

## Key Microbiological, Physical and Chemical Parameters

<b><i>E. coli</i></b>	<i>Escherichia coli</i> is an indicator bacteria, that is, bacteria which are not normally harmful in themselves, but may indicate the presence of other pathogenic (disease-causing) micro-organisms. <i>E. coli</i> is a type of thermotolerant coliform bacteria, and is nearly always present in the faeces of humans and other warm-blooded animals. <i>E. coli</i> is now generally regarded as the most specific indicator of faecal contamination, and therefore an important indicator for public health.
<b>pH</b>	pH is a measure of the hydrogen ion concentration of water. A pH of 7 is neutral, greater than 7 is alkaline, and less than 7 is acidic. pH is important because it can affect the disinfection process.
<b>Colour</b>	Colour is measured in Hazen Units (HU). Colour can originate from organic matter in the soil through, or over, which the water has passed.
<b>Turbidity</b>	Turbidity refers to the cloudiness or dirtiness of water, and is measured by a light scattering technique. Turbidity is measured in Nephelometric Turbidity Units (NTU).
<b>Chlorine</b>	Chlorine is used as a disinfectant in water treatment. It controls potentially harmful micro-organisms to ensure the safety of drinking water.
<b>Aluminium</b>	Aluminium occurs naturally in untreated water in the form of silts and clays. Aluminium sulphate (alum) is also used as a flocculant to remove unwanted colour and turbidity from water supplies. Research has shown that Aluminium in drinking water does not make up a substantial proportion of Aluminium ingested, and that Aluminium in drinking water is no more bio-available than any other source.
<b>Copper</b>	Copper is naturally present in both treated water and throughout the distribution system. However, soft water in contact with copper plumbing systems can on occasion give higher concentrations of copper at the customer tap. The incidence of high copper concentrations within Hunter Water's area of operation is very low, and customer complaints are infrequent.
<b>Fluoride</b>	In accordance NSW state legislation, fluoride is added to the water to help prevent tooth decay and generally improve dental health.
<b>Iron and Manganese</b>	Iron and Manganese may occur naturally at low levels in the water and may be responsible for taste and staining problems with the water.
<b>Lead</b>	Lead levels in Hunter Water's distribution system are typically less than the 0.001 mg/L limit of detection, well below the health guideline of 0.01 mg/L. Lead levels in customer plumbing can occasionally be elevated where water has lengthy residence time in contact brass plumbing fittings. These contain small quantities of lead, and leaching into the water can occasionally occur. However this is very unlikely to cause continually elevated lead levels. Note that within the area serviced by Hunter Water, there is little or no lead pipework left in the plumbing systems.

**Zinc**

As with other heavy metals, the treated and reticulated Hunter Water contains only very low levels of naturally occurring zinc. Some elevated levels in customer plumbing can be caused by old galvanised pipes and some leaching (“dezincification”) from older style brass fittings. Newer plumbing systems do not use galvanised steel, and brass fittings are normally “dezincification resistant”, so levels of zinc at the tap are rarely elevated.

**THMs**

THMs (Trihalomethanes) are formed during the disinfection process by reaction between chlorine and mainly naturally-occurring organic substances. Treatment processes are controlled to minimise their production.