

Producing recycled water at Googong



The treatment process

Every time you flush a toilet, take a shower or wash the dishes you produce wastewater. Although it has some nasty stuff in it, wastewater is about 99.7% water.

Wastewater in Googong is treated at the Googong Water Recycling Plant (WRP). The WRP is a highly advanced plant that turns wastewater into very high standard recycled water - so high that the recycled water is suitable for reuse in the township.

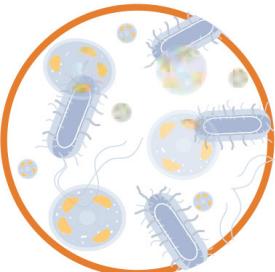
The image below and the following page describe the treatment process used at Googong.





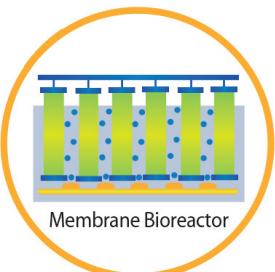
Barrier 1 - Preliminary Treatment:

We sieve it. This removes large particles and objects put down the sink and toilet.



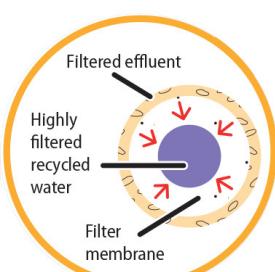
Barrier 2 - Biological Treatment:

Bugs eat it. Biological matter and chemicals break down organic matter and nutrients.



Barrier 3 - Membrane Filtration:

We suck it through a straw with really small holes. Water is forced under pressure through submicron filters to remove microscopic particles including most pathogens.



Barrier 4 - Tertiary Filtration:

We suck it through another straw with really small holes. Water is forced through an additional submicron filter to further protect public health. Particles greater than 0.0001mm in size, including viruses, bacteria and other pathogens, are removed.



Barrier 5 - UV Disinfection:

We give it a tan. Intense UV light breaks down DNA and RNA in the cells. UV light is used as additional protection to disinfect and inactivate any remaining pathogens.



Barrier 6 - Chlorine Disinfection:

We mix it with a little something special. Before distribution, recycled water is chlorinated to provide an additional disinfection barrier and to ensure the recycled water maintains a high quality in the distribution network. Chlorine is also added to drinking water for the same reasons.

When we say small for tertiary filtration (Barrier 4), we mean small. The holes in our straws are about 0.0001mm in size. They are about 100 times smaller than a human hair.

Most viruses (including COVID-19), bacteria and pathogens are larger than this.

Any that are smaller than the holes in the straws get taken out by the UV and Chlorine.

