

Implementation of IWA-ASM1 Model for Simulating the Wastewater Treatment Plant of Beja by GPS-X 5.1

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Abstract : The modified activated sludge model (ASM1 or Mantis) is a generic structured model and a common platform for dynamic simulation of varieties of aerobic processes for optimization and upgrading of existing plants and for new facilities design. In this study, the modified ASM1 included in the GPS-X software was used to simulate the wastewater treatment plant (WWTP) of Beja treating domestic sewage mixed with baker's yeast factory effluent. The results of daily measurements and operating records were used to calibrate the model. A sensitivity and an automatic optimization analysis were conducted to determine the most sensitive and optimal parameters. The results indicated that the ASM1 model could simulate with good accuracy: the COD concentration of effluents from the WWTP of Beja for all months of the year 2012. In addition, it prevents the disruption observed at the output of the plant by injecting the baker's yeast factory effluent at high concentrations varied between 20 and 80 g/l.

Keywords : ASM1, activated sludge, baker's yeast effluent, modelling, simulation, GPS-X 5.1 software

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