



Water Quality Guidelines and Standards

Water is an essential chemical for our survival. All life on Earth depends on water for its survival. In extreme circumstances we can live without food for about 3 weeks but we can only survive without water for about 3 days. The supply of safe water to the world population of 6 billion people and to Australia's population of 20 million is one of the major challenges facing governments and industry.

Drinking Water Guidelines have been developed by the World Health Organization (WHO) to ensure that water is provided of a quality suitable for human consumption. Major inputs have been made from the European Union, Canada and the United States of America. Australia has made a minor input through the National Health and Medical Research Council.

Guidelines and Standards

Countries have their own water quality guidelines or standards based on the WHO guidelines and the specific characteristics of their own area. Water quality guidelines are developed from scientific studies. These studies investigated how low levels of constituents in the water may make it unpleasant to use, corrosive to household plumbing or detrimental to health. The WHO guideline values represent the level of a constituent that ensures aesthetically pleasing water and does not result in any significant risk to the health of the consumer. The guidelines take into account local geographic, socio-economic, dietary and industrial conditions.

Water quality standards are the maximum levels of water constituents that must not be exceeded. Government legislation such as the Safe Drinking Water Act (2003) provides a legal framework for the provision of drinking water.

GWMWater is a Statutory Authority, under the Water Act 1989. As a non-metropolitan water supplier, GWMWater uses the Australian Drinking Water Guidelines for monitoring of the water quality in towns.

GWMWater services a population of approximately 60,000 people, providing water to 7,000 rural customers and 74 towns. These communities are in an area of 60,000 square kilometers.

GWMWater uses a number of sources for its supply of water.

- Grampians catchment systems
- Wimmera Mallee Channel system
- Northern Mallee Pipeline
- Groundwater

At this stage it is not feasible to provide fully treated water to all towns because of the range of sources of water supply, the wide geographical area and the population of some communities.



Horsham's water tower



GWMWater currently provides fully treated water to about 76% of its urban customers (compared to 26% in 1995). A further 11% of our urban customers receive a partially treated supply (disinfected only) and the remaining customers receive a non-treated supply (non-potable). The non-treated supply is intended for garden use only. GWMWater is continually consulting with local communities, government and industry to implement plans to improve the quality of water provided to its customers.

Water quality standards and typical water quality supplies

The following table lists the Australian Drinking Water Guidelines and typical water quality supplies to fully treated GWMWater communities.

Characteristic	Quality Standard	Microfiltration Plant *	DAFF Plant **
E. Coli	0	0	0
Coliforms	0	0	0
pH (Acid/Base scale)	6.5 - 8.5	7.2	7.0 #
Colour (HU)	15	<3	<4
Electrical conductivity (µS/cm)	1000	210	900
Hardness (mg/L as CaCO ₃)	200	57	125
Turbidity (NTU)	5	0.5	1.4

* Typical figure for Great Western
pH of 7.0 is neutral

** Typical figure for St Arnaud

Water Quality Monitoring

To ensure that the water quality meets the given standards each supply is tested and monitored with monthly tests for E. Coli and Coliforms and quarterly tests for pH, Colour, EC, Hardness and Turbidity. Where operation problems occur these tests are performed more frequently and the cause of the problem is addressed.

Useful websites:

www.gwmwater.org.au

GWMWater website contains facts sheets for each community in the region.

www.nhmrc.gov.au

National Health and Medical Research Council for Australian Drinking Water Guidelines

www.waterquality.crc.org.au

Cooperative Research Centre for Water Quality and Treatment. Provides information on Water Quality information and regulations.



Grampians Wimmera Mallee Water
11 McLachlan Street, Horsham, 3400
PO BOX 481 HORSHAM 3402
TEL: 1300 659 961 General enquiries
TEL: 1800 188 586 Difficulties and faults
www.gwmwater.org.au