

## Guidelines for the use of alternative water supplies (private users)

Current drought conditions and associated water restrictions are increasing the demand for alternative water supplies such as rainwater and groundwater (bore water).

These guidelines provide information primarily on the management and use of water intended for potable or drinking purposes. However, they also include information on greywater and treated wastewater used for purposes such as irrigation to address the increased interest in recycling wastewater.

### 1. Background

Current drought conditions and associated water restrictions are increasing the demand for alternative water supplies such as rainwater and groundwater (bore water).

These guidelines mainly address water intended for potable or drinking purposes, although the use of greywater and treated wastewater for purposes such as irrigation have been included due to the increasing demand to utilise such water sources.

These guidelines are provided for use by health authorities and the general public to ensure that alternative water supplies can be safely used as a means of effectively reducing the demand on limited freshwater resources.

### 2. Introduction

An alternative water supply is defined as a private, non-mains supply, such as water that is not provided as a reticulated SA Water or Council supply.

Reliance on alternative water supplies for drinking is common in rural and remote areas of South Australia. However continuing drought conditions are increasing the demand for water in all areas of the State including metropolitan Adelaide.

Sensible precautions can be taken to ensure that alternative water supplies are safe for drinking and other purposes.

These guidelines provide an overview of the types of alternative supplies available, tips on selecting an alternative supply, potential health concerns, sensible practices and disinfection options.

### 3. Alternative water sources

#### Rainwater

South Australia has the highest percentage of rainwater use in Australia. People living in rural and remote areas of the state often rely on rainwater as their primary source of water.

Recent drought conditions have resulted in a lack of available rainwater in some areas. Water cartage is necessary in some instances to supplement existing rainwater supplies.

The use of rainwater as a drinking water supply is a matter of personal choice. If the rainwater is clear, has little taste or smell and is from a well maintained system it is probably safe to drink and unlikely to cause any illness for most users.

In line with the State Government's existing mandatory plumbed rainwater tank requirements for new homes,

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rainwater can safely be used for non-drinking purposes such as toilet flushing, clothes washing and hot water supply.

In most cases, private rainwater supplies such as those that are not provided to the public, do not require routine treatment. However, people with lower immunity such as the very young or very old, cancer patients, people with diabetes, organ transplants or those who are HIV positive should consider boiling the water before consumption as a precautionary measure.

## **Groundwater (bore water)**

Groundwater is often used as an alternative water supply in isolation or in conjunction with a rainwater supply.

Groundwater supplies affected by salinity can be utilised for purposes other than drinking such as showering, garden watering and toilet flushing.

Some groundwater sources are limited and current drought conditions are impacting on recharge of existing supplies.

The quality of groundwater supplies can vary according to factors such as the depth of the bore, impacts from human and agricultural activities and the presence of natural chemical deposits such as fluoride and arsenic.

Treatment may be necessary depending on quality and the intended use of the groundwater.

## **Surface water**

Surface water includes water derived from dams, creeks, rivers and streams.

Surface water supplies are more prone to contamination from sources such as animal and human waste and algal blooms.

Due to the potential for contamination, surface water is **not** recommended as a source of drinking water unless

additional treatment processes such as filtration and disinfection are in place.

Unless drinking water quality can be assured through disinfection and routine testing, surface water should be utilised for purposes other than drinking such as irrigation and toilet flushing. Treatment may still be necessary for non-drinking uses.

## **Carted drinking water**

Water carting to premises that do not receive mains drinking water supplies is common in many rural areas, including the Adelaide Hills. In these areas, alternative sources of water such as rainwater are used as the primary supply for domestic purposes.

If rainwater collection is limited by the size of storage tanks or roof catchment areas or a lack of rain, drinking water supplies may need to be augmented with carted water.

## **Recycled water**

Recycled (or reclaimed) water is water derived from sewage systems that has been treated to a standard that allows subsequent reuse. The use of recycled water can reduce the demand on alternative supplies that are suitable for drinking.

