Information Sheet

Drinking Water Flushing Guidance for Restoring Water Quality in Buildings With Low or No Use**

Overview

The **New Jersey Department of Environmental Protection** (NJDEP) is prompting building owners and businesses to take appropriate steps to prevent drinking water quality problems prior to re-entry into buildings after an emergency or other unforeseen challenge that resulted in low or no use. The internal plumbing system within individual buildings that serve drinking water to the public need to be restarted properly before consumption. Stagnant water can enable bacterial and/or pathogen growth and can cause unwanted contaminants (e.g., lead) to leach from pipe materials, all having the potential to cause significant health impacts.

NJDEP recommends "flushing" premise plumbing by opening taps or faucets and systematically letting the water run to remove water that has been standing in the interior pipes and/or outlets.

Best practices including flushing may vary for each type of establishment, its configuration, plumbing components, number of outlets and length of water lines. NJDEP recommends hiring a licensed plumber or operator when necessary for assistance in determining the volume of water associated with your plumbing components (e.g., lengths and diameters of piping) and the rate of water flow from a tap or faucet in determining appropriate flushing times. General guidelines are outlined below.

For Buildings and Businesses: Following an Extended Period of Low or No Use

(e.g., schools, daycares, restaurants, casinos, golf clubs, churches, office buildings, gas stations, campgrounds, parks, golf clubs, bars, cafes, and swim clubs)

The NJDEP recommends consulting with your building's public water supplier prior to flushing.

- Inspect your plumping/pipes (distribution system) for broken pipes, corrosion, or leaks.
- Remove or bypass devices like point-of-entry treatment units prior to flushing. This will limit the amount of sediment that could have been trapped during flushing and could be a potential source of contamination.

Questions? Call TWW's Engineering Department at (609) 989-3822.

Source: New Jersey Department of Environmental Protection (NJDEP)

- Flush hot and cold water through all points of use (e.g., showers, sink faucets). Follow flushing recommendations below. Flushing may need to occur in segments (e.g., floors or individual rooms) due to facility size and water pressure. The purpose of flushing is to replace all water inside the piping (distribution system) with fresh water.

- Flush all kitchen lines, including sinks and appliances that pull water directly from water taps.

- Run enough water through all outlets, typical durations in existing protocols range from 10 to more than 30 minutes for each outlet (duration varies based on outlet velocity and building size).

- Organize flushing to maximize the flow of water (e.g. opening all outlets simultaneously to flush the service line and then flushing outlets individually starting near where the water enters the structure).

- A building system wide flushing will sufficiently remove the water that has been left stagnant for an unusually extended period, maximize disinfectant residual and remove contaminants (i.e. lead) that have leached into stagnant water. Large buildings require initial and follow-up flushes to return the system to normal conditions

- **Cold Water Faucets:** Locate the faucet furthest away from the service line on each wing and floor of the building, open the faucets wide, and let the water run. Open valves at all drinking water fountains without refrigeration units and let the water run for roughly 30 seconds to one minute, or until cold. Let the water run on all refrigerated water fountains for 15 minutes. Open all kitchen faucets (and other faucets where water will be used for drinking and/or food preparation) and let the water run for 30 seconds to one minute, or until cold.

- **Hot Water Faucets:** To clear hot-water pipes and water heaters of stagnant water, turn on faucets and flush until maximum temperature is reached (e.g., for at least 15 minutes for a typical household 40-gallon hot-water tank and 30 minutes for an 80- gallon hot water tank or larger).

- **Dishwashers:** After flushing hot water pipes and water heaters, run the dishwasher empty one time.

- **Humidifiers:** Discard any water in humidifiers, continuous positive airway pressure (CPAP) machines, and oral, medical, or health-care devices. Rinse the device with sterile water. Refer to the manufacturer's instructions for further cleaning and disinfection procedures.

- **Food and baby formula:** Discard baby formula and other foods prepared with water prior to the shutdown.

- **Refrigerator water-dispensing machine:** Flush water dispensing machine for at least five minutes before using it for household purposes. For more information, including whether filters should be replaced, refer to manufacturer specifications.

- **Ice machines:** Empty automatic ice dispensers of ice made prior to shut down and run through a 24-hour cycle. Discard this ice to assure purging of the icemaker's water supply line. Ice machines, like other water-using devices, may require additional cleaning steps in addition to flushing. Refer to the manufacturer's instructions for further cleaning and disinfection procedures

- Replace all point-of-use filters, including the filter in refrigerators. Some types of water treatment devices may need to be disinfected or replaced before being used. Check with the manufacturer for details.

- Remove all aerators and showerheads prior to flushing and clean all aerators and showerheads prior to reinstalling, if applicable.

Consider collecting water quality samples.

- **For small buildings.** In most cases, systematic flushing of plumbing, faucets or taps with water that has normal amounts of disinfectant (the chlorine already in the municipal or main water supply) is sufficient.

