

Hubungan Pengaturan Laju Umpan, Selang Ukur *Hopper* dan *Splitter* pada *Air Table* Guna Memperoleh *Cassiterite* dengan Kadar (Sn) 70% di Pusat Pengolahan Bijih Timah Pemali PT. Timah (Persero) Tbk

The Relation of Setting the Feed Rate, Interval Measure Hopper and A Splitter On the Air Table for Cassiterite (Sn) Levels By 70% in the Tin Ore Processing Center Pemali PT. Timah (Persero) Tbk

¹Nur Muhamad, ²Linda Pulungan, ³Dono Guntoro

^{1,2,3}Prodi Teknik Pertambangan, Fakultas Teknik, Universitas Islam Bandung,

Jl. Tamansari No.1 Bandung 40116

email: ¹annur.nm@gmail.com, ²linda.lindahas@gmail.com, ³guntoro_mining@yahoo.com

Abstract. Air Table it is a tool based on the mineral concentration of gravity concentration. Style-style that works on the tables of the air is the force of gravity, friction and thrust media (influenced by air is exhaled at the table). A problem that often occurs is yet to achieve increased levels of 70% Sn which is caused by variable tool on the table to air. Based on these problems, then the goal in this research are as follows: (1) to know the process of processing the ore of Tin in Tin Ore Processing Center Pemali. (2) to get the rate of bait, setting the interval measure hopper and a splitter on the optimum table air in achieving levels of cassiterite 70% Sn (3) to find out the correlation between the rate of bait, the interval measure hopper and splitter to increased levels of the mineral cassiterite. (4) to find out the most influential variables between the rate of bait, the interval measure hopper and splitter to increased levels of the mineral cassiterite. The procedure of this research include: the study of literature, observation, data retrieval, processing and analysis of data. The results of this study are: (1) processing of tin ore in Pemali Tin Ore Processing Center is done with 2 (two) process: wet processing and dry processing. (2) obtained by setting the splitter cassiterite range 0.2-1.1 cm, splitter tailings range 0.5-2 cm, the rate of bait 873 kg/h and measuring hose hopper 70° able to produce cassiterite with 70% Sn (3) there is a positive relationship between the rate of bait against levels of cassiterite which included the criteria is very strong, there is a positive relationship between the interval of measuring hopper towards the levels of cassiterite which included the criteria is very strong and there is a negative relationship between splitter against the levels of cassiterite which included enough criteria. (4) obtained as 1 (one) the most influential variables against levels of cassiterite value-based significance is the interval of measuring hopper.

Keywords: Cassiterite, Levels, Variable

Abstrak. *Air table* merupakan suatu alat konsentrasi mineral yang berdasarkan *gravity concentration*. Gaya-gaya yang bekerja pada *air table* adalah gaya gravitasi, gaya gesek dan gaya dorong media (dipengaruhi oleh udara yang dihembuskan pada meja). Permasalahan yang sering terjadi adalah belum tercapainya peningkatan kadar sebesar 70% Sn yang diakibatkan oleh variabel alat pada *air table*. Berdasarkan permasalahan tersebut, maka tujuan dalam penelitian ini adalah sebagai berikut: (1) Untuk mengetahui proses pengolahan bijih timah di Pusat Pengolahan Bijih Timah Pemali. (2) Untuk mendapatkan pengaturan laju umpan, selang ukur *hopper* dan *splitter* yang optimum pada *air table* dalam mencapai kadar *cassiterite* sebesar 70% Sn. (3) Untuk mengetahui korelasi antara laju umpan, selang ukur *hopper* dan *splitter* terhadap peningkatan kadar mineral *cassiterite*. (4) Untuk mengetahui variabel yang paling berpengaruh antara laju umpan, selang ukur *hopper* dan *splitter* terhadap peningkatan kadar mineral *cassiterite*. Prosedur penelitian ini meliputi: studi literatur, observasi, pengambilan data, pengolahan dan analisis data. Hasil dari penelitian ini adalah: (1) Proses pengolahan bijih timah di Pusat Pengolahan Bijih Timah Pemali dilakukan dengan 2 (dua) proses yaitu: proses pengolahan basah dan proses pengolahan kering. (2) Didapatkan pengaturan *splitter cassiterite range* 0,2-1,1 cm, *splitter tailing range* 0,5-2 cm, laju umpan 873 kg/jam dan selang ukur *hopper* 70° mampu menghasilkan *cassiterite* dengan kadar 70% Sn. (3) Terdapat hubungan positif antara laju umpan terhadap kadar *cassiterite* yang termasuk kriteria sangat kuat, terdapat hubungan positif antara selang ukur *hopper* terhadap kadar *cassiterite* yang termasuk kriteria sangat kuat dan terdapat hubungan negatif antara *splitter* terhadap kadar *cassiterite* yang termasuk kriteria cukup. (4) Didapatkan 1 (satu) variabel yang paling berpengaruh terhadap kadar *cassiterite* berdasarkan nilai signifikannya adalah selang ukur *hopper*.

Kata Kunci: *Cassiterite*, Kadar, Variabel