Recycled water is currently **not** used for drinking in any part of Australia but may be appropriate for private and commercial purposes such as irrigation and possibly toilet flushing, car washing and dust suppression.

The quality of the water will determine the permitted uses and businesses using recycled water are required to obtain approval from the Department of Health and adhere to any specified conditions.

Recycled water schemes are generally operated and utilised by providers such as local Councils, SA Water and large-scale developments such as

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Mawson Lakes. Indoor use is not permitted unless continual monitoring and assurance of water quality can be provided as is done in projects like Mawson Lakes.

## **Carted recycled water**

While the focus has traditionally been on carted water for drinking purposes, cartage of recycled water has recently increased in popularity as a mechanism to comply with water restrictions.

There are currently a small number of approved recycled water cartage operators in South Australia who utilise the water for their own purposes and/or deliver to private residences.

The demand for recycled water cartage is expected to increase with continuing drought conditions and demand for sustainable water usage.

## **Greywater**

Greywater is wastewater generated from bathrooms (showers, baths, spas and hand basins), laundries (washing machines and troughs) and kitchens (sinks and dishwashers).

Kitchen water can contain food particles, grease, oils and fats and its use is not recommended (particularly without treatment).

Manual bucketing of greywater is usually done by collecting bath and shower water while temporary diversion involves fitting a hose manually to a washing machine outlet.

Greywater is used for watering plants and lawns and can be an effective means of saving water provided some sensible precautions are undertaken.

Manual bucketing and temporary diversion of greywater is permitted however permanent systems are subject to an approval process through Department of Health and SA Water.

## **4. Selection of the safest alternative water supply**

When considering the suitability of a water source for personal use, there are several factors that should be considered including:

- What sources of water are available in the area?
- Is it economically viable to use the water supply? (such as the cost of drilling a bore or installation of rainwater tanks and associated plumbing)
- Will the source provide sufficient quality and quantity of water to meet household needs?
- Will the water require ongoing treatment and what is the cost of such treatment?
- Is the intended treatment considered appropriate for the water supply? (for example, UV disinfection is usually not suitable to treat surface water supplies due to turbidity)
- Is ongoing sampling of the water supply required and what are the logistics involved? (such as the actual collection of samples, transportation to laboratory, costs involved in analysis)
- The extent of maintenance required. (such as parts, labour or the need for external assistance)

Selection of a water supply should only be made after careful consideration of the issues outlined above. Further information and advice to assist in selecting a water supply is available from a variety of agencies including:

### **Department of Health**

- Environmental Health Service  
Telephone: 8226 7100  
SA Health's Drought webpage:  
[www.dh.sa.gov.au/pehs/topics/drought-package.htm](http://www.dh.sa.gov.au/pehs/topics/drought-package.htm)

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## SA Water

- General Enquiries  
Telephone: 1300 650 950  
[www.sawater.com.au](http://www.sawater.com.au)  
Contact for general information including rainwater tank rebates and plumbing requirements
- Water Restrictions Hotline  
Telephone: 1800 130 952  
Information relating to current water restrictions
- Australian Water Quality Centre  
Telephone: 1300 653 366  
[www.awqc.com.au/](http://www.awqc.com.au/)  
Advice and information relating to water quality testing

## Department of Water, Land and Biodiversity Conservation

- General Enquiries  
Telephone: 8463 6800  
[www.dwlbc.sa.gov.au/](http://www.dwlbc.sa.gov.au/)
- SA Murray Darling Basin Natural Resource Management Board  
Telephone: 8532 1432  
[www.dwlbc.sa.gov.au/nrm/boards/samdb/projects/tankuse.html](http://www.dwlbc.sa.gov.au/nrm/boards/samdb/projects/tankuse.html)  
For general rainwater information including tank size selection
- Licensing and Permits  
Telephone: 8463 6810  
For information and advice relating to bore drilling and construction
- Knowledge and Information – Information Resources  
Telephone: 8463 6944  
[www.dwlbc.sa.gov.au/water/groundwater/index.html](http://www.dwlbc.sa.gov.au/water/groundwater/index.html)  
For general groundwater information including salinity, management, quality and pollution

## Planning SA

- Building Policy Branch  
Telephone: 8303 0602  
[www.planning.sa.gov.au/go/building/sustainability-and-efficiency/rainwater-tanks](http://www.planning.sa.gov.au/go/building/sustainability-and-efficiency/rainwater-tanks)

Requirements for mandatory plumbed rainwater tanks

## 5. Potential health concerns

Water can contain a range of harmful disease-causing organisms. While mains supplies are disinfected and regularly tested to ensure that the water is safe for human consumption, the quality of alternative supplies can be variable.

