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Question # 1

Part (c) Briefly describe each one of these parameter:

Sludge Retention time as a suitable Operational Parameter to remove both Estrogen and Nutrients in an aerobic - Anoxic Acrobic activated Sludge System.

Estrogen in wastewater are responsible for a significant part of the endocrine - disrupting effect observed in the aquatic environment

The effect of sludge retention time (SRT) on the removal and fate of 17β -estradiol (E2) in a anaerobic - anoxic - oxic activated sludge system designed for nutrient removal was investigated by laboratory - scale experiments using synthetic wastewater. With a hydraulic retention time of 8 h when SRT ranged 10 - 25 days It was almost completely removed from water, and EE2 removal - 81 % efficiency was 65 %. Both estrogens were

sorbed onto activated sludge. Distribution coefficients (K_d) of estrogens on anaerobic sludge were greater than anoxic and aerobic systems sludges. Mass balance calculation indicated that 99.1% of influent E2 was degraded by the activated sludge process. 1.1% remains in excess sludge.

Question # 1

Part (B)

SRT from HRT Methods of decoupling

Ans) Regenerative Thickening :-

the SRT from the HRT Decoupling
Capital Expenditures and Reduced
Biogas Production or Increases
CHP Utilization

The Gloversville - Joint Wastewater treatment facility is producing 95 percent of its own electrical demand through a combined heat and power (CHP) process fueled by

anoxic zone. This level of
mediation. Precipitation is
possible through co-precipitation
of iron. When iron is
reduced with manganese, ferric
and the oxidation reagent
thickening of the sludge to increase
of the primary digester.

Comparative assessment of decoupling
of biomass and hydraulic
retention time :-

Distillers Grains, Production properties
and Utilization

Anaerobic Bio technology

Question # 1 Part # C

Advantages :- The Solids retention
time or SRT controls the
Concentrations of bacteria
throughout the treatment systems
higher SRT contribution in the
reactor which gives rise
to smaller reactor size.

Smaller reactor size

Reduced Sludge Production

Clearly an optimum SRT exists resulting from a trade off between the gains and losses in the various cost terms. For municipal sewage treatment plants performing combined nitrification.