

In this research, three types of manganese greensand were used for removal of iron and/or manganese from water and their efficiencies were compared. Manganese greensand type A is a conventional greensand and is made from glauconitic greensand. It is regenerated by using potassium permanganate. Manganese greensand type B and C are made from graded silica sand coated with manganese dioxide. The regeneration of this type of greensand is normally performed by chlorine activation. The experiments were performed at filtration rate of 10 and 20 $\text{m}^3/\text{m}^2\text{-hr}$ with batch regeneration and 10 $\text{m}^3/\text{m}^2\text{-hr}$. with continuous regeneration.

From the results, it was found that, without chlorine activating, manganese greensand type B and C had an iron removal efficiency of 1.976 $\times \text{Fe}$ and 3.076 g Fe/litre of manganese greensand respectively at filtration rate of 10 $\text{m}^3/\text{m}^2\text{-hr}$ but could not remove manganese at all. Manganese greensand type A could remove iron efficiently at filtration rate of 5 $\text{m}^3/\text{m}^2\text{-hr}$ in water having a pH of 6.2. Moreover, filtration rate of 10 and 20 $\text{m}^3/\text{m}^2\text{-hr}$. were not suitable for all three types of manganese greensand in iron and manganese removal with an average influent concentration of 4 and 2 mg/L, respectively.

For continuous regeneration process, all three types of manganese greensand could effectively remove both iron and manganese but having excessive headloss. Therefore, the economic feasibility was not justified.