

# Purified recycled water

## IN SOUTH EAST QUEENSLAND

In South East Queensland we need to find new water sources that will help us be less dependent on rain in the future. Purified recycled water is a safe method of re-treating and re-using water that would otherwise go to waste. It has been a part of the drought response plan for our region for a long time.

### How does it work?

Purified recycled water comes from treated wastewater. The wastewater undergoes a number of advanced water treatment processes to meet the stringent standards set by the *Australian Drinking Water Guidelines (2011)*.

After the wastewater is treated, it is added to the captured rainwater in Lake Wivenhoe. Then it is treated once more at our traditional water treatment plants at Mt Crosby.

Engineers and water scientists closely monitor the treatment process. Water quality is checked many times a day and there are multiple control points to prevent purified recycled water from entering Lake Wivenhoe if it has not met required quality limits.

### The advanced water treatment process

Producing purified recycled water from wastewater is an advanced process that has several stages:



#### Membrane filtration

The water passes through very fine hollow fibre membranes to remove particulate matter, protozoa and some viruses. These membranes are only 0.1 to 0.4 micrometres in size. (As a comparison, human hair ranges in size from 20 to 200 micrometres in diameter.)



#### Reverse osmosis

Filtered water is forced at high pressure through a special membrane to remove contaminants larger than a water molecule. These contaminants include dissolved salts, viruses, pesticides and most organic compounds.



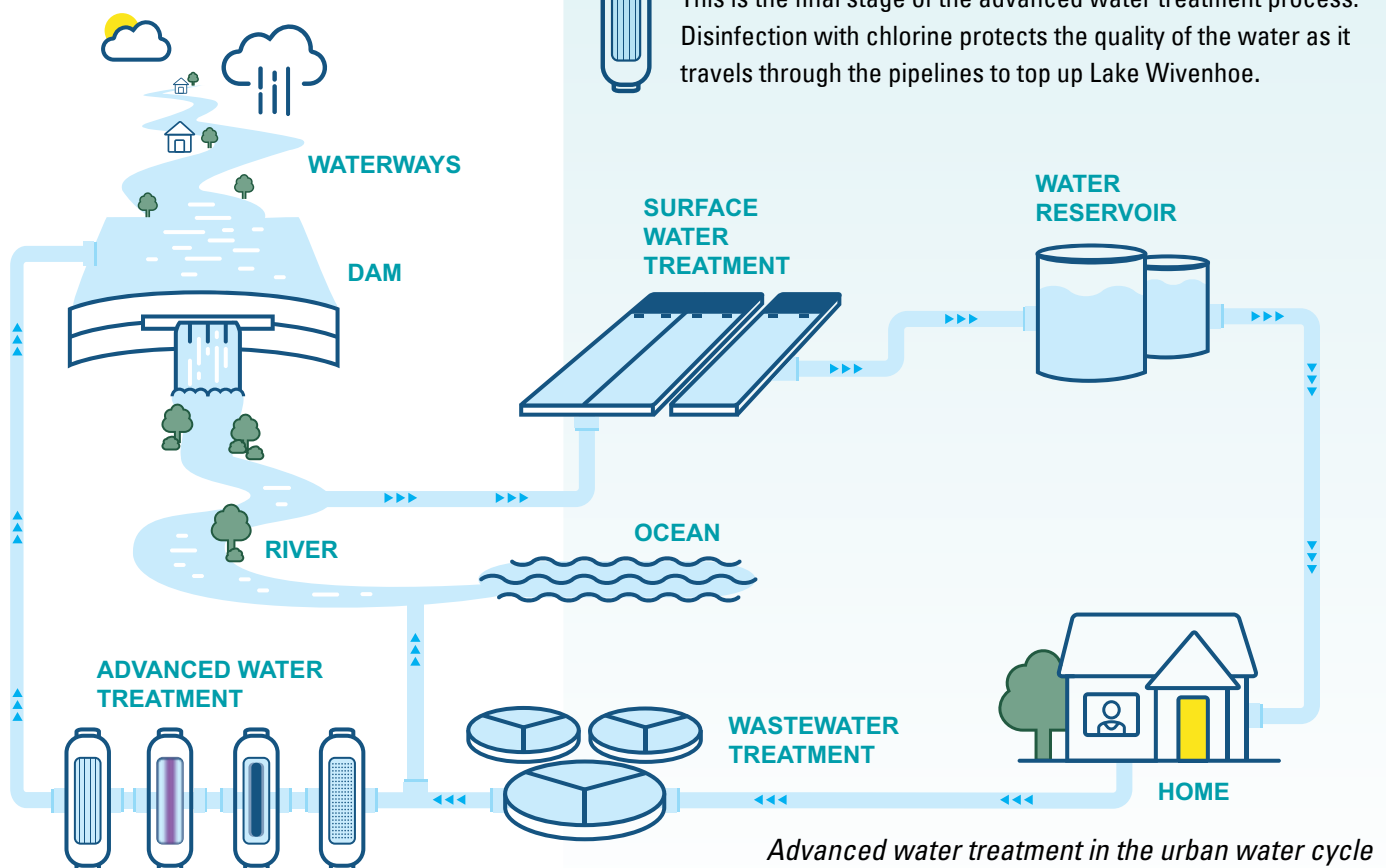
#### Ultraviolet advanced oxidation

Ultraviolet light, in combination with hydrogen peroxide, is used to destroy any remaining trace amounts of impurities.



