



Reuse of Treated Wastewater

Background

Treated wastewater is sewage, industrial wastewater or other effluent that is treated to a level appropriate for its intended application. Treated wastewater can be a valuable water source and can be used for purposes such as irrigating golf courses, ovals, racetracks, turf farms, vineyards, vegetable growing, woodlots, plant nurseries, pasture crops and using in cooling towers.

Before submitting a proposal to reuse treated wastewater, please read the following information. This information can help you plan your project and fill in the application form.

Issues

The use of treated wastewater may be governed by state and territory legislation. There may be specific statutory obligations imposed under health, environmental, agricultural or food legislation.

Health

The major risk of human contact with wastewater is infection and illness resulting from viruses, bacteria and other pathogens. Chemicals in wastewater can also cause adverse health effects after prolonged periods of human exposure.

Environment

If care is not taken, reuse of treated wastewater can cause environmental problems such as contamination of surface or groundwater, water logging, soil contamination and changes in soil structure, especially if it is applied over a long period. Irrigation schemes may be subject to local environmental regulation and there may be local or state or territory guidelines for irrigation water quality.

Some important things to consider in evaluation of a site for applying treated wastewater include:

- site characteristics (e.g. soil type, slope, plant types);
- application rates, especially if close to near pristine environments and in general reducing run-off;
- availability of land for application and storage requirements; and
- statutory land requirements.

There may also be environmental consequences of removing an existing treatment plant discharge from a river and directing it to other uses.



Treatment levels

Generally, the more likely people will come into contact with the reuse water, the more treatment and prevention actions will need to be used. For many applications combining secondary treatment (i.e. physical treatment to remove solids and biological treatment to remove organics) with disinfection may be adequate. For applications that have a higher risk of human contact, tertiary treatment (i.e. secondary treatment plus removing nutrients) or higher may be required. Talk to the health and environmental departments in your state about the level of treatment required for your reuse proposal.

Safeguards and controls

Protection of public health is of critical importance. The more "barriers" there are between the untreated wastewater and the public, the lower the risk of exposure to pathogens and contaminants. For example combining a tertiary treatment process with reliable disinfection, well maintained pipes, application controls and crop restrictions will reduce risks to public health by lowering exposure to recycled water.

Monitoring

The monitoring program should assess the treated wastewater quality at the point of supply rather than at the treatment system. Sampling should be based on a statistically valid sampling program. Generally health and environmental regulators will require reporting on treated effluent quality on a regular basis.

Before you apply

Before you apply, talk to the health department and environment protection agency in your state and your local council to ensure that your proposal is consistent with planning, environmental and health guidelines and regulations. It is your responsibility to obtain any health, planning and environmental approvals or permits that are required to undertake your project.

Before you apply you should consider:

- what the treated wastewater will be used for (e.g. irrigation of a community area)
- how the wastewater will be stored, treated and applied (e.g. sub-surface irrigation, toilet flushing)
- the maintenance and monitoring regime required.

If your application is successful, you will need to provide:

- copies of your approvals (planning, health, and environment, where required)
- details of how and who will maintain and monitor the treated effluent reuse system.

Information to help you in designing your project

DPIWE (2002). *Environmental Guidelines for the Use of Recycled Water in Tasmania*.

Department of Primary Industries, Water and the Environment, Hobart.

<http://www.dpiwe.tas.gov.au/inter.nsf/WebPages/CDAT-5JV3TW?open>

NWQMS (2000). *Guidelines for sewerage systems—Use of reclaimed water. Document 14*.

Agriculture and Resource Management Council of Australia and New Zealand, Australian and New Zealand Environment and Conservation Council, National Health and Medical Research Council. Canberra, Australia.

NSW (1993). *NSW Guidelines for Urban and Residential Use of Reclaimed Water*. NSW Recycled Water Coordination Committee, Government of New South Wales, Sydney.

http://www.health.nsw.gov.au/public-health/ehb/wastewater/resi_use_reclaimed_water.pdf



QLD EPA (2004) *Draft Queensland Guidelines for the Safe Use of Recycled Water*.
Queensland Environmental Protection Agency, Brisbane.
http://www.epa.qld.gov.au/environmental_management/water/safe_use_of_recycled_water/

SA EPA/DHS (1999) *South Australian Reclaimed Water Guidelines (Treated Effluent)*.
Environment Protection Agency and Department of Human Services,
Government of South Australia, Adelaide.
<http://www.dh.sa.gov.au/pehs/branches/wastewater/reclaimed-water.pdf>

VIC EPA (2002). *Guidelines for Environmental Management: Use of Reclaimed Water*.
Environment Protection Authority Victoria, Melbourne.
<http://www.epa.vic.gov.au/Water/Programs/wastewater.asp>

Contact for more information:

- Your local planning authority e.g. local council
- Your State/Territory health agency
- Your State/Territory environment agency
- Your local water authority

Disclaimer

The information provided in this sheet is intended as a guide only and does not provide an exhaustive list of all the issues to consider in reusing treated effluent. This information does not replace legislation and guidelines in your state or territory.

