PENGARUH FILTER AIR BERBAHAN MATERIAL ENDAPAN BOILER CANGKANG KELAPA SAWIT TERAKTIVASI TERHADAP KUALITAS AIR SUMUR BOR DI DESA PANTAI GEMI KECAMATAN STABAT

ABSTRAK

Telah dilakukan penelitian pengaruh filter air berbahan material endapan boiler cangkang kelapa sawit (BCKS) teraktivasi terhadap kualitas air sumur bor di desa pantai gemi kecamatan stabat dengan tujuan mendapatkan kualitas air yang lebih baik dengan kadar besi (Fe) dan kekeruhan lebih rendah serta melihat kemampuan material endapan boiler cangkang kelapa sawit sebagai adsorben. Material endapan BCKS yang digunakan berbentuk granul dan diaktivasi dengan larutan HCl 5M dan di panaskan pada suhu 100℃ selama 3 jam. Filtrasi menggunakan material tambahan seperti pasir halus, kerikil dan ijuk. Terdapat dua jenis filter yang digunakan dalam penelitian ini yaitu filter dengan endapan BCKS dan tanpa endapan BCKS agar dapat melihat pengaruh dari material endapan BCKS tersebut. Hasil filtrasi air sumur bor menunjukkan bahwa pada filtrasi dengan endapan BCKS terdapat kandungan besi (Fe) 0,422 mg/L dan tingkat kekeruhan sebesar1,3 NTU, sedangkan filtrasi tanpa endapan BCKS menunjukkan kandungan besi sebesar 0,071 mg/L dan tingkat kekeruhan sebesar 2,2NTU. Jadi dari hasil penelitian ini endapan BCKS lebih efektif dalam proses penjernihan air dari pada penurunan kandungan besi (Fe) pada air sumur bor.

Kata Kunci : *Endapan Boiler Cangkang Kelapa Sawit, Proses filtrasi, Proses Aktivasi, Kualitas Air*.

THE EFFECT OF WATER FILTER MATERIALS MADE OF SEDIMENTARY MATERIALS ACTIVATED PALM SHELL BOILER ON WATER QUALITY OF BOILLED WELLS IN THE VILLAGE GEMI BEACH, STABAT DISTRICT

ABSTRACT

Research has been carried out on the effect of a water filter made from activated palm shell boiler sediment (BCKS) on the water quality of drilled wells in the coastal village of Gemi, Stabat sub-district with the aim of getting better water quality with lower levels of iron (Fe) and turbidity and seeing the ability of the material. Palm shell boiler sediment as adsorbent. The BCKS precipitate material used was in the form of granules and was activated with 5M HCl solution and heated at 100℃ for 3 hours. Filtration uses additional materials such as fine sand, gravel and palm fiber. There are two types of filters used in this study, namely filters with BCKS deposits and without BCKS deposits in order to see the effect of the BCKS deposited material. The results of borehole water filtration show that filtration with BCKS deposits has an iron (Fe) content of 0.422 mg/L and a turbidity level of 1.3 NTU, while filtration without BCKS deposits shows an iron content of 0.071 mg/L and a turbidity level of 2.2 NTU. . So from the results of this study, BCKS deposits are more effective in the water purification process than reducing iron (Fe) content in borehole water.

Keywords: *Oil Palm Shell Boiler Sediment, Filtration Process, Activation Process, Water Quality.*