



Position Paper – Presence of Lead in Drinking Water

Introduction

Recent publicized incidents of lead contamination of drinking water at several locations in the United States and a recent CBC investigation into lead in drinking water in the Fraser Valley have highlighted the fact that lead can be an unseen contaminant. This position paper is written for SPWD to be aware of the issues involving lead in drinking water and for determining whether it is a significant risk to SPWD that requires some measure of control.

Canadian Drinking Water Quality Guidelines

Maximum Allowable Concentration: 0.005 mg/L (5 ppb) ALARA – as low as reasonably possible

Common sources of parameter in water: Leaching from plumbing (lead service lines, lead solder and brass fittings)

Health basis of MAC: Reduced intelligence in children measured as decreases in IQ is the most sensitive and well established health effect of lead exposure. There is no known safe exposure level to lead.

Other: Possible effects include behavioral effects in children. Reduced cognition, increased blood pressure, and renal dysfunction in adults are also possible; classified as probably carcinogenic to humans

Applying the Guidelines: Lead levels should be kept as low as reasonably achievable. Sampling should be done at the tap to reflect average exposure. The most significant contribution of lead in drinking water is generally from the lead service line that supplies drinking water to the home. The best approach to minimize exposure to lead from drinking water is to remove the full lead service line. Drinking water treatment devices are also an effective option.

SPWD Findings

SPWD tests for lead as part of the annual metals scan conducted each August. This annual testing has indicated that small quantities of lead can be present from time to time, but still much less than the MAC of 5 µg/L have been present from time to time.

The RO plant is designed to be very effective in reducing natural lead levels (if any) in the raw water at Well 1. The Greensand oxidation filtration at Well 4 appears to be effective in reducing natural lead levels. It is unknown whether the Pyrolox oxidation filtration at Well 3 is effective in reducing natural lead.

Impacts for SPWD Consideration

Most lead in drinking water comes from plumbing containing lead. There is no lead tubing used in SPWD infrastructure. And given the age of individual residences, there is very little likelihood of lead tubing being used.

Scott Point Waterworks District



The likely source of any lead would be the lead solder used in for copper tubing installation, leaching from older brass fittings which historically contained up to 6% lead, or corrosion of galvanized pipe and fittings.

Reconstruction of the treatment at Wells 1 and 4 had eliminated most metal fittings and those that remain are specified as No Lead Brass to the NSF 61 standard. There are still some old brass meters and fittings at Well 3. On the distribution system, the 12 isolation valves on the Main and the outside valves associated with the Reservoir at Well 1 are probably cast to the old brass standard. With few exceptions, the service connections valves (corporation stop and curb stop), meters and back-flow preventers are made of the old brass standard.

Individual residences are also susceptible to leaching brass. Some older residences

SPWD Actions

During Project Blend upgrades, fittings containing elevated amounts of lead at Wells 1 and 4 were replaced with no lead alternatives. Plans are being made to reconfigure and/upgrade the water treatment plant at Well 3 in 2020 and work will remove any older brass fittings.

Project Blend also had an impact on the chemistry of treated water increasing the pH and lowering the corrosion potential and likelihood of lead leaching from old brass fittings.

In the SPWD 10-Year Plan, there is provision to replace a number of service lines and meter sets each year, so that all will be replaced over the next few years with new equipment to the NSF 61 for no lead brass.

SPWD will continue to actively monitor raw and treated water for the presence of lead.

Possible Actions by Residents

- Residents should evaluate their plumbing systems inside the house and contemplate the replacement of older brass fittings and soldered copper joints
- It is possible to reduce lead exposure risk with the installation of household filtration - whole house filtration, under the counter filtration, filter pitchers are all available. Any filtration should be in compliance with Standard NSF 61 and specifically state that it will filter for lead. Filters should be changed in accordance with manufacturers' recommendations.