

Project Update: Water Conditioning Project



Why are we adjusting the pH of our water source?

In March 2016, the Village undertook a water conditioning assessment, sampling drinking water from 20 Pemberton homes as a first step in determining how to improve the slightly corrosive nature of our water. The results indicated that the low pH and alkalinity of Pemberton's water was, in some cases, interacting with household fittings and fixtures resulting in elevated lead concentrations.

Working with engineers, the Village determined that the addition of soda ash to our source water would address the low pH and alkalinity. The control of pH and alkalinity is one of the most effective ways to minimize leaching from building plumbing systems and components.

The Canadian Drinking Water Guidelines consider pH as an 'Aesthetic Objective'. An 'Aesthetic Objective' is established for parameters that may impair the taste, smell, or colour of water but does not cause adverse health effects.



What are the project objectives?

To adjust the pH and alkalinity to make the water less corrosive while meeting the Aesthetic Objectives of the Canadian Drinking Water Guidelines.



How does the system work?

Soda ash (sodium carbonate) raises the pH of water when injected into a water system. Injection systems are a point-of-entry system.



What is the Current Status?

During the months of June through September, the Village began testing the Soda Ash dosing equipment. Calibration of the automated equipment was carried out and calculations of the concentration of the soda ash solution were made. Once the concentration of the solution was determined the dosing equipment was adjusted to accommodate a variety of target pH ranges. Several technical issues relating to the automated delivery of the soda ash were discovered early on and warranty work was carried out on a pressure switch, a dosing manifold and the soda ash auger. During this period (June through September), soda ash was added to the water at a conservative rate while the warranty/design issues were being resolved and subsequently a baseline pH and Alkalinity was developed.

During the week of October 9th all warranty/design issues were resolved and the Village entered into the optimization phase where a pH of ~7 and an Alkalinity of 30 – 70mg/L CaCO₃ (Calcium Carbonate) is the target. The Village will be collecting daily measurements at the Waste Water Treatment Plant, and weekly measurements within the distribution system for the next several months. During this period, water quality parameters (lead, pH, alkalinity, copper and iron) will also be measured to assess the impact of the target set point.

If required, an additional optimization phase of testing impacts of pH values above 7 can be added, however, early indications are that Pemberton's water reacts favourably to the additional of soda ash.

The Village wishes to thank residents and businesses for their patience during the commissioning of the Water Conditioning System.

Questions?

Call the Village Office at 604.894.6135 or
email us at admin@pemberton.ca.

