**ABSTRACT**

**Aims:** The main purpose of this study is to evaluate the use of tube settlers and Lamella plates in

increasing the efficiency of sedimentation tanks in removing the turbidity, bacteria, and algae from

water in water treatment plants.

**Study Design:** Evaluating the use of tube settlers and Lamella plates in increasing the efficiency of

sedimentation tanks.

**Place and Duration of Study:** Sample: Department of Civil Engineering and Department of

Sanitary and Environmental Engineering, between June 2012 and July 2016.

**Methodology:** Egypt’s governorates are enriched with various water treatment facilities. More than

7 full-scale WTPs of discharges ranged between 1,25x105 and 9x105 m3/day located in Cairo and

Giza in Egypt were assessed. The evaluation has been done through the laboratory analyses that

include the average summer and winter turbidity, bacteria and algae and the average removal

efficiency have been deduced for seven water treatment technologies to be assessed.

**Results:** A comparison was done during the period of winter and summer 2015. The evaluation

was done on the basis of removal efficiency of turbidity, bacteria and algae. The results have

shown that tube settler clarifiers are more efficient than lamella plate clarifiers and other clarifying

systems with higher SLR (surface loading rates). Application of these plates has not caused any

interruption of daily operation of treatment plants and could be achieved at minimal cost. Results

indicated that the tube settler clarifiers have achieved the highest removal efficiency in terms of

turbidity, bacteria and algae. Which were between (84.45%, 89.64%), (98.24%, 99.36%) and

(94.31%, 98.86%) respectively. On the other hand, lamella plate clarifiers have achieved turbidity

removal efficiency between (69.59%, 74.11%), its bacterial removal efficiency was between

(98.28%, 99.11%) and its algae removal efficiency was between (89.48%, 92.94%).

**Conclusion:** The tube settler clarifiers have achieved the highest removal efficiency in terms of

turbidity, bacteria and algae. It is better than the other clarifying systems.

*Keywords: Tube settler clarifiers; lamella plate clarifiers; turbidity and algae.*