

# Seasonal Water System Shutdown Guidance

Proper maintenance increases the longevity of a water system and reduces water quality problems that can lead to dissatisfied customers and regulatory issues. Completing shutdown procedures for seasonal water systems, or those systems that depressurize portions of the distribution, will help you reduce contamination risk and minimize work and time required when you begin operations next season. Shutdown is an opportune time for a thorough examination of the system's physical components. Repairs can be accomplished without being an imposition on your customers. Listed below are recommended steps for seasonal water system shutdown. Contact your sanitarian or engineer if you have questions about seasonal shutdown procedures.

## System Inspection

- Review any system maintenance notes you have made over the summer;
- Inspect the system looking for leaks or damage to wellheads, treatment equipment, storage tanks, faucets, toilets, and the distribution lines;
- Ensure wellhead protection is in place for the winter. Place posts around the well to protect the wellhead from snowplows and vehicles when covered with snow;
- Remove any hoses and backflow prevention devices that are prone to freezing;
- Backwash any filters as recommended before shutting them down;
- Be sure to protect equipment that may be damaged by freezing by properly draining or storing in a heated space. Examples include pumps, pressure gauges, membrane filters, and sand filters in unheated areas; and
- For additional inspection information, refer to the [Start-up Procedure Checklist](https://www.health.state.mn.us/communities/environment/water/docs/ncom/checklist.pdf) (<https://www.health.state.mn.us/communities/environment/water/docs/ncom/checklist.pdf>).

## De-pressurizing

- For most systems, turn off power to all pumps, treatment equipment, water heaters, etc. however, the protection of equipment or structures may in some instances dictate that the power is left on;
- Flush sediment from water storage tanks and water heaters if needed;
- Clean and disinfect non-pressurized water storage tanks. For more information, refer to: [Cleaning and Disinfecting Non-Pressurized Storage Tanks](https://www.health.state.mn.us/communities/environment/water/docs/ncom/stortankdisinfect.pdf) (<https://www.health.state.mn.us/communities/environment/water/docs/ncom/stortankdisinfect.pdf>);
- Drain the distribution system and equipment completely;

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- Pay particular attention to the high point and be sure to drain to the lowest point in the system;
- Be sure all taps and in-line valves are open;
- When blowing out the lines use an oil-less air compressor;
  - Automotive type anti-freeze (ethylene glycol) is toxic and is not permitted; and
  - The use of RV type, low-toxicity antifreeze (propylene glycol) in the drinking water system is not recommended.

### System protection

- Seal any openings in the piping and components, and leave piping and components in a sanitary condition when the system shuts down for the season;
- Be sure that the well and distribution system are not left vulnerable to the entrance of contamination;
  - If it is necessary to leave any portions of the system open, use mesh to cover the opening;
  - Any drainage points left open especially in pits that are susceptible to inundation require special attention such as disinfection and flushing upon restarting the system; and
- If using a surface water source, be sure your intake line will be protected from ice damage if it is not buried at the shoreline. Cover any open ends in piping if disconnected.

Minnesota Department of Health  
Drinking Water Protection Section  
PO Box 64975  
St. Paul, MN 55164-0975  
651-201-4700

[health.noncommunitycompliance@state.mn.us](mailto:health.noncommunitycompliance@state.mn.us)  
[www.health.state.mn.us](http://www.health.state.mn.us)

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651-201-4700