INTISARI

PENGGUNAAN LARUTAN Na_2EDTA UNTUK MENGHILANGKAN LOGAM-LOGAM BERAT DARI LUMPUR LIMBAH IPAL SEWON BANTUL

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Pada penelitian ini telah dilakukan penghilangan logam-logam berat Cd, Cr, Cu, dan Pb yang terkandung dalam lumpur limbah IPAL Sewon Bantul dengan metode *leaching* menggunakan larutan Na_2EDTA 0,1 M. Penelitian diawali dengan penentuan kadar logam berat Cd, Cr, Cu, dan Pb dalam lumpur limbah dengan menggunakan AAS. Dalam proses *leaching* logam berat telah dipelajari pengaruh pH larutan dan massa lumpur limbah terhadap efektivitas pelarutan logam berat tersebut. Jumlah logam-logam berat yang terlarut dianalisis dengan menggunakan alat AAS.

Hasil penelitian menunjukkan bahwa lumpur limbah IPAL Sewon Bantul mengandung logam berat Cd, Cr, Cu, dan Pb dengan jumlah yang relatif besar 4,605; 9,875; 192,413; dan 76,092 mg kg^{-1}. *Leaching* lumpur limbah IPAL Sewon Bantul menggunakan larutan Na_2EDTA 0,1 M dapat menghilangkan logam berat Cd, Cr, Cu, dan Pb. Efektivitas pelarutan logam tersebut dipengaruhi oleh pH larutan EDTA dan massa lumpur limbah. Pelarutan logam berat Cd, Cr, Cu, dan Pb berlangsung secara maksimal tercapai pada pH 1 dan massa lumpur limbah sebesar 6 g dengan menggunakan 100 mL larutan Na_2EDTA 0,1 M, masing-masing menjadi 0,758; 4,859; 23,820; dan 20,086 mg kg^{-1}.

Kata kunci : Lumpur Limbah, *leaching*, logam berat.

ABSTRACT

THE USE OF Na_2EDTA SOLUTION TO REMOVE HEAVY METALS FROM SEWAGE SLUDGE IN INSTALLATION OF WASTEWATER TREATMENT OF SEWON BANTUL

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In this research, an effort for remove Cd, Cr, Cu, and Pb metals from sewage sludge in installation of wastewater treatment of Sewon Bantul by using leaching method with 0.1 M Na_2EDTA solution has been studied. This research was initiated by determining the content of Cd, Cr, Cu, and Pb metals in sewage sludge by using AAS. In the leaching process, the effect of pH solution and mass of sewage sludge on the effectiveness of heavy metals leaching has been evaluated. The amount of dissolved metals was determined by using AAS.

The results showed that sewage sludge in installation of wastewater treatment of Sewon Bantul contains relatively large of Cd, Cr, Cu, and Pb metals, were 4.605; 9.875; 192.413; and 76.092 mg kg^{-1}. The leaching of sewage sludge using 0.1 M EDTA solution could remove Cd, Cr, Cu, and Pb metals. The effectiveness of metals leaching was influenced by pH of solution and mass of sewage sludge. The maximum leaching of Cd, Cr, Cu, and Pb metals was achieved by using 100 mL of 0.1 M Na_2EDTA solution at pH 1 and mass sewage slude of 6 g, were 0.758; 4.859; 23.820; and 20.086 mg kg^{-1}.

Keywords : sewage sludge, leaching, Heavy metals.