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SUBJECT:

WASTE WATER ENGG

INSTRUCTOR:

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Question No: 1:-

Two basic design parameters of Wastewater Treatment Systems are Hydraulic Retention Time (HRT) and Solids Retention Time (SRT).

1) Briefly describe each one of parameters?

2) What are methods used for decoupling SRT from HRT?

Ans Parameters:

The basic design parameters of wastewater treatment plant system are that we need some important parameters such as Capital amount of BOD, COD, TSS, VSS, TKN, total phosphorus and inlets flow.

To the facilities and the temperature and pH of waste water to be treated.

1) pH:

Generally the waste water collect the monitored site is slightly alkaline. The pH varies between 6.8 and 8.3 average value thus the pH value are within. The accepted range for 6.5 and 9.0 for the waste water this parameter has $[H^+]$ ion concentration

2) Hydraulic Retention Time (HRT):

HRT in waste water treatment plant is measure at an average length of time holding the waste water tank. It is also known as the hydraulic retention time.

3) Solids Retention Time (SRT):

SRT is a critical activated sludge design and operating parameter. The traditional method for control 'SRT' is to manually adjust the sludge wasting rate base on the food to micro-organisms (F/M) ratio or mixed liquor suspended solids (MLSS) concentration.

↓ METHODS Decoupling SRT from HRT:

The hydraulic retention time SRT from HRT reduces the capital expenditure and increase Biogas production and for CHP utilization.

The decoupling of SRT from HRT not only increased glucose at organic loading rate of 6.5-42.89 $\text{COD}/\text{m}^3/\text{d}$ and HRT of 8-12 hr the SRT to 2-d 99.9% in the IBRess. from 0.55-1.8% in CSTRs to 2.4-9.6% of SRT from HRT insure sufficient reactor biomass.

Advantages Of Discouring SRT From HRT:

- Good contact between biomass and substrate efficiency.
- Required small areas.
- Stable sludge.
- Long survival time.
- Simple design.
- Relatively low cost.
- Low excess sludge production.
- High bio-mass retention.
- High organic loading.
- Larger granular sludge.
- Highly contact between sludge and waste water.
- Improve mixing those advantage SRT from HRT.