عنوان مقاله:

Efficiency Evaluation of Powdered Activated Carbon as Coagulant aid in Ahvaz Water Treatment Plant

محل انتشار:

همایش بین المللی بحران های زیست محیطی ایران و راهکارهای بهبود آن (سال: 1391)

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خلاصه مقاله:

In recent decades, increasing pollution of water resources has caused higher rates of organic pollutants in water resources. Considering the surface water resources as one of the main water supplies in many regions of Iran and the application of chlorination for disinfecting drinking water has increased the rate of disinfection By–Products (DBPs) formation. Trihalomethanes (THMs) as the main group of DBPs are categorized and considered to have the potentiality of increasing the rate of liver, kidney and CNS adverse effects.This study which presents experimental results, aimed at the reduction of organic matters by the use of powdered activated carbon (PAC) in the process of coagulation in Koot Amir water treatment plant in Ahwaz city, the affection of two coagulant such as Ferric chloride and Poly aluminum chloride (PACl) with PAC in removing Total Organic Carbon (TOC) considering different elements such as concentration and the kind of coagulants, concentration of PAC, pH changes and contact time has been surveyed. The results of this study clearly indicated that maximum removal in optimum pH of Ferric Chloride has been 40% while 44 percent TOC removal has been achieved at pH 6.5 for Poly Aluminum Chloride coagulant. In use of powdered activated carbon with optimum pH and concentration of Ferric Chloride, TOC reduction will increase with increasing PAC concentration and will be 90 percent. Also the increase of powdered activated carbon in similar conditions along with Poly Aluminum Chloride 87 percent reduction has been occurred.

کلمات کلیدی:

Disinfection By-Products, Powdered Activated Carbon, Ferric Chloride, Poly Aluminum Chloride, Total Organic Carbon