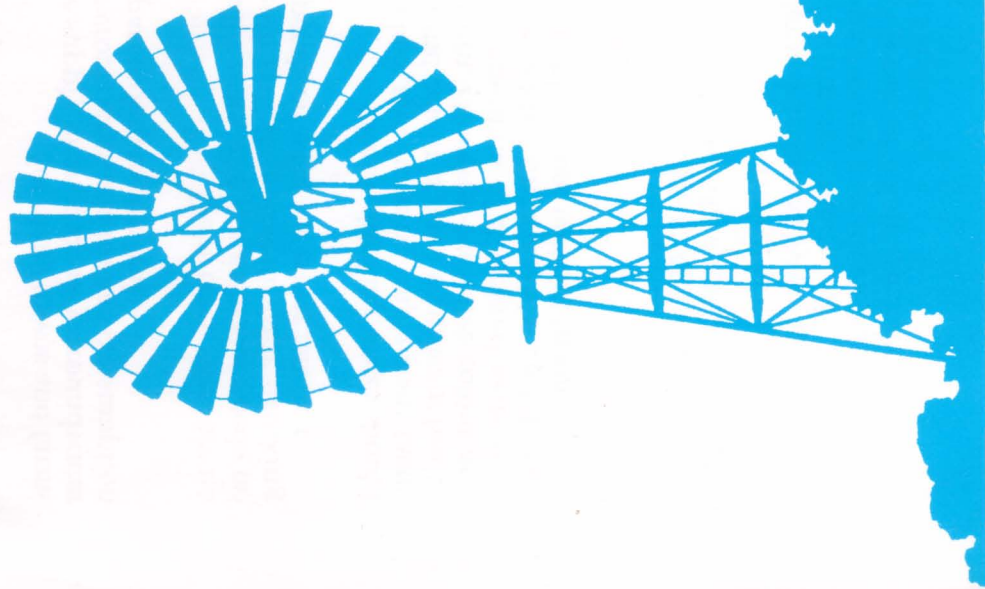




is your ground water SAFE TO DRINK?



OTHER INFORMATION

More comprehensive information on water quality can be obtained in the publications:

- You and your rainwater tank
- Guidelines for drinking water quality in Australia 1987

For further information contact:

- your local water authority
- your local government

or

Environmental Health Section
Department of Human Services & Health
GPO Box 9848
CANNBERRA CITY ACT 2601
Telephone: (06) 289 1555



COMMONWEALTH DEPARTMENT
OF HUMAN SERVICES
AND HEALTH

AESTHETIC TOLERANCES TO CHEMICALS IN BORE WATER

pH 6.5 - 8.5:

Some bore waters have lower pH due to dissolved carbon dioxide and corroded tanks and fittings

Concrete storage tanks may make pH higher.

Colour 15 (True Colour Units):

Approximates colour of a fairly strong cup of tea.

Hardness 500 (as Calcium Carbonate mg/L):

Present as calcium and magnesium bicarbonates (temporary hardness) or chlorides and sulphates (permanent hardness).

Leaves white deposits when heated.

Sodium 300 (mg/L):

Imparts brackish taste.

Sulphate 400 (mg/L):

Mild laxative in conjunction with magnesium.

Total dissolved Solids 1000-1500 (mg/L):

Limit of taste acceptance for all salts combined.

Iron 0.3 (mg/L):

Imparts a yellow to reddish colour.

Manganese 0.1 (mg/L):

Imparts a black colour.

HOW SAFE IS GROUND WATER?

About 80% of small town water supplies are reliant on water from bores and artesian wells - water that has been underground for months to millions of years. Over time, minerals from surrounding rocks and soils dissolve in the water, giving it its characteristic colour, salinity, and hardness.

For many towns and farms the supply of good quality groundwater for crops, stock and human consumption is paramount to survival.

Quite often there are no health risks, and groundwater needs no treatment. Its suitability for drinking depends on what the water has in it.

Ideally, drinking water should be clear and have no unpleasant taste. Natural colour is not a significant health concern. However, excessive colour and large amounts of dissolved salts may make water unpalatable and hence unsuitable for use without treatment.

WHAT ARE THE NATURAL CONTAMINANTS IN GROUNDWATER?

The natural quality of the water is determined by the local geology and climate. Many of Australia's groundwater resources have natural high levels of colour, salinity, hardness and sulphides.

Colour

Coloured water is a widespread problem in oxygen-depleted groundwater. Iron and manganese salts turn the water pale yellow to red, orange or black.

Salinity and Hardness

If too much salt leaches out from the surrounding earth and rock, the water may become brackish and unfit for human consumption. Animals can generally tolerate much higher levels of salt in water than people.

Water hardness is due to calcium and magnesium salts.

This results in:

- the need to use larger amounts of soap for washing
- a build up of scale on plumbing fixtures
- a metallic taste

Bacteria, Viruses and Ameobae

Undisturbed groundwaters are often free of harmful micro-organisms except where they are in contact with ground surfaces (e.g. open wells and soaks) or where water flows freely from surface to groundwater (e.g. in limestone areas).

TREATMENT OF WATER

The common temporary or bicarbonate hardness (as opposed to permanent sulphate hardness) is easy to treat, even on a small scale.

Sometimes water is both brackish and hard, and treatment becomes difficult and expensive.

HOW TO PREVENT CONTAMINATION

Protect your Borewater

Pollution of groundwater can occur if you don't take care during sinking the bore, or afterwards where run-off is allowed to re-enter the bore. You can cap the bore and provide a drain-away concrete apron around the bore to ensure that contaminated water will not run back into the bore. +

Agricultural run off, which may contain pesticides and fertilisers, also pollutes groundwater. Groundwater is also easily polluted by sewage, by animal wastes, and by polluted storm run-off.

If in doubt, seek help

A good guide to the chemical quality of water is in its taste and appearance. If you are unsure about the water quality or how to treat it, contact your local health surveyor, agricultural extension office or water authority. Simple tests can determine bacterial levels and general water quality.