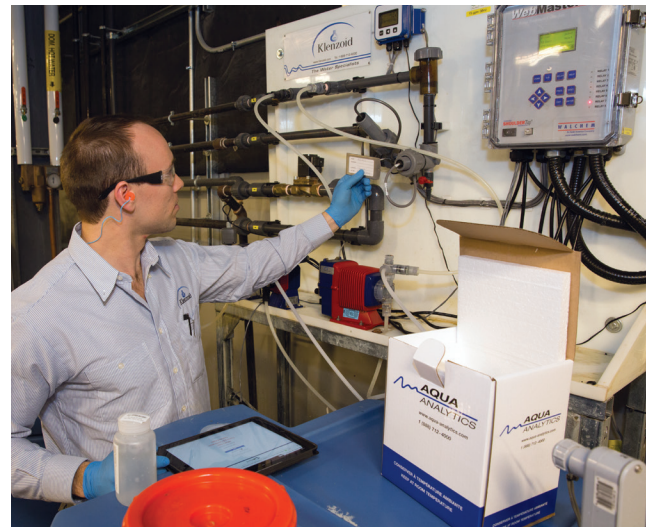
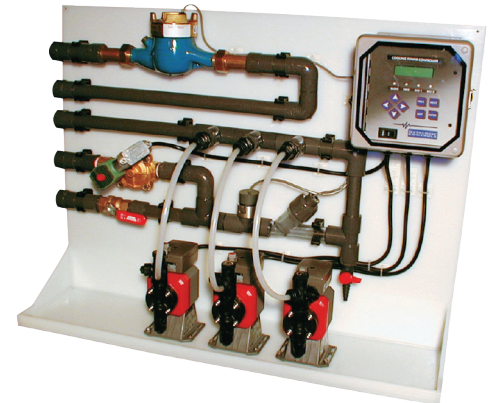


Checklist for Minimizing *Legionella* Risk

Evaporative Cooling Systems

- Operate a **water treatment program** that uses automation for corrosion inhibitor addition and bleed control to manage scale and corrosion.
- Use a **halogen biocide** (chlorine or bromine) in conjunction with a bio-dispersant to minimize bio-film. Biocide addition can be meter-initiated or use ORP control.
- Have your staff **test the water regularly** – at least twice a week.
 - At a minimum, test for total dissolved solids, disinfectant levels, and the total bacterial count.
 - Record and maintain the following data in a dedicated system logbook: test results, make-up water meter readings, and an inventory of all water treatment chemicals.
 - Respond promptly to automation or pumping failures.
 - Maintain chemical inventory to prevent disruptions in the treatment program.
- Employ an **AquaAnalytics Representative** to test the water and review plant records monthly. Follow recommendations for maintenance and system component upgrades to ensure reliability.
- Install and properly maintain adequate **filtration** to remove silt and organics from the system. Sufficient flow should be maintained through the filters to ensure that a minimum of 10 times the system volume is filtered daily.
- Avoid conditions conducive to *Legionella* growth. **Minimize stagnation** as per ASHRAE Guideline 12-2000, and ensure that system dead legs are eliminated or that stagnant sections are flushed periodically. Keep sump lids closed and **shield wet surfaces from sunlight** where possible.



Checklist for Minimizing *Legionella* Risk

Evaporative Cooling Systems



- Conduct regular **physical cleanings** of the cooling tower, fluid cooler or evaporative condenser; visual inspection can be used to determine the frequency. Any accumulation of bio-film or sediment should be removed immediately. Contracting a reputable cooling tower maintenance company for this work is recommended, as good results require specialized equipment.
- Conduct **regular sanitizations**. The industry standard is twice per cooling season but this should be increased during any construction projects that create dust, particularly excavation, as *Legionella* is often released from soil. Please contact your representative for details regarding the recommended procedure for system sanitization.
- Conduct regular maintenance on the mechanical system. **Inspect all major components** for proper operation, particularly the drift eliminators and the wet deck distribution system. Follow the manufacturer's recommendations for bearings, fans and pumps.
- Read the AquaAnalytics ***Legionnaires' Disease: A Guide for Employers and Building Owners*** to ensure you understand your legal obligation. It is an industry best practice to have a documented Water Safety Plan to comply with ASHRAE Standard 188 for cooling systems. Contact your representative for information regarding Water Safety Plans and/or completion of a Risk Assessment if your facility meets the criteria for increased risk. This process will help to determine further actions that may be warranted for the facility.

The purpose of this document is to provide guidelines for best practices for *Legionella* risk management. We make no representation or warranty of the general concepts discussed herein as applied to a specific system. Please refer to the original OEM manuals for additional information. Any persons, corporation, or other entity making use of the general concepts discussed, shall indemnify AquaAnalytics for any claim, loss, or expense arising out of, or related to the information in this document.

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