- **For large buildings or buildings with sensitive populations** (e.g., high-rises, apartment complexes, hospitals, assisted care facilities, nursing homes).If there is concern that the building may be susceptible to contamination from pathogens like Legionella, the facility should follow the **U.S. CDC Guidance for Building Water Systems** to help minimize the risk of Legionnaires' disease and other diseases associated with opportunistic premise plumbing pathogens. The guidance recommends an eight-step process before reopening a building, which includes flushing the water system, sampling water quality parameters (e.g., pH, temperature and disinfectants) and maintaining the water system. To determine if your building is at increased risk for Legionella growth and spread see CDC's Worksheet to Identify Buildings at Increased

- **Risk for Legionella Growth and Spread** **https://www.cdc.gov/legionella/wmp/toolkit/wmp-risk.html**. Most healthcare buildings or facilities (e.g., hospitals and nursing homes) follow flushing procedures outlined in their Water Management Plan (WMP). These more complex building water systems serve sensitive populations and are required by the Centers for Medicare & Medicaid Services (CMS) and the Centers for Disease Control and Prevention (CDC) to have a WMP that is effective in limiting Legionella and other opportunistic waterborne pathogens of premise plumbing from growing and spreading in their facility.

Additional Guidance for School Buildings

NJDEP recommends following the thorough instructions on how to conduct system wide flushing provided in the Lead Testing in School's Sampling Plan Attachment H (iii) available at **https://www.state.nj.us/dep/watersupply/plan.htm**. For additional guidance on flushing, review the Overview Lead in Drinking Water at School Facilities document at **https://www.state.nj.us/dep/watersupply/pdf/techguide.pdf**.

Buildings Classified as Public Water Systems (PWS): Following an Extended Period of Low or No Use

Buildings that have their own water supply and/or treat their supply are regulated under the **Safe Drinking Water Act** (SDWA) as public water systems. These buildings may include schools, restaurants, gas stations, churches, recreational facilities, among others, that have their own well(s) or water supply system. For more on the definition of a public water system see **https://www.epa.gov/dwreginfo/information-about-public-water-systems**.

In addition to the general guidelines above, buildings classified as public water systems are required to:

- Inspect each well – fix any well seals or damage. Verify there are no openings that would allow in debris or contamination. Check for flooding, vandalism.

- Ensure that all treatment is functioning properly. Evaluate and maintain treatment. Perform disinfectant or UV maintenance. Change filters according to manufacturer's specifications.

- Inspect any storage and pressure tanks – perform any repairs needed.

- Follow existing procedures for preventative maintenance. Buildings classified as public water systems having licensed operators shall follow existing procedures as outlined in your water system's O&M Manual as necessary to reduce stagnant water and sediment build-up in areas of the distribution system. As per N.J.A.C. 7:10A-1.12(a)1, the O&M manual contains procedures that shall be designed to maximize preventive maintenance and operation techniques, to ensure that the system operates in a manner that satisfies all laws and license conditions. This includes procedures that contain a schedule for routine inspections and preventative maintenance, such as a flushing program.

NJDEP strongly encourages public water systems to collect Total Coliform samples prior to restarting the system.

Buildings that are Classified as Seasonal Water Systems (NCWS). Seasonal water systems must perform sampling as part of a State-approved startup procedure and provide certification to the NJDEP that they have met that requirement. Certification must be completed and sent to the NJDEP before serving water to the public. Refer to NJDEP's Revised Total Coliform Fact Sheet **https://www.nj.gov/dep/watersupply/pdf/seasonal-system.pdf.**

Additional Resources

The **U.S. Centers for Disease Control and Prevention** (CDC) issued guidance to ensure the safety of building water systems and end-use devices after a prolonged shutdown found here: U.S. CDC Guidance for Building Water Systems at **https://www.cdc.gov/coronavirus/2019-ncov/php/building-water-system.html?_ga=2.13574007.1396125792.1586355728-674436242.1565382830**

Building owners and operators should implement a Water Management Plan (WMP) that follows industry recommendations, such as ASHRAE 188, to continually maintain water quality. Guidance to help with this process is available from the CDC: Water Management Program Toolkit: **https://www.cdc.gov/legionella/wmp/toolkit/index.html**.

The **U.S. Environmental Protection Agency** posted information that public water systems, building owners, building managers and businesses should use to minimize water stagnation during extended closures and to address building water quality. For more information, please visit: **https://www.epa.gov/coronavirus/information-maintaining-or-restoring-water-quality-buildings-low-or-no-use**

The **New Jersey Department of Health** issued guidance for Maintaining and Reopening Building Water Systems Impacted by Prolonged Shutdown or Reduced Operation: Minimizing Legionella and Opportunistic Bacteria Growth found here: **www.trentonwaterworks.org/legionella.**

Questions?

For specific questions about your Public Water System contact **NJDEP's Division of Water Supply & Geoscience** at **watersupply@dep.nj.gov** using Flushing Guidance in the subject line.