Water supplies can become polluted through contaminants such as human and livestock waste, algal blooms and chemicals. The risk the water supply presents and the potential for contamination can vary according to the source. For example, a surface water supply that is unprotected from human and animal waste represents a high risk while a properly maintained rainwater supply would be viewed as a low risk supply.

Drinking water of unknown quality can expose you to harmful pathogens and result in illness ranging from a mild stomach upset to severe and debilitating conditions requiring medical treatment.

Exposure to pathogens through the use of recycled water and greywater represents less of a health risk but precautions are still necessary to ensure the protection of health.

### *E. coli*

*E. coli* is the most common bacteria present in faeces and is used as an indicator of recent faecal contamination. *E. coli* is found in large numbers in the faeces of humans and other warm blooded animals.

Exposure to *E. coli* through drinking or contact with contaminated water can cause enteric illness, commonly resulting in diarrhoea.

In extreme cases *E. coli* can result in severe illness such as bloody diarrhoea and haemolytic uraemic

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syndrome (HUS), characterised by acute renal failure and anaemia.

## ***Cryptosporidium***

The species of *Cryptosporidium* responsible for causing disease in humans has been identified as *Cryptosporidium parvum*. *C. parvum* has been isolated from a range of animals but transmission to humans is commonly from cattle and sheep, particularly young animals.

*Cryptosporidium* can also be transmitted from person to person. Infection is spread directly by drinking or swimming in contaminated water or indirectly when hands, objects and surfaces are contaminated with faeces of infected people or animals.

The main symptom of infection is watery diarrhoea accompanied by stomach cramps. Fever, vomiting and loss of appetite occur less commonly. Cryptosporidiosis is a notifiable disease in South Australia.

## ***Giardia***

There are many species of *Giardia* but human illness is usually caused by *Giardia intestinalis* (*G. lamblia* and *G. duodenalis*).

Infections of *G. intestinalis* have been reported from a range of domestic and wild animals but there is still some uncertainty about the extent of disease transmission between animals and humans.

Transmission occurs through the faecal-oral route when hands, objects or food become contaminated with faeces of infected people or animals.

Contaminated drinking and recreational waters are also routes of exposure although direct contact with a human carrier is the most likely cause of infection.

Symptoms include stomach cramps, excessive gas or bloating and diarrhoea.

## ***Salmonella***

*Salmonella* occurs in a variety of domestic and wild animals and birds. Infection usually results from ingestion of the bacteria from contaminated food products.

Person to person transmission can also occur when hands, objects or food become contaminated with faeces from people who are infected (the bacteria are then taken into the mouth).

Waterborne *Salmonella* play only a small role in causing disease.

Infection results in gastrointestinal type symptoms including stomach cramps, diarrhoea, nausea and vomiting.

## ***Campylobacter***

*Campylobacter* is commonly carried by wild birds and poultry with other domestic animals such as pigs, cattle, dogs and cats also being reservoirs.

Contaminated meat, particularly poultry products and unpasteurised milk are important sources of infection. Less commonly, infection is through contact with infected infants, household pets, domestic stock and contaminated water.

Symptoms include diarrhoea, fever and stomach cramps.

## **Toxic algae**

Cyanobacteria (or blue green algae) are capable of producing toxins that are harmful to both humans and animals through ingestion or contact.

Cyanobacteria require sunlight for growth therefore surface water supplies or open storage of water presents a potential risk.

