MODIFICATION OF ACTIVATED SLUDGE SYSTEM FOR OPTIMUM REMOVAL OF NUTRIENTS

The experiment has been performed in order to investigate the effect of using contact stabilization activated sludge as an application of Enhancing Biological Phosphorous Removal (EBPR) by using contact tank as a phosphorus uptake zone and using thickening tank as a phosphorus release zone.

The study involved the construction of pilot plant which setup in Quhafa Wastewater Treatment Plant (WWTP) included contact, final sedimentation, stabilization and thickening tanks respectively with two returns sludge in this system one of them to contact tank and another to stabilization tank. Results showed the removal efficiencies of COD, BOD_5 and TP for this pilot plant with the range of 91%, 92 % and 85 % respectively during the first stage by effecting of 3mg/l influent TP, but during the second stage were with the range of 91%, 93% and 83% respectively by effecting of 5mg/l influent TP and 91%,92% and 83% for COD,BOD_5 and TP respectively under the effect of 8mg/l influent TP during the third stage.

Finally the mechanism of this pilot plant depends on the Removal of the phosphorus from the domestic wastewater as a concentrated TP solution form supernatant above the thickening zone not through waste sludge like traditional systems.