



## Water quality information sheet 1

January 2010

Looking after all our water needs

# Safe use of bore water in rural areas

Water from private bores is a vital resource, especially in rural areas where scheme water is unavailable and rainfall may be irregular. Groundwater quality varies naturally from place to place.

Depending on local groundwater characteristics, raw bore water can be suitable for a range of uses, including stock water supplies, irrigation, washing clothes and flushing toilets. If treated, disinfected and tested as suitable; it can be used for showering, cooking and drinking. Where bore water has not been treated and tested as safe for a specific use (see reference 1), bore owners should place warning signs near any accessible water outlets (see Australian Standard 1319 –1994, sign number 404).

Bore water may be contaminated if chemicals or microbes have filtered through the soil to the water table or drained into the bore casing.

**The Department of Water does not guarantee that the quality of bore water allocated via a licence is suitable for any particular use. If you plan to drink your bore water, please follow advice in the Department of Health brochure, *Using Bore Water Safely* (see reference 2)**

Private rural bores can become contaminated by site activities, from neighbouring properties or by natural processes. Contamination is most likely to be detected in bores where the groundwater is near the surface and there is significant rural activity in the catchment. Sources of groundwater contamination include:

- naturally occurring substances in the soil, such as salts and metals
- poorly treated sewage and animal waste
- stormwater leached matter from waste holding or disposal areas
- chemical/ fuel spills or leakage from tanks
- agricultural chemical, pesticide and fertiliser residues.

Some contaminants may be easily detected through observed physical changes such as:

- an odour -chemical, sewage, petrol or 'rotten egg' smell
- skin or eye irritation, unusual taste, animals lose condition or show a reluctance to drink
- foaming around sprinkler outlets
- abnormal colour or sediment in the water
- dying or wilting plants.

However there are many contaminants, which can be present at harmful concentrations without being readily detected by our senses. Therefore bore water should never be used without regular laboratory testing of physical, chemical and microbiological constituents showing it is safe for its intended use.

### What can be done to help protect your bore water quality?

- 1 Construct supply bores away from any likely contamination sources. Locate any irrigation bores down the groundwater flow gradient on your property (reference 4b) to intercept and recycle any contaminants
- 2 Ensure your bore is constructed by a licensed driller and advice in *Minimum construction requirements for water bores in Australia* is followed (reference 3)
- 3 Prevent livestock access within 50 metres of bores by fencing
- 4 Prevent contaminated drainage and wastewater from soaking into the soil near water supply bores
- 5 Clean up any spilt chemicals immediately
- 6 Apply any pesticides following the advice on product labels

- 7 Recycle or dispose of waste materials such as rubbish, metals, pesticides, waste oils, tyres, batteries, chemical waste and their containers at approved off site facilities
- 8 Prepare a *nutrient and irrigation management plan* (reference 4a), then apply fertilisers only when and where needed to ensure maximum uptake by plants
- 9 Capture leached water samples in lysimeters below any crop root zone to establish the quantity of any chemicals being lost to the environment (reference 4a)
- 10 Store chemicals, fertilisers and pesticides in spillage containment trays within weather-proof buildings on reinforced concrete floors
- 11 Use Department of Agriculture and Food (WA) advice on best agricultural practice, including nutrient and trace element needs for crop growing (reference 5)
- 12 Investigate using a cover crop with the newly planted main crop, to use up excess nutrients (reference 5)
- 13 Avoid disturbing acid sulphate soils near wetlands and waterway areas, as toxic substances may be released if water tables are lowered and organic-rich soils are exposed to air (reference 6)
- 14 Join or form a local catchment management group to increase your awareness of local issues and gain more power to solve problems.

**Some actions you could take if you suspect your bore water may be contaminated:**

- 1 Do not use untested/ untreated bore water for drinking, bathing, washing food, stock water supply or irrigation of food crops
- 2 Locate the cause of the water contamination and arrange action to prevent further contamination
- 3 Treat the water, then test it's suitability for the intended use, including drinking (references 1 and 2)
- 4 Exchange local surface and groundwater quality information with your neighbours
- 5 Contact the Department of Environment and Conservation contaminated sites section (reference 6), and/or your local council's health officer for further advice.

**References**

- 1 National water quality management strategy papers available online at < [www.environment.gov.au](http://www.environment.gov.au) > select *water* > *water policy & programs* > *water quality >NWQMS*
  - a Paper 4 *Australian and New Zealand guidelines for fresh and marine water quality, 2000*
  - b Paper 6 *Australian drinking water guidelines 2004*
- 2 Department of Health brochure, *Using bore water safely*, available online at < [www.public.health.wa.gov.au](http://www.public.health.wa.gov.au) > select *water* > *drinking water* > *borewater*
- 3 *Minimum construction requirements for water bores in Australia*, online at < [www.iah.org.au](http://www.iah.org.au) >
- 4 Department of Water publications available online at < [www.water.wa.gov.au](http://www.water.wa.gov.au) >
  - a Water quality protection notes, see *waterways health* > *water quality*
    - WQPN 6 Vegetated buffers to sensitive waters
    - WQPN 31 Monitoring drains
    - WQPN 33 Nutrient and irrigation management plans
    - WQPN 41 Private drinking water supplies
    - WQPN 45 Rural land use and water quality
  - b *Perth groundwater atlas and hydrogeological atlas*, see *Tools and data* > *maps and atlases*
- 5 Department of Agriculture and Food - farm notes are available online at < [www.agric.wa.gov.au](http://www.agric.wa.gov.au) >
- 6 Department of Environment and Conservation - contaminated sites information is available online at < [www.dec.wa.gov.au](http://www.dec.wa.gov.au) > select *pollution prevention* > *contaminated sites*

**Contact details and feedback**

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