



CITY OF YELLOWKNIFE

Water Line Freeze Protection

Helpful Tips

City System Details

The City of Yellowknife has a unique and complex water distribution system. Due to severe cold weather temperatures the City tempers and constantly circulates potable drinking water. This circulation allows our infrastructure to be placed underground with minimal risk of freezing.

Most individual water services are comprised of dual, insulated, copper lines, as shown in Figure 1 and 2. In between these lines is a small circulation (circ) pump that provides constant flow in both copper pipes. Moving water is less likely to freeze than still water, thus providing freeze protection.

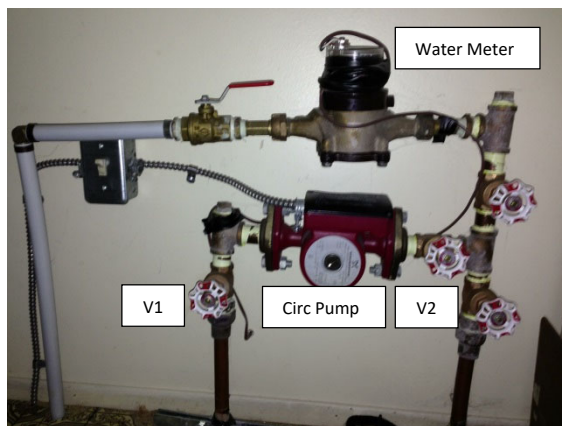


Figure 1: Example Dual Copper Line Water Service

All connections before the water meter must be type “L” copper.

The average life of a circ pump in Yellowknife is 5-8 years, after which time it should be replaced. The approximate cost of the “Grundfos UP15-29SF” circ pump is \$200.00 and can be found at various retailers in the city. A new energy efficient “Grundfos Alpha 2 – 15-55SF” ECM pump is also available.

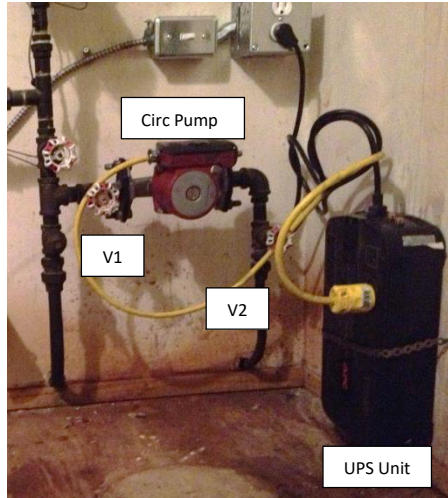
“Freeze Protection is ultimately a homeowner responsibility.”

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Residents with service in poor repair may qualify for the City's Service Connection Failure Assistance Program (SCFAP).



For more information on SCFAP, and to find out if your systems qualifies for it, please call 920-5600 for more information. Always contact Public Works before alteration of any water and sewer service.

Figure 2: Example Dual Copper Line Water Service with UPS

Power Outage Procedure

2-LINE SYSTEM

Locate the circ pump installation, which should look similar to the figures shown. The two lines that are attached to the circ pump should have two gate valves. In Figure 1, they are marked as V1 and V2.

Proceed with the following steps:

With a tap open somewhere in your home, shut off V1 and let the water run for 2-3 minutes. Clockwise = closed, Counterclockwise = open

1. Open V1 and close V2, and run water for 2-3 minutes.
2. When finished, ensure both V1 and V2 are open in case the power is restored.
3. Repeat this procedure every 15-20 minutes until power is restored. Use a different fixture each time, preferably one that is susceptible to freezing.
4. If power is restored, ensure that all valves are open and that the circ pump is running.



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This procedure will vary depending on the power outage and the outside temperature. This procedure can help you to keep both lines open during a power outage if on the dual line system. On a single line system you can only open a tap at a time and repeat.

Each building is different; there are no guarantees of freeze protection during a power outage.

UPS Installation

An uninterruptible power supply (UPS) unit may be installed on the dual-line water system to maintain power to the circ pump during times of a power outage.

These units can be purchased from electronics retailers in the city. The price can range from \$150 - \$1000. They are equipped with deep cell batteries that can be replaced. UPS systems are used by many people to maintain a functioning computer system during a loss of electricity.

A \$150 UPS unit can power a circ pump for approximately one hour. The higher price will extend the time that a UPS unit will maintain power.

A qualified electrician may be required to provide an approved power receptacle into which the UPS would be plugged into and then wired to the circ pump. A little upfront cost could save homeowners a larger expense of a water break.

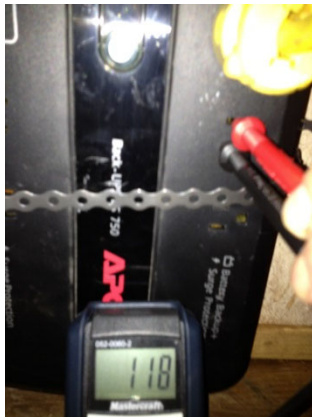


Figure 3: Example of a UPS unit

For More Information:

[Emergency Preparedness](#)

Contact with the City of Yellowknife at **867.920.5600** or communications@yellowknife.ca