

## RINGKASAN

PT. Sinar Terang Mandiri yang merupakan kontraktor dari PT. Weda Bay Nickel adalah perusahaan yang bergerak di bidang pertambangan bijih nikel. PT. Sinar Terang Mandiri menggunakan sistem penambangan tambang terbuka (*surface mining*) dan metode *open pit*. Kegiatan utama pada penambangan tersebut terdiri dari pengupasan lapisan tanah penutup, pembongkaran, pemuatan dan pengangkutan bijih nikel dari lokasi penambangan *Pit Kaorahai-6* menuju *Grizzly*, dilanjutkan pemuatan dan pengangkutan menuju *Temporary Ore Stockpile (TOS)*.

Pengangkutan bijih nikel menuju *Grizzly* dilakukan untuk pemisahan material dengan *boulder* yang berukuran lebih dari 30 cm, hasil dari pemisahan material tersebut akan diangkat dan diletakkan di *Temporary Ore Stockpile (TOS)*. Alat mekanis yang dibutuhkan dalam kegiatan pengangkutan bijih nikel dari *Grizzly* menuju TOS adalah alat gali muat dan alat angkut. Kombinasi alat mekanis yang digunakan adalah 1 alat gali muat *excavator Hitachi Zaxis 350* dan 3 alat angkut *dump truck Hino 500*.

Permasalahan yang terjadi adalah belum tercapainya target produktivitas perusahaan untuk alat muat *excavator Hitachi Zaxis 350* sebesar 180 BCM/jam sedangkan berdasarkan hasil penelitian produktivitas aktual adalah 177,60 BCM/jam dan untuk alat angkut *dump truck Hino 500* sebesar 171 BCM/jam berdasarkan hasil penelitian, kemampuan produktivitas aktual adalah 153,44 BCM/jam. Maka dari itu, perlu dilakukan optimalisasi kerja alat muat dan alat angkut sehingga dapat mencapai target produktivitas yang diinginkan.

Faktor-faktor yang menyebabkan tidak tercapainya target produktivitas alat muat dan alat angkut adalah adanya kehilangan waktu kerja yang disebabkan oleh terlambat memulai kerja, istirahat terlalu lama, istirahat lebih awal, berhenti berkerja lebih awal, *sampling*, *safety talk* dan persiapan, kerusakan alat, hujan, perbaikan jalan, perbaikan *loading point*, dan *refueling*. Kehilangan waktu kerja ini mengakibatkan efisiensi kerja menjadi rendah. Target efisiensi kerja yang ditetapkan dari perusahaan untuk alat muat dan angkut sebesar 70%, namun pada kondisi di lapangan untuk alat muat sebesar 66% dan alat angkut sebesar 66%.

Upaya peningkatan produktivitas alat mekanis dapat dilakukan dengan cara perbaikan waktu kerja efektif, dengan meminimalkan hambatan kerja yang dapat ditekan. Setelah dilakukan peningkatan, efisiensi kerja alat muat *excavator Hitachi Zaxis 350* meningkat dari 66% menjadi 73% dan untuk alat angkut *dump truck Hino 500* dari 66% menjadi 74%. Setelah dilakukan peningkatan efisiensi kerja, maka produktivitas alat muat dapat dioptimalkan dari 171 BCM/jam menjadi 196,43 BCM/jam sudah mencapai target produktivitas dan untuk alat angkut dari 153,44 BCM/jam menjadi 172,04 BCM/jam sudah mencapai target produktivitas.

## **ABSTRACT**

*PT. Sinar Terang Mandiri which is a kontraktor of PT. Weda bay Nickel is a company engaged in nickel mining. PT. Sinar Terang Mandiri uses surface mining system and open pit method. Main activities in mining consist of overburden removal, ore getting, loading and hauling from Kaorahai-6 to Grizzly continued with loading and hauling from Grizzly to Temporary Ore Stockpile (TOS).*

*Loading and hauling from Pit to Grizzly aiming for separate ore from boulder which size more than 30 cm and the result will be hauled to Temporary Ore Stockpile (TOS). Mechanical tools needed in this activities are digger and conveyance. Combination of mechanical tools in pit lused 1 excavator Hitachi Zaxis 350 and 3 Dump Truck Hino 500.*

*The problem that occurs is that the company's productivity target has not been achieved for the Hitachi Zaxis 350 excavator loading equipment of 180 BCM/hour while based on the results of research the actual productivity is 177.60 BCM/hour and for the Hino 500 dump truck transportation of 171 BCM/hour based on the research results. , the actual productivity capability is 153.44 BCM/hour. Therefore, it is necessary to optimize the work of loading and transportation equipment so that it can achieve the desired productivity target.*

*The factors that cause the productivity targets for loading and conveying equipment to be not achieved are the loss of working time caused by being late for work, taking too long breaks, resting early, stopping work early, sampling, safety talk and preparation, equipment damage, rain. , road repairs, loading point improvements, and refueling. This loss of working time results in low work efficiency. The work efficiency target set by the company for loading and transporting equipment is 70%, but in field conditions it is 66% for loading equipment and 66% for conveyance.*

*Efforts to increase the productivity of mechanical equipment can be done by improving effective working time, by minimizing work barriers that can be suppressed. After the improvement, the work efficiency of the Hitachi Zaxis 350 excavator loading equipment increased from 66% to 73% and for the Hino 500 dump truck from 66% to 74%. After increasing work efficiency, the productivity of loading equipment can be optimized from 171 BCM/hour to 196.43 BCM/hour has reached the productivity target and for transportation equipment from 153.44 BCM/hour to 172.04 BCM/hour has reached the productivity target .*

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