The toxic effects of blue green algae can vary according to the type and number of cells present but commonly include skin rashes, eye irritation, stomach upsets and flu-like symptoms.

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## Chemicals

Groundwater supplies can contain high levels of chemicals of health concern including arsenic and fluoride. It is therefore important to have groundwater supplies tested before use to ensure that the water is safe for drinking purposes.

Chemical contamination of rainwater supplies is uncommon, and sampling is only necessary if concerns exist over the quality of water due to suspected impacts of major industrial or agricultural activities such as pesticide spray-drift, industrial emissions.

Groundwater and surface waters can become contaminated through the deliberate or accidental dumping, spillage or storage of chemicals in the vicinity of the water supply.

## Fluoride

Mains water supplies are fluoridated to ensure consumers receive the protective benefits of fluoride against dental decay.

Groundwater can contain natural levels of fluoride but supplies should be tested before drinking to ensure that the levels are within the recommended concentrations.

High levels of fluoride can result in adverse health effects such as dental and skeletal fluorosis, however Australian water supplies are fluoridated to levels well below those reported to result in such conditions.

Advice should be sought from the local dentist, school or community dental service or from the Australian Dental Association if water supplies other than mains are used as the major source of water for drinking and food preparation.

## 6. Safety of alternative water sources – common do's and don'ts

### Rainwater

#### Do:

- ✓ Undertake routine inspection and maintenance of the catchment area (roof and gutters) and tank at least every six months
  - Inspect and clean gutters. If large amounts of leaf material or other debris are present, the frequency of inspection and cleaning may need to be increased
  - Inspect and clear accumulated debris such as leaf and other plant material from the roof. Prune any overhanging trees
  - Inspect, clean and repair tank inlets, insect proofing and leaf filters
  - Check structural integrity of tank including roof and access cover. Repair any gaps or holes as necessary
  - Carry out an internal inspection of the tank to check for evidence of animal access (including the presence of mosquito larvae), algal growth and accumulated sediment
  - De-sludge tank every 2-3 years to remove accumulated sediments.
- ✓ Boil your rainwater if you or someone in your family has a lower immune response, e.g. very young or very old, cancer patients, people with diabetes, organ transplants, HIV positive or experiencing gastric upsets such as vomiting or diarrhoea
- ✓ Keep the use of uncoated lead flashing to a minimum (existing lead flashing can be painted as a precaution)

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- ✓ Ensure that wood-based heaters and associated flues are designed, installed and operated with the relevant Australian/New Zealand Standards (and in accord with the manufacturers instructions)
- ✓ Obtain further advice from your local Council Environmental Health Officer or the Department of Health if you have concerns about the quality of your rainwater

## Don't:

- ✗ Drink the water if it looks, smells or tastes bad in any way
- ✗ Collect rainwater from:
  - recently painted roofs (discard water from the first few rainfall events)
  - roofs coated with bitumen-based materials or painted with lead-based paints
  - parts of roofs including exposed preservative-treated wood
- ✗ Burn wood in slow combustion heaters that has been treated with preservatives or painted

## Groundwater

### Do:

- ✓ Test the water for microbiological and chemical quality prior to use for drinking, food preparation, use in swimming pools or watering edible plants
- ✓ Undertake routine inspection and maintenance of the bore protection zone and bore at least every six months:
  - Inspect the bore protection zone for anything unusual such as signs of human or livestock waste or the use or storage of chemicals or fuels.
  - Check the operation of pumps and integrity of backflow prevention.

- Check the structural integrity of fencing, gates and locks.
- Check the integrity of the bore plinth (concrete, at least 2 metres in diameter and sloping away from the borehead) and casing (water-tight concrete seal at least 3 metres in depth and extending at least 30cm above ground) and any other mechanisms installed to ensure that the bore is water-tight and protected from surface water flows.
- Check structural integrity of storage tank including roof and access cover
- Carry out an internal inspection of the tank to check for evidence of animal access (including the presence of mosquito larvae), algal growth and accumulated sediment.
- ✓ Protect the bore from livestock access by erecting fencing to allow at least a 50 metre radius around the bore (larger buffer zones may be required for shallow bores, permeable soils and fractured rock aquifers)
- ✓ Keep septic tanks well maintained
- ✓ Protect chemical storages with bunding and physical barriers to contain spills
- ✓ Install backflow prevention devices in accordance with AS/NZS 3500
- ✓ Obtain further advice from your local Council Environmental Health Officer or the Department of Health if you have concerns about the quality of your groundwater

