

PERBAIKAN KUALITAS LIMBAH CAIR INDUSTRI BREM DENGAN TEKNIK PRODUKSI BERSIH

(Studi di Firma Udiyana, Bali)

INTISARI

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Limbah yang dihasilkan oleh industri brem Firma Udiyana disebabkan oleh adanya beberapa permasalahan yang terdapat dalam kegiatan proses produksinya. Permasalahan yang sering dihadapi oleh industri yaitu penggunaan alat yang belum efektif. Selain itu, industri tidak memiliki bak penampung limbah sementara serta tidak melakukan pengecekan limbah. Tujuan dari penelitian ini adalah menerapkan teknik produksi bersih berupa modifikasi terhadap peralatan produksi, memperbaiki nilai karakteristik parameter limbah, dan meningkatkan nilai kualitas air limbah.

Metode yang digunakan pada penelitian ini adalah teknik produksi bersih berupa modifikasi peralatan produksi. Tahapan pada penelitian ini yaitu cara menyusun neraca massa, penerapan modifikasi peralatan produksi, analisis pengaruh alkohol, analisis kualitas air limbah sebelum dan sesudah modifikasi peralatan produksi.

Modifikasi alat yang dihasilkan dalam penelitian ini adalah modifikasi alat saring pada proses pencucian dan perendaman dan melubangi box container pada proses pengepresan. Selanjutnya, perbaikan terhadap nilai parameter limbah untuk Total Suspended Solid (TSS) sebesar 49,1%, Biological Oxygen Demand (BOD) 27,6%, Chemical Oxygen Demand (COD) 31,8%, dan derajat keasaman 12,5%. Peningkatan kualitas air limbah ditandai dengan menurunnya nilai indeks pencemaran dengan nilai awal 10,1 (cemaran berat) menjadi 8,9 (cemaran ringan).

Kata kunci : limbah cair, teknik minimisasi, modifikasi alat

IMPROVEMENT OF QUALITY OF BREM INDUSTRIAL LIQUID WASTE WITH CLEAN PRODUCTION TECHNIQUES

(Study at Firma Udiyana, Bali)

ABSTRACT

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The waste which was generated by the *brem* industry of Firma Udiyana is caused by various problems contained in its production process activities. The common problem that the industry has is the ineffective use of tools. Besides, the industry does not have a temporary waste collection tank as well as the industry does not apply the waste checking. The purpose of this research is to implement the clean production techniques in the form of modifications towards the production equipment, improve the characteristic value of waste parameter, and also increase the value of wastewater quality.

The method used in this research is a clean production technique in the form of modification of production equipment. The stages in this research are; (1) the way to set a mass balance, (2) the application of modification of production equipment, (3) the analysis of the influence of alcohol, and (4) the analysis of wastewater quality before and after the modification of production equipment.

The modification of tools produced in this study is the modification of filter equipment in the washing and soaking process, and also perforating the container box in the pressing process. Furthermore, the refinement towards the value of waste parameters for Total Suspended Solid (TSS) were about 49.1%, the Biological Oxygen Demand (BOD) were about 27.6%, the Chemical Oxygen Demand (COD) were about 31.8%, and the acidity degree were about 12.5%. The improvement of wastewater quality is marked by the reduction of the pollution index value with an initial value of 10.1 (heavy contamination) to 8.9 (mild contamination).

Keywords : liquid waste, minimization techniques, tool modifications.