Frequently asked questions – Cromwell water supply upgrade

Cromwell is experiencing a growing population, employment growth and more people visiting the area every year. This growth, with its associated increased requirements for services and infrastructure such as drinking water, is expected to continue for the foreseeable future and we need to ensure reliable water sources are available and that those resources are managed effectively.

The water upgrade programme being completed by Central Otago District Council (CODC) will provide increased capacity to meet the growth needs of the rapidly growing population in Cromwell and surrounding areas. It is an integral part of the Council's water infrastructure programme, aimed at meeting drinking water quality standards and allowing for growth in this region.

1. Will the project mean Cromwell's water tastes differently than it does now?

Cromwell's water will not taste or feel much differently to what it does now as a result of the project. The source water will remain the same and will not be treated to be 'softened.' There may be a change due to different treatment options, but we do not believe that any changes, if there are any, will be significant.

2. What is the difference between 'hard water' and 'soft water'?

Drinking water needs to be safe[1] and look, taste and smell acceptable too. Aesthetic Values for drinking water specify or provide minimum or maximum values for substances and other characteristics that relate to the aesthetic acceptability of drinking water.[2]

When water falls as rain, it is 'soft' and free of minerals. It picks up minerals as it passes through rock, sand and soil, so most water drawn from an aquifer will be 'hard'. Hard water is high in mineral salts, especially calcium and magnesium.

3. What causes water hardness?

Water hardness happens because of certain minerals in the water. The main ones are calcium and magnesium, which come from rocks like limestone and chalk. These minerals get into the water naturally from the ground.

4. If this is an 'upgrade' project, why isn't CODC upgrading the water to 'soft' water?

Cromwell's existing bores provide a reliable supply with generally good quality water. Finding a new supply with the same qualities is not feasible. Although softening the water at the treatment plant is possible, along with the initial expenses such as the cost of the softener and installation, there are also ongoing high operational and maintenance costs.

5. Can I do anything to make my water softer?

There are options if you want to soften water, for example, home water softening units that are engineered to extract minerals like calcium and silica. There are many different systems available in

[1] https://www.taumataarowai.govt.nz/assets/Uploads/Rules-and-standards/Drinking-Water-Quality-Assurance-Rules-2022-Released-25-July-2022.pdf

[2] https://www.taumataarowai.govt.nz/for-water-suppliers/new-compliance-rules-and-standards/

New Zealand from a variety of suppliers Talk to your local plumber or hardware store about filtration options and systems that may suit your needs and preferences.

6. What is protozoa?

Protozoa is a class of parasitic microorganisms commonly found in surface waterways in New Zealand. Exposure to protozoa such as Giardia and Cryptosporidium can cause illnesses such as acute gastrointestinal illness. Exposure generally occurs from consuming food or water contaminated with protozoan oocysts originating from animal or human faecal matter. Giardia and Cryptosporidium are endemic in livestock, birds and domestic and feral animals in New Zealand and diseases associated with these organisms are globally recognised as among the most common waterborne diseases.

Protozoa present a particularly difficult risk for water supplies because they can be infectious even at low levels of contamination.

7. Will the new treatment plant treat for protozoa?

The source water for Cromwell is drawn through bores from the Cromwell Terrace Aquifer. The bores are on the Clutha Mata-au arm of the lake, as the bores are less than 30m deep, they are not given secure aquifer status (which has a more consistent quality than a surface water source) and the water from them requires treatment for protozoa.

Surface water sources require more treatment processes to treat protozoa than groundwater sources because surface water has more risks associated with it, and typically has less consistent quality than ground water. The more treatment processes, and the higher the level of filtration required, the higher the cost it is to construct and operate.

8. Why hasn't Cromwell's water been treated for protozoa in the past?

The current treatment plant has not treated Cromwell's water for protozoa because it was constructed before a strong focus on the risks of protozoa was recognised due to the potential for illness. A large portion of the costs of upgrading work on New Zealand's water treatment plants since the mid-1990s and early 2000s has been in response to the addition of water treatment protozoal requirements.

9. Will the new treatment plant use UV and chlorination?

Yes, the new treatment plan will use UV and chlorination. This is different to other treatment plants, for example the Lake Dunstan Water Supply Treatment Plant which is a membrane and chlorination treatment plant. The UV will treat both protozoa and bacteria and the chlorination will ensure continued bacteriological treatment in the network.

10. What are the rules around treating water in New Zealand?

The level of treatment that is required to meet the New Zealand Drinking Water Quality Assurance Rules is dependent on the quality and consistency of the source water.

There are different requirements in the New Zealand Drinking Water Quality Assurance Rules for water supplies that serve more than 500 people, 100 to 500 people and less than 100 people.