### Don't:

- ✗ Drink the water if it looks, smells or tastes bad in any way
- ✗ Discharge septic waste within 50 metres of the bore

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- ✗ Store or use agricultural chemicals, diesel or petrol within 50 metres of the bore

## Surface water

### Do:

- ✓ Consider using the water for purposes other than drinking, e.g. garden watering and utilising another source such as rainwater for drinking
- ✓ Implement disinfection practices such as filtration and ultraviolet light irradiation (where turbidity requirements can be met) or chlorination if the water is used for drinking
- ✓ Test the water for microbiological quality on a regular basis to assure safety for drinking purposes
- ✓ Prevent stock access by fencing off the water source
- ✓ Prevent nutrient input such as faecal matter and fertilisers. Nutrient input can contribute to the occurrence of blue-green algal blooms
- ✓ Obtain further advice from your local Council Environmental Health Officer or the Department of Health if you have concerns about the quality of your surface water

### Don't:

- ✗ Drink the water unless adequate treatment is undertaken, e.g. filtration, ultraviolet light irradiation, chlorination
- ✗ Drink the water if it looks, smells or tastes bad in any way (including after disinfection)
- ✗ Drink the water, bathe in the water, use the water for stock irrigation or watering edible plants if blue-green algae is suspected or present

- ✗ Discharge septic waste within 50 metres of the surface water supply
- ✗ Store or use agricultural chemicals, diesel or petrol within 50 metres of the surface water supply

## Carted drinking water

### Do:

- ✓ Ensure that the supply is provided by a carter registered with the local Council as a food business
- ✓ Ensure that the carter is aware of and follows the Guidelines for the bulk carting of drinking water
- ✓ Ensure that carted water supplied for drinking is disinfected at the point of supply (such as the rainwater tank) as this provides protection against contamination introduced during filling of the water tanker and during transport to the point of supply
- ✓ Obtain further advice from your local Council Environmental Health Officer or the Department of Health if you have concerns about the quality of carted water

### Don't:

- ✗ Drink the water if you have concerns about the quality such as bad taste, odour or colour
- ✗ Store carted water intended for drinking in containers that have been used to hold water of a lower quality (for example, recycled or greywater) or likely to have been exposed to chemicals such as a 44 gallon drum

## Recycled water

### Do:

- ✓ Ensure that if supplied by a carter, they have approval from the Department of Health to do so
- ✓ Ensure that the recycled water is of a quality appropriate for your purpose (i.e. some recycled water

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is not permitted to be stored at a private residence)

- ✓ Apply with care and wash hands after application
- ✓ Obtain further advice from your local Council Environmental Health Officer or the Department of Health if you have concerns about the quality/uses of recycled water

## Don't:

- ✗ Use the water for indoor purposes (unless within an approved scheme such as Mawson Lakes), filling pools/spas, drinking, cooking, bathing
- ✗ Allow the water to pool or run-off your property
- ✗ Store drinking water in containers that have been used to hold recycled water

## Greywater

### Do:

- ✓ Avoid splashing of greywater and wash your hands before eating, drinking or smoking
- ✓ Keep children away from areas watered with greywater until it has soaked into the ground
- ✓ Use environmentally friendly shampoos, detergents and cleaning products to protect soil and plants watered with greywater
- ✓ Use products containing low levels of boron, phosphorus and salt
- ✓ Water several locations to prevent salts and other contaminants from accumulating in the soil
- ✓ Rotate greywater irrigation using mains or rainwater to help flush salts from the soil

### Don't:

- ✗ Drink or use greywater for food preparation or topping up pools or spas

- ✗ Use greywater from washing nappies soiled by faeces or vomit
- ✗ Store untreated greywater for more than 24 hours (bacteria and organic contaminants in greywater will cause it to turn septic and produce strong and offensive odours)
- ✗ Use greywater if others in the household have diarrhoea or an infectious disease as this could increase the risk of other people becoming ill
- ✗ Use greywater to irrigate fruit, vegetables or areas where fruit can fall to the ground and be eaten
- ✗ Allow greywater to pool or run-off onto other properties, into watercourses or the stormwater system
- ✗ Use greywater containing harsh chemicals or bleaches or after washing out hair dye or paint products.

