Barium 0.10 — Nitrate 2.0 Beryllium 0.0004 — Potassium 8 (0.2 mEq/L) Cadmium 0.001 — Selenium 0.09 Calcium 2 (0.1mEQ/L) — Silver 0.005 Chloramines 0.10 — Sodium 70 (3.0 mEq/L) Chromium 0.014 — Sulfate 100.0 Copper 0.10 — Thallium 0.002 Fluoride 0.20 — Zinc 0.10 Free Chlorine 0.50 *(RD62:2001)*		(CHLORINE and CHLORAMINES) or (Total Chlorine) must be tested prior to each shift or if there is no set shifts testing should be performed every 4 hours *(RD52, 6.2.5)*	(CHLORINE AND CHLORAMINE) OR (Total Chlorine) test samples should be drawn between carbon tanks #1 and #2	(Chlorine and Chloramines) or (Total Chlorine) must be tested on site to insure accuracy. DPD Test kits and Dip and read strips are commercially available for this purpose.	Employ appropriate water treatment system (deionization, reverse osmosis, water softener, charcoal filter or necessary combinations) OR Evaluate current system and supplement as necessary.
		REMAINING CHEMICAL CONTAMINANTS			
		After the initial installation of a water treatment system or a change to an existing water treatment system, THEN On an annual basis if RO, DI or the combination of the two is used. *(RD52, 6.2.7)* *(RD52, 6.2.8)*	Obtain samples from the end of a water treatment cascade and at the point most distal in each water distribution loop. *(RD62, 5.2.2)*	Results shall be obtained by using methods referenced in the American Public Health Associations Standard method for the Examination of water and Wastewater. Methods referenced in the U.S. Environmental Protection Agency's Method for the Determination of metal in Environmental Samples and/or other equivalent analytical methods. *(RD62, 5.2.2)*	
BACTERIA Water used for dialysate → *(RD52,4.1.2)* Dialysate → → → *(RD52, 4.3.2.1)* Water used for dialyzer Reprocessing → → *(ANSI/AAMI RD62:2001, 4.2.1)*	**MAXIMUM ALLOWED** <200 CFU/ml Endotoxin level <2 EU/ml <200CFU/ml Endotoxin level <2 EU/ml <200 CFU/ml Endotoxin level <2EU/ml & or 1ngLPS/ml	Weekly for new systems or when changes are made to existing systems until result consistently satisfactory…	Obtain water samples from the first and last outlets of the distribution loop and the outlets supplying Bicarb concentrate mixing tanks. *(RD52, 6.3.3)* Obtain dialysate samples at outflow side of dialyzer or sample port on the inlet Dialysate line. *(RD52, 4.3.2)* Sample minimum 2 machines or enough machines monthly to insure that all machines are tested at least once a year. *(RD52, 7.2.1)*	Obtain total viable counts using spread plate or membrane filter techniques. Use TSA agar. **Do not use blood agar. Calibrated loop shall not be used.** Assay sample within 1 to 2 hours of collection, or, refrigerate immediately at 5C and assay within 24 hrs. Count colonies after 48 hrs or incubation at 35-37C. *(RD52, 7.2.3)* Dip sticks are commercially available which allow readings more specific than powers of 10. Colonies should be counted with a magnifying device.	Action level is 50 CFU/ml AND 1 EU/ml In the event that testing reveals a level of contamination at or above the action level, prompt investigation should be conducted, this may include: reviewing previous results for trends, disinfection of equipment and/or systems, retesting, notification of Medical Director, and evaluating compliance with procedures and techniques. *(RD52, 7.2.1)*
QUALITY CONTROL DEVICE	**AUDIBLE & VISUAL ALARMS** (temperatures compensated)	Annual test of device accuracy			
Deionizer resistivity → →	Resistivity <1 megohm/cm → *(RD52, 6.2.8)*	Continuously → → → (Readings recorded on log *twice* daily)	Resistivity light or meter → →	Record reading on light or meter	Initiate appropriate action
Reverse Osmosis → →	Determines rejection rates → &/or resistivity. Calculated limit based on feedwater analysis & initial rejection characteristics & shall correspond to highest rejection coefficient at which contaminants reach unsafe limits. *(RD52, 6.2.7)*	Daily → → → →	Quality Control light → →	Record ON or OFF	

230 mg/L (10mEq/L) where Na concentration of the concentrate has been reduced to compensate for excess Na in water, if conductivity monitored continuously

Reference to corresponding AAMI standards appears in parenthesis. **RD5** = AAMI Standard for "Hemodialysis Systems" **RD52** = AAMI Standard for "Dialysis" **RD62** = AAMI Standard for "Water Treatment Equipment"

CFU = colony forming units **EU** = endotoxin units **LPS** = lipopolysaccharide

*This chart was originally developed by the Mid-Atlantic Renal Coalition, ESRD Network 5. It has been modified and distributed by the Network of New England, ESRD Network 1, while under CMS Contract #500-03-NW01. It has also been revised and is currently being distributed by the Mid-Atlantic Renal Coalition, ESRD Network 5, under CMS contract # HHSM-500-2006-NW005C.

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