

ABSTRAK

UPAYA PENINGKATAN *TRAVEL SPEED* GUNA MENINGKATKAN PRODUKSI *OVERBURDEN REMOVAL* DI PIT PNS PT KALTIM PRIMA COAL

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Kegiatan *overburden removal* pada tambang terbuka sangat bergantung pada kinerja alat angkut, khususnya *travel speed* yang berpengaruh langsung terhadap *cycle time* dan produktivitas. PT Kaltim Prima Coal menetapkan target *travel speed* alat angkut sebesar 18,5 km/jam, namun pada kondisi aktual di Pit Pinang South (PNS) target tersebut belum tercapai akibat kondisi geometri jalan angkut yang belum optimal, tingginya hambatan jalan, serta kepadatan lalu lintas. Kondisi ini menyebabkan waktu edar alat angkut meningkat dan produksi *overburden removal* belum optimal.

Upaya peningkatan *travel speed* yaitu dengan melakukan perbaikan geometri jalan, seperti perbaikan lebar jalan lurus dan tikungan untuk menghindari antrian alat angkut, perbaikan *grade* jalan, perbaikan radius tikungan, *superelevasi*, dan perbaikan *cross slope* untuk menghindari genangan air pada jalan angkut yang dapat menyebabkan kerusakan material jalan angkut. Selain itu, dilakukan perbaikan hambatan jalan yang meliputi *rolling resistance* dan *grade resistance* agar *travel speed* alat angkut optimal serta dilakukan analisis terhadap *traffic density* untuk mengetahui jalan yang memiliki kepadatan belum sesuai standar yang dapat mengakibatkan *travel speed* tidak optimal

Pada Jalan Sagitarius, *travel speed* meningkat dari 15,26 km/jam menjadi 30,84 km/jam dengan produktivitas meningkat dari 219 BCM/jam menjadi 297 BCM/jam. Pada Jalan Orion, *travel speed* meningkat dari 16,74 km/jam menjadi 31,58 km/jam dan produktivitas meningkat dari 287 BCM/jam menjadi 459 BCM/jam. Sementara itu, pada Jalan Taurus, *travel speed* meningkat dari 14,87 km/jam menjadi 32,42 km/jam dengan produktivitas meningkat dari 436 BCM/jam menjadi 769 BCM/jam. Perbaikan geometri jalan angkut, peningkatan *rimpull*, serta pengendalian kepadatan lalu lintas terbukti mampu mencapai target *travel speed* perusahaan sebesar 18,5 km/jam, menurunkan *cycle time*, dan meningkatkan produktivitas *overburden removal* secara signifikan.

Kata Kunci: jalan angkut, *travel speed*, produktivitas, *overburden removal*, perbaikan jalan.

ABSTRACT

EFFORTS TO IMPROVE TRAVEL SPEED IN ORDER TO INCREASE OVERBURDEN REMOVAL PRODUCTION AT THE PNS PIT OF PT KALTIM PRIMA COAL

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Overburden removal activities in open-pit mining are highly dependent on haul truck performance, particularly travel speed, which directly affects cycle time and productivity. PT Kaltim Prima Coal has established a target haul truck travel speed of 18.5 km/h; however, under actual conditions at the Pinang South (PNS) Pit, this target had not been achieved due to suboptimal haul road geometry, high road resistance, and traffic density. These conditions increased the haul truck cycle time and resulted in suboptimal overburden removal production.

Efforts to increase travel speed were carried out through haul road geometry improvements, including adjustments to straight and curve road width to prevent truck queuing, grade improvement, curve radius correction, superelevation implementation, and cross slope improvement to avoid water ponding that may damage the road surface. In addition, road resistance improvements were conducted by reducing rolling resistance and grade resistance to optimize haul truck speed, as well as traffic density analysis to identify road segments whose vehicle density did not meet operational standards and caused speed reduction.

On the Sagitarius road, travel speed increased from 15.26 km/h to 30.84 km/h, On the Sagitarius road, travel speed increased from 15.26 km/h to 30.84 km/h with productivity rising from 219 BCM/h to 297 BCM/h. On the Orion road, travel speed increased from 16.74 km/h to 31.58 km/h and productivity improved from 287 BCM/h to 459 BCM/h. Meanwhile, on the Taurus road, travel speed increased from 14.87 km/h to 32.42 km/h with productivity increasing from 436 BCM/h to 769 BCM/h. Haul road geometry improvement, increased rimpull capability, and traffic density control successfully achieved the company travel speed target of 18.5 km/h, reduced cycle time, and significantly improved overburden removal productivity.

Keywords: haul road, travel speed, productivity, overburden removal, road improvement.