## 7. Treatment

Alternative water supplies may require treatment to ensure drinking water quality. There are a range of treatment options that can be considered noting that suitability may differ according to the water source and supply system.

Further information about the installation and cost of disinfection systems can be obtained through contacting a water treatment company (look under 'Water Treatment and Equipment' in the Yellow Pages®).

### Chlorination

Chlorination is a common form of disinfection that is effective against harmful bacteria, many viruses and *Giardia* but has a limited effect against *Cryptosporidium*. Chlorine is a strong disinfectant that is effective at short contact times.

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Regular chlorination of rain and groundwater supplies is not considered appropriate in most cases and is generally only recommended as a remedial action.

Surface water supplies can be chlorinated, although effectiveness can be limited due to turbidity (chlorination requires a low turbidity).

Regular chlorination requires continual monitoring to ensure that the correct residuals are achieved for disinfection.

Overdosing is also possible which requires further remedial action to ensure the water remains safe for drinking. Chlorine dosing equipment is recommended to ensure the correct dose is maintained at all times.

## **Ultraviolet light**

Ultraviolet (UV) light irradiation disrupts the bonds of many organic molecules providing a potent disinfection.

UV irradiation has a minimal effect on the chemical composition and taste of the water but is effective against a range of bacteria, viruses and protozoa.

UV systems are advantageous in that they require relatively low maintenance and do not involve the addition of chemicals.

UV light can be used to provide continual assurance of rain and groundwater quality. Surface water supplies are likely to require additional treatment such as filtration in order for UV disinfection to be effective.

## **Boiling**

Boiling water is effective in killing bacteria, viruses and protozoa. Boiling will not remove most algal toxins or chemicals.

To achieve disinfection, the water needs to be brought to a boil (boiling does not need to be maintained for any length of time). Water can then be

chilled and stored in a clean container for later use.

Boiling is generally only undertaken as a precautionary or temporary form of disinfection, for example, boiling of rainwater for those with lower immunity or issuing of 'boil water notices' in response to contamination of public water supplies.

Boiling requires water to be continually treated in advance and also presents a risk of scalding. Particular care should be taken to avoid scalding if boiling is undertaken.

## **Filtration**

Particulate matter can be removed from water by a range of filtration devices. Carbon filters are commonly used to improve the taste and odour of water.

Pathogen removal varies with the filter type with most of the commonly available products. For example, carbon and ceramic filters are capable of removing bacteria only.

Provided that tanks and catchment areas are properly maintained, water filters should not be necessary to maintain microbial, chemical or physical quality of rainwater. Similarly, groundwater supplies should not require filtration.

Surface waters commonly require filtration due to the presence of particulate matter such as leaves and other debris.

Filter cartridges need to be checked, maintained and replaced as per the manufacturer's advice to avoid problems associated with microbial growth.

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## 8. Water quality testing

The need for sampling varies with the type of water supply and the intended use. As a general guide, the following recommendations apply to water supplies used for drinking purposes:

- **Rainwater** – Regular chemical or microbiological testing of domestic rainwater tanks is not necessary and in most cases is not recommended.

Generally, rainwater testing is only recommended in response to a disease investigation or where specific concerns exist over chemical quality.

- **Groundwater** – Private bores should be tested for *E. coli*, arsenic, fluoride and nitrate prior to use and with any changes in water quality such as the appearance of odour, taste or colour.

Salinity can be an issue with some groundwater supplies and impacts on taste therefore testing for total dissolved solids is also advisable.

