

DESIGN ANALYSIS OF 345 MLD SEWAGE TREATMENT PLANT WITH UASB TECHNOLOGY

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ABSTRACT

Anaerobic treatment of municipal wastewater has recently gained worldwide attention due to its effectiveness, low cost, and low energy requirements. The Upflow Anaerobic Sludge Blanket (UASB) has been considered to be the most attractive reactor system due to its simplicity and low operation. It's nearly two decades since UASB concept for sewage treatment was started in India and today it has taken an edge over the other developing countries having similar climatic conditions in the use of this technology. UASB has proven to be effective alternative for treating wastewater. In contrast to aerobic process, anaerobic treatment process has many advantages. The organic matter (COD) presents in the wastewater in the absence of oxygen is mainly converted in to biogas, which is a valuable product. Very little portion is converted in to the sludge. They will hopefully lead to more ecologically-sustainable wastewater treatment in the future.

Upflow Anaerobic Sludge Blanket Reactor are mostly designed using empirical formulae derived either from past pilot scale studies or from performance of already existing sewage treatment plants elsewhere. Actual performance of the sewage treatment plant can differ from that of design mainly due to differences in sewage characteristics & local conditions. Thus knowing actual performance and capacity of the sewage treatment plant becomes very important. This work is concerned with the design analysis of Asia's largest sewage treatment plant of 345 MLD capacity (based on Up flow Anaerobic Sludge Blanket reactor), installed at Bharwara, Lucknow, Uttar Pradesh, India. The design analysis of the sewage treatment plant has been carried out to comment on the adequacy of design and capacity. It will also prove quite useful as compiled information for ready reference and use.

KEYWORDS: Anaerobic Process, India, Sewage Treatment, UASB.