



Taupō Water Treatment Plant - how does it work?

This water treatment plant can process 25,000 cubic metres of drinking water per day. There is room to increase this to 35,000 cubic metres per day in the future, should it be needed.

1

The intake that stretches 200m out into Lake Taupō is where the water travels up a long pipe and into the plant for processing.



2

The tank closest to the entrance contains aluminium chlorohydrate, which separates the water from the dirt, arsenic and other particles.

The tank on the far side is hydrofluorosilicic acid, which provides the fluoride that is added to the water – 0.7 of a gram per cubic metre.



3

This tank contains caustic soda, which is added into the water to make it less corrosive, so it causes no damage to taps and pipes as it travels through them.

The second tank holds liquid sodium hypochlorite, which is added to the water to sanitise it.



4

These three green water pumps move the treated water to Tamatea and Titoki reservoirs.



5

The black and blue water pumps (on the right) take the raw water from the lake through the strainers and membranes into the treated water tank. The red strainers protect the membranes from any debris by filtering out any material larger than 0.3 mm.



6

The large blue tank is full of compressed air, which is used to keep parts clean, provide a cushion in the surge vessel and operate various valves.



7

The Motor Control Centre houses all the electrical equipment that operates the plant including the controls that alter the speed of the motors and pumps.



8

The filtration membranes remove any remaining particles larger than 0.1 microns. A micron is one thousandth of a millimetre – so a particle has to be miniscule to get through this process.

A diesel generator is housed in a separate room in the plant. It is powered by a motor that is capable of running one raw water pump, one treated pump, the filtration membranes and the associated electronics. This would provide 12,500 cubic metres of drinking water per day in the event that electricity failed.