

SUBMITTED TO

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STUDENT ID

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SECTION

B

SUBJECT :

Wast Water Engineering.

HYDRAULIC RETENTION TIME :

The hydraulic retention time (HRT) is a measure of the average length of time that a soluble compound remains in a constructed bioreactor. The volume of the aeration tank divided by the volume of the aeration tank divided by the influent flowrate is (?) τ

SOLID RETENTION TIME (SRT) :

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

$$SRT = \frac{V \times c_d}{Q_{out} \times C_{out}}$$

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;

- Bio Mass Immobilization in attached growth systems.
- Granulation and floc formation.
- Bio mass recycling.
- Bio mass 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.