

SYED JAWWAD

7386

WASTE WATER ENGINEERING

ASSIGNMENT # 1

①:- The basic design Parameter of waste-water treatment plant system are hydraulic retention time and solid retention time? ①

Ans:- Some ~~Major~~ Capital Amount of BOD, COD, TSS, VSS, TKN, total Phosphorus and also an inter-flow, Temperature and PH of waste-water are some important Parameters that are needed for the basic design Parameter of waste water treatment Plant systems.

① ONE PARAMETER:-

PH:- Generally the waste-water's PH is between 6.8 and 8.3 average value making it slightly Alkaline. The Accepted range for the waste-water is between 6.5 and 9.0.

② HYDRAULIC RETENTION TIME:-

The average length of time holding the waste-water in a tank is said to be Hydraulic Retention Time.

③ SOLID RETENTION TIME:-

It's a critical sludge design an operating Parameter. If we manually adjust the sludge at the base of the waste-water on the food to micro-organisms F/M ratio, SRT can be adjusted the hydraulic Retention time. SRT from HRT Reduces the Capital Expenditure and Increase Bio-gas Production and for CHP Utilization. The de-coupling of SRT from HRT not only increased Glucose at organic loading rate of 6.5-42.8 g CO₂/L-d and HRT of 8-12hr the SRT to 99.9%. In the J.B Ross from 0.5-1.8 in the CSTRS to 2.4-9.6 L/L-d SRT from HRT to Ensure reactor bio-mass.

④ ADVANTAGES OF DECOUPLING SRT FROM HRT: (2)

- ① Substrate Efficing and bio-mass make a good Contact
- ② All areas are retained.
- ③ Sludge stable.
- ④ Service time is long.
- ⑤ Simple Design
- ⑥ Relatively low ~~constant~~ Cost.
- ⑦ Low Excess Sludge.
- ⑧ High Bio mass - retention
- ⑨ High Organic Loading
- ⑩ Larger granular Sludge.
- ⑪ Highly Contact between Sludge and waste-water
- ⑫ Improve Mixing those Advantage SRT from HRT.