Improvement Of Direct Filtration systems
By using Pretreatment Technique

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Abstract:

Treatment of water to make it fit for human consumption in many developing countries is still a major problem. The principal objective of this study is to increase and encourage the use of this simple technology in Egypt.

The pilot plant consists of three roughing filters as a primary filtration system followed by sand filter as a final filtration system. In this study, several variables were tested for roughing and sand filters such as pre-chlorination, rate of filtration, and effect of multistage. The results of both roughing filter and final sand filter were compared and discussed in terms of overall removal efficiencies. The main results can be summarized as follows: The use of pre-chlorination water gives turbidity removal efficiency smaller than raw water without pre-chlorination. The pilot achieved a good removal efficiency with rates filtration ranging between (60-90) m³ / m² / day for roughing filter. The R.F had achieved a removal efficiency (86%, 81%, 84%) for Turbidity, Algae, and Bacteria respectively. The R.F followed by sand filter had achieved a removal efficiency (94%, 91%, 89%) for Turbidity, Algae, and Bacteria respectively.

Key Words: Down flow roughing filter – Direct filtration – Roughing filter – Turbidity.