

Domestic rainwater quality testing

Regular chemical or microbiological testing of domestic rainwater tanks is not necessary and in most cases is not recommended. The following information should be considered before rainwater testing is undertaken.

Microbial hazards

Rainwater collected and stored in a domestic tank will contain a range of microorganisms. While most of these will be harmless, the safety of rainwater will depend on excluding or minimising the presence of pathogenic (disease-causing) organisms introduced into the water through faecal contamination.

Faecal contamination of rainwater tanks is often due to bird and small animal droppings washed in from the roof catchment area or directly into the tank itself in the case of poorly maintained tanks.

Other potential sources of contamination include dead animals and insects either in gutters or in the tank itself.

Rainwater collected in an underground tank that is not fully sealed or protected against ground run-off may become contaminated with microorganisms associated with human and animal excreta.

Accumulated sludge and sediment in a rainwater tank can harbour microorganisms capable of producing odours and affecting taste. These microorganisms are not hazardous to health but can result in unpleasant odours and tastes.

Off-odours from pipework and accumulated tank sediments are more common in hot or warm weather when intakes of water are absent or infrequent. It is not always practical to immediately clean a tank, particularly if it is the only source of water. In this case, chlorinating the tank can provide

a temporary solution until cleaning can be undertaken.

Rainwater quality can change rapidly. Testing will only give an indication of the water quality on the particular day the sample was taken, not the overall or long-term water quality.

Testing for specific pathogens can be expensive and is generally only warranted as part of an outbreak investigation.

If there are strong concerns about water quality, chlorination of tank water could be a suitable alternative to testing.

Should you decide to have your rainwater tested, *E. coli* is the indicator of choice for detection of faecal contamination. Tests for total coliforms or heterotrophic plate counts are not necessary.

Chemical hazards

Sources of chemical hazards can be divided into two types:

- those arising from off-site sources beyond the control of the owner/resident, including urban traffic, industrial emissions and poor agricultural practices
- those arising from on-site sources in the immediate vicinity of the tank and controllable by the owner/resident such as materials used in the construction of the roof, gutters, piping and tank and flues from wood heaters

Chemical testing is generally not required unless concerns exist about the quality of the water due to

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suspected impacts of major industrial or agricultural activities such as pesticide spray-drift, industrial emissions.

If testing is being considered, the chemicals of concern need to be identified before testing, or large costs can be incurred with a limited likelihood of successful detection.

Undertaking testing

The Australian Water Quality Centre (AWQC) can undertake a range of microbiological and chemical testing of rainwater. For further information including costs, please contact the AWQC on 1300 65 33 66. Other water testing facilities can be found under 'Analysts' in the Yellow Pages®.

Results should be compared to the values contained in the Australian Drinking Water Guidelines 2004 which are available at:

www.nhmrc.gov.au/publications/synopses/eh19_syn.htm

Detection of *E. coli*

***E. coli* should not be detected in a minimum 100 mL sample of drinking water.**

The detection of *E. coli* indicates that maintenance is inadequate and requires investigation. The rainwater tank should be chlorinated prior to further use.

If chlorination is not an immediate option, an alternative source of water should be used for drinking and food preparation or the rainwater should be boiled prior to use.

Further information

- SA Health Drought webpage to access a range of rain water related resources:
www.health.sa.gov.au/pehs/topics/drought-package.htm
- Refer to 'Guidance on the use of rainwater tanks' by enHealth Council for more information at:
http://enhealth.nphp.gov.au/council/pubs/pdf/rainwater_tanks.pdf
- Contact your local Council Environmental Health Officer
- Contact Environmental Health, SA Health (contact details below).

Contact

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