

Waste Water Cleaning Process

How is waste water cleaned before discharge to the Shoalhaven River?

Water is a vital component in the production of paper. Our mill uses around 8.5 megalitres of water per day. Some of this is new water while some is recycled on site. At the rear of the Shoalhaven site there are a number of large, above ground, concrete tanks that are part of the system used to render used water (effluent) acceptable for discharge to the Shoalhaven River.

Two of the stages in this clarification process are referred to as 'primary treatment' and 'secondary treatment'. Primary treatment is generally the means of removing insoluble solid matter which either floats on the surface of the water, floats below the surface or that which settles to the bottom of a mass of water. In simple terms, primary treatment takes the 'lumps' out of the water. Chemicals are added to the water to assist this outcome. The removed solids are referred to as sludge and it is this substance that is sold for use in agricultural applications.



The 'lump free' water is pumped from the primary treatment area to the secondary treatment plant. Secondary or 'biological' treatment is essentially a system we use to duplicate nature's own purification process under controlled conditions. It is called an 'aerobic' process because it makes use of 'air' (oxygen) to achieve its results. Bacteria in the water consumes oxygen and converts the water impurities (organic waste) into a 'biomass' (a population of micro-organisms) and ultimately into carbon dioxide and water. In order to stimulate all this activity by the 'bugs' in the water we add nutrient chemicals containing nitrogen and phosphorous.

The biological treatment process involves passing the water through a series of three tanks:

Suspended Carrier Tank

In the first tank, organisms are grown in special plastic rings that float in the water. This tank performs most of the cleansing treatment. The organisms appear as a thin brown film on the plastic rings.

