

Assignment # 01 Revised

Submitted To: Engr. Nadeemullah

Submitted By: M. Abdullah
KHAN

Student ID: 7780

Section: B

Subject:
WASTE WATER ENGS.

Hydraulic Retention Time:

The hydraulic Retention time (HRT) is a measure of the average length of time that soluble compound remains in a constructed bioreactor. The volume of the aeration tank divided by the volume of the aeration tanks divided by the influent flowrate is $(2) \tau_{ou}$.

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

Excess and in days.

$$SRT = \frac{V \times cd}{\text{Root} \times \text{Cost}}$$

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 system.
- Granulation and floc formation
- Bio-mass recycling.

→ Bio-man relation.

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 decline.