- **Surface Water** – Surface water should be tested for *E. coli* and chemicals of health concern (a full listing of these chemicals is included in Appendix A).

If there is suspicion or evidence of cyanobacteria, an analysis should also be undertaken for algal toxins.

Depending on the degree of treatment involved, surface water supplies would generally require continuous sampling to assure quality, e.g. monthly.

- **Carted Drinking Water** – The onus of testing lies with the carter and can vary according to the water source. Further information is available from the fact sheet *Guidelines for the bulk carting of drinking water* (see Drought webpage).

The Australian Water Quality Centre (AWQC) can undertake a range of microbial, chemical and physical analysis. For further information including costs contact the AWQC on 1300 653 366.

Other water testing facilities can be contacted by looking under 'Analysts' in the Yellow Pages®.

### Further information

- Your local Council Environmental Health Officer
- Environmental Health, SA Health (details below).

- *Australian Guidelines for Water Recycling*

[www.ephc.gov.au/ephc/water\\_recycling.html](http://www.ephc.gov.au/ephc/water_recycling.html)

- **SA Health Drought webpage to access a range of water-related resources** including:

- *Water Restrictions and Health Considerations*
- *Guidance on Use of Rainwater Tanks*
- *Rainwater Tanks Maintenance & Water Care*
- *Domestic Rainwater Quality Testing*
- *Using Bore Water Safely*
- *Bore Water Quality Testing*
- *Guidelines for the Bulk Carting of Drinking Water*
- *Guidelines for the Carting of Recycled Water*
- *Private Users of Recycled Water*
- *Manual Bucketing & Temporary Diversion of Greywater*
- *Installation of Permanent Onsite Domestic Greywater Systems*
- *SA Reclaimed Water Guidelines*
- *Reclaimed Water Reuse*

[www.health.sa.gov.au/pehs/topics/drought-package.htm](http://www.health.sa.gov.au/pehs/topics/drought-package.htm)

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## Appendix A

**Table 1:** Sampling parameters for private groundwater supplies

<i>Characteristic</i>	<i>Health Guideline Value</i>
<b>E. coli</b>	E. coli should not be detected in a minimum 100 mL sample of drinking water
<b>Arsenic</b>	0.007 mg/L
<b>Fluoride</b>	1.5 mg/L
<b>Nitrate</b>	50 mg-NO <sub>3</sub> /L This value is set to protect bottle fed infants under 3mths. Adults and children over 3mths of age can safely consume up to 100 mg-NO <sub>3</sub> /L

**Table 2:** Listing of chemicals of health concern

<i>Characteristic</i>	<i>Health Guideline Value</i>
<b>Antimony</b>	0.003 mg/L
<b>Arsenic</b>	0.007 mg/L
<b>Barium</b>	0.7 mg/L
<b>Boron</b>	4 mg/L
<b>Cadmium</b>	0.002 mg/L
<b>Chromium</b>	0.05 mg/L
<b>Copper</b>	2 mg/L
<b>Lead</b>	0.01 mg/L
<b>Manganese</b>	0.5 mg/L
<b>Mercury</b>	0.001 mg/L
<b>Molybdenum</b>	0.05 mg/L
<b>Nickel</b>	0.02 mg/L
<b>Selenium</b>	0.01 mg/L
<b>Silver</b>	0.1 mg/L
<b>Sulphate</b>	500 mg/L
<b>Uranium</b>	0.02 mg/L

## Contact

Environmental Health  
Public Health  
SA Health  
1st floor, Citi Centre Building  
11 Hindmarsh Square  
Adelaide SA 5000

PO Box 6, Rundle Mall  
Adelaide SA 5000

Tel 08 8226 7100  
Fax 08 8226 7102

ABN 97 643 356 590

Email: [public.health@health.sa.gov.au](mailto:public.health@health.sa.gov.au)  
Web: [www.health.sa.gov.au/pehs/environ-health-index.htm](http://www.health.sa.gov.au/pehs/environ-health-index.htm)

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