

RINGKASAN

Saat ini, perusahaan memiliki proyek baru yang dilakukan dengan pengelola banjir di Bandara *Yogya International* dan menyuplai andesit pada PT. Tristar. Cadangan yang terdapat di kuari selatan akan habis maka kuari utara sudah mulai dilakukan kegiatan penambangan dengan target produksi 105.000 BCM/tahun.

Lokasi penambangan memiliki topografi yang curam, jalan angkut yang berdebu, terdapat 9 segmen jalan angkut yang memiliki kemiringan yang melebihi 12%, jalan angkut tidak memiliki *safety berm* dan *cross slope*, waktu kerja yang tersedia 8 jam/hari serta belum diketahuinya jumlah kebutuhan alat muat dan alat angkut yang harus digunakan agar mencapai target produksi. Hal tersebut perlu dilakukan analisis terhadap faktor-faktor yang mempengaruhi kegiatan pemuatan, pengangkutan, menghitung produksi serta keserasian kerja antara alat muat dan alat angkut.

Kegiatan pemuatan dan pengangkutan menggunakan *Excavator* Komatsu PC200-8 dan *Dump Truck* Mitsubishi Colt Diesel 136 PS. Hasil penelitian menunjukkan waktu edar alat muat 23,36 detik dengan efisiensi 66,56 % dan waktu edar alat angkut 1689,6 detik dengan efisiensi 66,05%.

Hasil perhitungan produksi dari alat muat 68,93 LCM/jam dan alat angkut 9,46 LCM/jam. Maka, kebutuhan alat muat 1 unit dan alat angkut 7 unit dengan nilai keserasian kerja 0,96 dan waktu tunggu alat muat 7,77 detik.

ABSTRACT

Currently, company has a new projects being done in cooperation with the flood manager of Yogyakarta International Airport and also supplying Andesite to PT. Tristar. Reserves of the southern quarry was running out, so mining activities was began on the northern quarry with a target production of 105.000 BCM/year.

The mining site has a steep topography, dusty road conditions and there was 9 road segments with their respective road grades exceeding 12%, hauling road hasn't the safety berm and cross slope, available working time 8 hours/day and the number of loaders and haulers needed to achieve target production has yet to be known. It needed to analyzed the factors that influences loading activities, hauling activities, calculate production and the match factor of loader and hauler.

Loading and hauling carried out by using the Komatsu PC200-8 Excavator and the Mitsubishi Colt Diesel 136 PS Dump Truck. Studies showed that the cycle time of the excavator as 23.36 seconds with an efficiency of 66.56% and cycle time of 1689.6 seconds with an efficiency of 66.05%.

The result of production calculation from the loader was 68.93 LCM/hour and 9.46 LCM/hour for the hauler. Therefore, the number of loader and haulers was 1 unit and 7 units with a match factor of 0.96 and the waiting time for the loader was 7.77 seconds.

Keywords: excavator, dumptruck, production, match factor.