

Assignment #01

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Section : B

Subject : Waste water
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Hydraulic Retention time:

The hydraulic Retention time (HRT) is a measure of the average length of time that a compound remains in a constructed bio-reactor.

The volume of the ~~at~~ aeration tank divided by the volume of the aeration tank divided by the influent flow rate i.e. (τ) Tau.

Solid Retention time:

Solid Retention time SRT is the average time the activated sludge solids are in the system. The SRT is an important design and operating parameter for activated-sludge process and is usually expressed in days.

$$SRT = V \times cd / P_{out} \times C_{out}$$

Decoupling SRT From HRT:-

Decoupling SRT and HRT enhance the organic loading rate and enable reactor size reductions.

There are four Approaches to decouple SRT from HRT.

Approaches:-

→ Biomass immobilization in attached growth system.

→ Granulation and flow formation

→ Biomass recycling.

→ Biomass retention.

Advantages of Decoupling SRT From HRT.

→ Decoupling implies using less resources and generating less waste per unit of economic activity.

→ Relative decoupling is a positive sign, the real aim is to achieve absolute decoupling where the economy can continue to grow and waste generation reduces.