



BUSSELTON WATER

Chlorine FAQ's

Why is chlorine added to our drinking water?

Chlorine is the only safe way to protect Busselton's water supply as the pipeline network expands to meet the needs of our growing city.

It provides 24/7 protection against contamination of our water by dangerous bacteria, viruses and some protozoa, which can spread infection and disease.

Independent testing shows that our warm water and long pipeline is susceptible to contamination by *Naegleria fowleri*, which can prove fatal in rare cases.

Testing has detected the persistent presence of *Naegleria lovaniensis*, which it indicates that the water is suitable for *Naegleria fowleri*, which causes the fatal waterborne disease, primary amoebic meningoencephalitis (PAM).

The Department of Health has strict guidelines for water supplies that have detected *Naegleria* and strongly supports the chlorination of Busselton's water supply.

Why do we need chlorine now when we haven't in the past?

There are a number of factors. The key change is the growth of Busselton. Historically, Busselton occupied a thin coastal strip, which water travelled through very short mains. The water was used very soon after ultraviolet (UV) treatment, making it a viable option for disinfecting the community's water.

However, Busselton is now a city and our pipeline has expanded to service new homes and new suburbs and water can now remain in pipelines for many hours or days, increasing the risk of microbiological contamination.

No matter how safe our water is when it is drawn from the ground, it is exposed to the risk of contamination in the pipeline – small breaks, backflow or illegal connections with private bores can allow dangerous microbiological organisms into the system.

Chlorine is the only safe way of protecting our water all the way to the tap. It provides 24/7 protection.

What are the risks of contamination?

Busselton Water delivers water to more than 11,000 properties and more than 26,000 customers – contaminated water can quickly cause major health problems, even death. Microbiological contamination of drinking water has been responsible for deaths and mass illness in developed countries, including the United States, Canada, England Japan, Sweden and Norway. In some cases, thousands have fallen ill, many requiring hospitalisation, and some have died.

We're taking every possible step to make sure the water we deliver is safe.



How much chlorine is in my water?

Busselton Water is adding less than 1 milligram per litre – that's less than one part chlorine to one million parts water. It's a fraction of the maximum limits set by the National Medical research and Health Council (NMHRC) in the Australian Drinking Water Guidelines (AWDG). Chlorine dissipates once it travels through the pipeline - so it's even less by the time it reaches your tap.

The NMRHC and the World Health Organisation both recommend a maximum of 5 milligrams of chlorine per litre of water (5mg/L).

We have a stringent testing schedule to monitor chlorine levels.

Why does the chlorine level differ from area to area?

Chlorine dissipates as it travels through the pipeline network, so it varies depending on distance from our treatment plants. Busselton Water is targeting a minimum chlorine level of 0.5mg/L to ensure the water is safe.

Why did Busselton Water replace the Ultra Violet disinfection system?

The ultraviolet disinfection system that served Busselton well in the past could not cope with the needs of a growing city. UV could only purify the water as it left filtration plants – but couldn't protect the water against contamination once it entered the pipelines. This was highlighted by the detection of Naegleria species in the pipeline network. Naegleria was not considered when the UV system was implemented in 2001.

How safe is chlorine in drinking water?

Chlorine is effective and safe. It has been used for more than a century to ensure that water supplies are safe. It is used in all major Australian water supplies, including Perth, in line with the recommendations of the foremost health authorities, including the National Health and Medical Research Council and the World Health Organisation.

The Bunbury water supply, which also draws water from the Yarragadee aquifer, has been chlorinated for decades – as has Dunsborough's water supply.

Busselton Water's decision to chlorinate the water supply is strongly supported by the Department of Health and Department of Water.

Does chlorine cause health problems?

Chlorine has been safely used in drinking water for more than a century.

Busselton Water regularly tests chlorine levels and tests the water to ensure it is safe to drink and complies at all times with the national guidelines. Our testing shows that the water is well within health guideline limits.

As always, people experiencing health problems should consult their doctor. Medical practitioners can refer cases of concern to the Department of Health for further investigation.



Is chlorine affected by the pH levels in Busselton's water?

Busselton's pH levels are not a problem for effective chlorination. The pH limits in Busselton's water are inside the limits set by the Australian Drinking Water Guidelines, and our testing shows that chlorination is working effectively.

Busselton's pH limits were closely examined, taking into consideration the latest scientific research, as part of our extensive studies on chlorination and disinfection options. The chlorination system chosen by Busselton Water actually helps lower pH levels in the water.

Does chlorine present a risk of harmful by-products, such as THMs?

Busselton's water was tested in an accredited laboratory, which concluded that there is no real risk of by-products.

Busselton Water has also been testing for THMs before and after chlorination and levels are well under health guideline limits. THMs are formed when chlorine oxidizes with organic matter – a problem with surface water when you have plant matter in raw water. However, Busselton's water is drawn from a closed aquifer, and testing showed no or only traceable levels of organics. As there are no organics in the water, there is no or low risk of forming THMs.

How can I remove chlorine from my water?

Chlorine is perfectly safe to drink, but the taste can be removed simply and easily by:

- Standing water in a jug with an open lid for a few hours - chlorine will dissipate over time when water is exposed to the atmosphere.
- Chilling the water can reduce the chlorine taste and also keep the water fresh.
- Filter systems – click here for Department of Health information about filters.

Will chlorination affect my solar hot water system?

Solar hot water systems should not be affected by chlorination of Busselton's water.

Busselton Water 24 Hour Helpline 9781 0500
www.busseltonwater.wa.gov.au