#### Disinfection

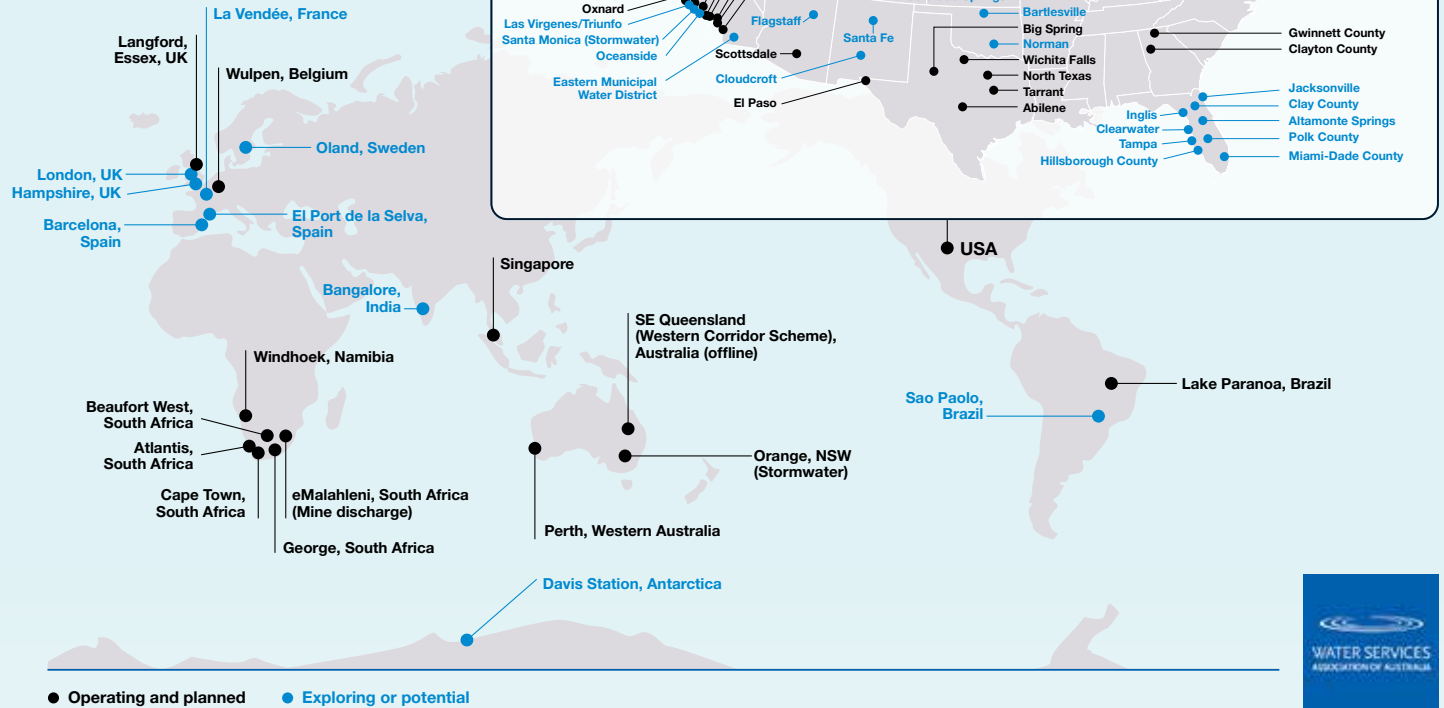
This is the final stage of the advanced water treatment process. Disinfection with chlorine protects the quality of the water as it travels through the pipelines to top up Lake Wivenhoe.



# Purified recycled water around the world

People have been safely drinking purified recycled water for more than 50 years, all around the world—in cities like Los Angeles and Singapore, as well as Perth in Australia.

## Locations around the world that use purified recycled water for drinking



## COVID-19 and purified recycled water

There is no evidence that Coronavirus (COVID-19) has been transmitted via wastewater at any stage of the treatment. Drinking purified recycled water will not cause or transmit COVID-19.

The treatment and disinfection processes we use to make drinking water safe are designed to remove pathogens such as coronaviruses. Coronaviruses are very susceptible to chlorine disinfection methods and to the additional treatment processes used to make purified recycled water, like reverse osmosis and ultraviolet advanced oxidation.

The combination of stringent treatment methods, water quality monitoring and analysis ensures that your water is safe to drink.

## Removing medical waste, hormones and chemicals from wastewater

Purified recycled water is cleaner than regular tap water. It undergoes several advanced treatment processes that filter out microscopic particles like silt, chemicals, hormones, and microorganisms such as bacteria. The water is then exposed to intense ultraviolet light and hydrogen peroxide to destroy any traces of impurities. The result is water that exceeds the strict standards set by the *Australian Drinking Water Guidelines* and that is perfectly safe for drinking. The water quality is verified multiple times a day as part of the comprehensive testing and monitoring program.

For more information on purified recycled water in South East Queensland visit [seqwater.com.au/prw](http://seqwater.com.au/prw)

