



Checklist

Water Safety

OPEN  SAFE

Ensuring Water Safety Post COVID-19

As a result of building closings due to COVID-19, there's now an additional risk to consider when reopening dormant buildings with stagnant water systems. Several weeks of zero flow, low flow, and tempered water can result in an increased risk of Legionella, microbiological growth, leeching heavy metals, and increased corrosion within our plumbing systems. Navigate the reopening process for optimal levels of safety and efficiency with the following checklist developed by our water quality experts.

NOTICE: This checklist is provided for your individual use. Watts makes no representations that this checklist accounts for all issues that must be considered in developing a Water Quality Management Plan. Watts expressly disclaims any liability regarding the sufficiency of any Water Quality Management Plan made in conjunction with the use of this checklist.

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| | Complete? | Date Performed | Performed By | Water Management Plan Updated? |
|---|---|----------------|--------------|---|
| Planning Guidelines | | | | |
| Document protection measures for staff and visitors | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Consider working with a water quality expert or consultant | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| From your local water utility, find out if there were any recent water supply disruptions | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| From your local water utility, find out if standard checkpoints have been inspected | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| From your local water utility, find out about the current disinfectant concentration | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Map Out Your Plumbing System | | | | |
| Before the initial flush, sketch out the building water system and identify low-use water outlets | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Map out your flushing regime in a unidirectional process | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Start mapping at the point-of-entry, then peripheral distal points, then point-of-use outlets | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Include the entire recirculating loop, cold and hot water, and all equipment, appliances, and outlets | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Flushing & Cleaning Guidelines | | | | |
| Proper flushing includes multiple steps: an initial flush, sequenced flushing, cleaning of fixtures and equipment, testing and monitoring, and additional flushing as needed | | | | |
| Before flushing, train staff and provide PPE (personal protective equipment) | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Flush your entire piping system from point-of-entry to point-of-use | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| All valves should be in a fully opened position during the entire flushing process | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Include filters and water softeners in the flush. They should run as normal | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Remove all aerators | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |

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Flushing & Cleaning Guidelines (Continued)

Proper flushing includes multiple steps: an initial flush, sequenced flushing, cleaning of fixtures and equipment, testing and monitoring, and additional flushing as needed

Include the following for each flush (initial, sequenced, maintenance)

| | | | | |
|--|---|-----|-------|---|
| Faucets used for drinking water or food preparation | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Drinking fountains | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Ice machines & refrigerators with ice makers | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Showers | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Kitchen sink sprayers | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Water features that generate aerosols (fountains, spas, etc.) | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Safety equipment (emergency eye stations, showers etc.) | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Utility sinks | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Hose taps | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Humidifiers | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Dishwashers | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Existing piping | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Piping and fixtures in place for future installs | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Parts of the water system used by children | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Parts of the water system used by elderly or susceptible people | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Other outlets | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| If you plan to continue using aerators, clean or replace the screens prior to reinstalling | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |

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| Flushing & Cleaning Guidelines (Continued) | | | | |
| Proper flushing includes multiple steps: an initial flush, sequenced flushing, cleaning of fixtures and equipment, testing and monitoring, and additional flushing as needed | | | | |
| Include the following for each flush (initial, sequenced, maintenance) | | | | |
| Adjust valves back to normal operating positions | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Disinfect and sterilize showerheads and faucets | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Consider replacing outlets if vulnerable populations have access | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Once flow returns after this initial flush, drain all hot water tanks | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Maintain temperature and do not turn off the heater | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Prevent bacterial growth via continuous operation | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Schedule ongoing flushes for at least 12 weeks | | | | |
| Open each point-of-use tap at least once per day | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Flush the entire building once per week during ongoing flushing | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| There's no need to drain water storage during ongoing flushing | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Continue to flush cold and hot water systems separately: cold first, hot second | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Monitoring & Testing Guidelines | | | | |
| Before the first flush, start monitoring and testing disinfectant levels and for Legionella | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Continue monitoring and testing throughout the flushing | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Set a schedule for ongoing monitoring and testing | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| After the initial flush | | | | |
| After the tap is flushed, measure disinfectant levels at the point-of-entry | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Measure disinfectant levels in the cold water of the most distant tap of each zone | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Compare point-of-entry concentration to the distal tap concentration | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |

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| Monitoring & Testing Guidelines (Continued) | | | | |
| Legionella testing | | | | |
| Collaborate with a certified Legionella testing laboratory and follow their testing protocol | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Collect samples in multiple locations from point-of-entry to point-of-use | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Collect samples 48 hours after final flushing | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| If results are unacceptable | | | | |
| Set strict access controls and take proper safety precautions | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Conduct a hyper-chlorination shock and/or a thermal shock | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Flush the cold water system from point-of-entry to point-of-use, including all fixtures | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| The water should reach a CT of no less than 3,000 mg-min/L | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| After completing hyper-chlorination, conduct an additional thermal flushing | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| If results are acceptable after thermal flushing regime | | | | |
| Consider a hyper-chlorination shock, especially in buildings that serve high risk populations | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Creating & Adjusting a Water Management Plan | | | | |
| If you have a water management plan review it and follow its guidance | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Adjust your water management plan if the reopening process finds it necessary | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| If you do not have a water management plan, create one | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Document the re-opening process | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Record all monitoring and testing practices including the frequency, locations, and the results | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |

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| Maintenance & Recommissioning Guidelines | | | | |
| Recommission, inspect, and disinfect all plumbing and water quality equipment | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Follow the RID checklist | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| General Guidelines for Opening Within 1 Month | | | | |
| Conduct low usage weekly maintenance | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Conduct weekly visual inspections | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Prevent seizure and failure by operating moving parts such as pumps for at least of 10 minutes/week | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Reduce bacteria growth by increasing water temperature to 140°F for at least 1 hour/week | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| If equipment has a thermal sterilization cycle, use it per manufacturer recommendations | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Maintain normal disinfectant levels | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Flush outlets on a weekly basis | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Ensure all storage maintains proper disinfectant levels | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Document all your activity, monitoring, and testing | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| If certain systems will be closed, drain and dry them if possible | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| General Guidelines During Closure (If Water Will Not Be Heated Within the Plumbing System) | | | | |
| Close the building and do not drain the system | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Turn off storage tanks, drain, turn off the water supply | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Consider conducting thermal flushing and / or hyperchlorination prior to shutdown | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |

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| General Guidelines During Low Use Conditions | | | | |
| Flush cold water systems on a regular schedule to maintain temperature and disinfectant. Free chlorine residual should be at or above .2 mg/L | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Monitor and maintain the hot water system at distal outlets | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Monitor and record supply water temperature and disinfectant concentration | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Restrict access to any unused portions of the building | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Document all monitoring, testing, and maintenance | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 24 Hours Before Reopening | | | | |
| Conduct a round of checks | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Bring the hot water system back up to 140°F | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Open all outlets and flush until they reach a minimum of 131°F | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| After flushing, conduct a final round of sampling to ensure there is no contamination | <input type="checkbox"/> Yes <input type="checkbox"/> No | / / | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |