

# Understanding the treatment of recycled water



Recycled water plant intake pipes

## The Water Cycle

Port Macquarie-Hastings Council is committed to the effective management of water resources, including the use of recycled water. Sewage is typically 99.95% water and when treated appropriately, this water can be used as a sustainable alternative to drinking water.

Starting at your home, wastewater from toilets, sinks, showers and drains is piped through the sewerage system to Council's Wastewater Treatment Plants, where it is treated to a quality high enough to be released into the environment. At Lake Cathie/Bonny Hills and Port Macquarie, this wastewater is then treated so it can then be used as recycled water for non-drinking uses in the home, in the garden and on fields and other open spaces.

Using recycled water helps to keep our lawns, open space and recreational areas lush and healthy, particularly in the face of increasing pressure on drinking water supplies and drought conditions. The use of recycled water is a nationally accepted approach to responsible water management.

## How is the recycled water treated?

A multiple barrier treatment process is used to ensure that only the highest quality water is produced that meets the strict requirements of the Australian Guidelines for Water Recycling.

The recycled water treatment plants are fully automated and online monitoring alerts Council of any issues. Council has full time operators at the plant who perform daily inspections and testing to ensure the system is working at its best. The water is tested by Councils accredited laboratory to confirm the recycled water meets required guidelines.

The treatment process at both treatment plants incorporates the following processes:

### Microfiltration

Water is drawn through hollow membrane fibres which have tiny 0.04 micron holes. Water molecules are small enough to pass through, but bacteria, parasites and most contaminants are unable to pass through the membranes.

### Ultraviolet Light Disinfection

The water passes through ultraviolet light disinfection, which is capable of destroying organic chemicals, viruses and bacteria and inactivate parasites such as Cryptosporidium and Giardia.

### Sodium Hypochlorite Disinfection

The water is then disinfected with chlorine to keep it clean on its journey through the network of purple pipes and to our customers.

### Reverse Osmosis

Our Port Macquarie Recycled Water Treatment Plant also incorporates reverse osmosis and mineralisation as part of its treatment process. The filtered water passes through reverse osmosis membranes with minute holes. The holes are so small that salts and chemicals cannot pass through. This is not essential to meet the guideline requirements, but is important for some commercial customers using recycled water.

Calcium is added to the recycled water, to balance the pH, after some of the calcium is removed during the reverse osmosis process.

### Zero Pathogens

The whole process is designed to ensure the recycled water is completely free of human pathogens, resulting in very safe water that will not cause illness.



[pmhc.nsw.gov.au/recycled-water](https://pmhc.nsw.gov.au/recycled-water)

Call Council's Customer Service Centre on 6581 8111  
or email [council@pmhc.nsw.gov.au](mailto:council@pmhc.nsw.gov.au)



## How is recycled water being used?

After treatment, recycled water is delivered to a storage reservoir, ready for distribution via our recycled water network. This network is totally separate to the town drinking water supply.

The recycled water reticulation network uses colour-coded purple pipes to easily distinguish the recycled water from town water. This protects the integrity of the town water supply system and the safety of the public.

Industries around Port Macquarie have been using recycled water since 2007. They have contributed to saving drinking water by using recycled water for car washing, turf irrigation and other industrial purposes. Council also uses recycled water to irrigate sports fields and public gardens, for public toilet flushing and dust suppression on our unsealed roads

Recycled water will be supplied to households in the new development areas of Lake Cathie/Bonny Hills and Thrumster. New residences in these areas have been built with a dual plumbing system allowing for recycled water use around the house.

## Disposing of chemicals and hazardous liquid waste

Hazardous liquid wastes can include a wide variety of substances including paints, fuels, solvents, acids, pesticides and even metals such as mercury. These wastes are dangerous to people and pets, and can cause serious property damage and harm the environment. They should never be poured down the sewer or stormwater system.

Council provides a safe and accessible avenue for disposal of hazardous liquid wastes. If you have liquid chemicals that you need to dispose of, these can be surrendered free in household quantities at your nearest waste transfer station. This service supports Council's goals to provide safe recycled water and to not cause harm to the environment.

### Recycled water CAN be used for

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Cold water washing machine tap 
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Irrigating lawns and gardens including herbs/vegetables 
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Ornamental ponds 
- 

Toilet flushing 
- 

Washing pathways, cars, bikes and boats 

### Recycled water CANNOT be used for

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Drinking 
- 

Cooking or other kitchen purposes 
- 

Baths, showers or other personal washing 
- 

Swimming pools or leisure water use 
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Rainwater tanks 