

EVALUATION OF IN-CAMPUS WASTE WATER REUSE: PROCESS DESIGN, CHALLENGES AND SUCCESS

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Education and public awareness initiatives, including promotion of treated water reuse was initiated at Fatih University campus-Istanbul-Turkey. This project aimed at the reduction of the pollutants in the effluent to meet the stringent regulations. The objectives also targeted to promote water reclamation by studying drivers for reclamation, regulations, environmental impacts and cost of water. The need for in-campus waste water treatment and reuse option has been grow in the past decade. The reduction of the strength of the waste water and removal of pollutants to the permit levels is a challenging task, especially when the WWTP present within the fringes of a drinking water reservoir.

The purpose of the study was to determine process parameters to optimize, manage and efficiently operate the existing system for the given application. Furthermore, to explore existing the existing wastewater reclamation/reuse application, their strengths and weaknesses. The different stresses from using of Laboratories, production of meals in the university kitchen, efficiency of cooking oil collection and retention process.

The reclaimed water has been applied for the irrigation of the in-campus gardens, plants, and trees. The necessary and regular investigation of the effluent water quality was inspected on weekly bases. Water quality standards for reuse put the needs for regular measurements of pollution parameters which includes pH, T, COD, BOD, TKN, P, Turbidity, Imhoff test, SS and VSS.

The waste water treated was reclaimed totally during dry season, while during winter and maintenance, it was discharged to the receiving body nearby. Significant part was stored in two storage tanks, on nearby the WWTP and the other at higher elevation used for direct irrigation without pumping energy. The treatment process was totally monitored and controlled by SCADA system with the ability of monitoring the pH, Conductivity, DO, and T online. Furthermore, the pumps and blowers was also controlled to deduce the energy consumption and optimize the DO level.