

Quakers Hill Water Recycling Plant

The Quakers Hill Water Recycling Plant is one of 30 wastewater treatment and water recycling plants in Sydney, Blue Mountains and the Illawarra. It treats wastewater to tertiary standard.

Primary treatment

Step screens and aerated grit chamber

Wastewater is passed through step screens to remove items such as paper, cotton tips and plastic. Aerated grit chambers remove sand and grit.

The plant serves an area of 73 km², surrounded by Blacktown, Plumpton, Horsley Park and Quakers Hill. The area is mainly residential, with little industry.



Secondary treatment

Intermittently Decanted Aerated Lagoons (IDAL)

The wastewater flows to the Intermittently Decanted Aerated Lagoons (IDAL). In the IDAL, wastewater passes through three processes in the one tank. These processes are aeration, settling and decanting.

The IDAL helps remove nutrients and break down organic matter. The wastewater then flows through an equalisation basin to balance the flow to later process stages.

Tertiary treatment

Mixing chamber

In the mixing chamber, chemicals are added to the wastewater. The chemicals make the smallest particles stick together (a process called flocculation) to make them easier to filter out.

Clarifiers

The wastewater flows through a tertiary clarifier where particles settle to the bottom of the tank and are removed.

Filters

The wastewater flows through dual media filters made of sand and anthracite (crushed coal). The filters trap the smallest particles while the wastewater flows through.

Chlorination

The treated wastewater is disinfected with chlorine, before being sent on to St Marys Advanced Water Recycling Plant or supplied to recycled water customers. Some treated wastewater is dechlorinated with sodium bisulphite, before being discharged to Breakfast Creek.

Solids handling

Solids collected from the IDAL are fed into high speed centrifuges to remove excess moisture.

The dewatered sludge is known as biosolids and is beneficially re-used in agriculture, forestry, land rehabilitation and landscaping.

