CHLORINE IN DRINKING WATER

Provided by The Town of Amherst

How Governments Ensure Protection of Your Water Supply

Health Canada publishes the *Guidelines for Canadian Drinking Water Quality* developed through consultation with the Federal Provincial Drinking Water Sub-Committee. The Provincial Governments publish regulations that govern the production of safe drinking water. Among the Nova Scotia regulations is a requirement that all municipal water supplies must be disinfected and that a minimum disinfection residual of 0.2mg/l must be maintained throughout the system at all times.

How the Amherst Water Utility Meets Federal/Provincial Requirements

The Amherst Water Utility produces drinking water that continually meets or exceeds all the parameters of the *Guidelines for Canadian Drinking Water Quality*. We monitor the Amherst water supply for microbiological parameters and chlorine residual three times per week.

What is Chlorine?

Chlorine is a disinfectant added to drinking water to reduce/eliminate microorganisms, such as bacteria and viruses, and must be present in water samples. The addition of chlorine to our drinking water has greatly reduced the risk of waterborne diseases.

Background

For more than a century, the safety of Canadian drinking water supplies has been greatly improved by the addition of chlorine. To this day, chlorine remains the most commonly used drinking water disinfectant, and the disinfectant for which we have the most scientific information.

Disinfection By-Products

In communities that have surface water supplies chlorine reacts with the organic matter naturally present in water, such as decaying leaves, and forms a group of chemicals known as disinfection by-products, the most common of which are trihalomethanes (THMs). Since the Amherst supply is from a groundwater source we do not have any disinfection by-products in our water.

The Benefits of Chlorine

Although other disinfectants are available, chlorine remains the choice of water treatment experts. Chlorine is effective against virtually all microorganisms and small amounts of the chemical remain in the water as it travels in the distribution system from the treatment plant to the consumer's tap. This chlorine residual ensures that microorganisms cannot recontaminate the water after it leaves the treatment plant.

Alternatives to Chlorination

A number of cities use ozone to disinfect their water, although ozone is a very effective disinfectant, it breaks down quickly and cannot be used to maintain disinfection in the distribution system. Small amounts of chlorine or other disinfectants still must be added. Chloramines are weaker disinfectants than chlorine, but are very effective in the distribution system. Chlorine dioxide can be used in the treatment plant, but it is not very effective in the distribution system.

What Can I Do if Chlorine Odors and Tastes Bother Me?

Keep an open jug of water in your fridge or on the counter – the chlorine residual in the water will dissipate harmlessly into the air. Alternatively, there are a number of point-of-use carbon filters (for end-of-tap installation or on pour-through filters) that can be purchased in almost any hardware store. These will remove the chlorine by absorbing it into the carbon filter. The use of these is recommended only if the filter has been certified by NSF International (look for the certification mark on the package) and so long as the manufacturers' instructions regarding the periodic replacement of the filter are followed. Failure to replace the filter as recommended can result in the development of microbial risks in the filters themselves.