ABSTRACK

PT. Kaltim Prima Coal is one of the coal mining companies with a mining area of 61,543 Ha, located in Sangatta City, and Bengalon, East Kutai Regency, East Kalimantan Province. The mining system used is surface mining with strip mine method. Overburden hauling activities are carried out using Komatsu HD 785-7 dump truck. The haul road distance from loading point to disposal is 2.70 km.

The problem that arises is that there is excessive fuel consumption in the transportation of overburden for the Komatsu HD 785-7 dump truck which exceeds the usage reference of 78 litre/hour. The actual fuel consumption of the Komatsu HD 785-7 dump truck on the Inul East haul road reaches 80 litre/hour. This affects the level of fuel consumption. The things that affect the level of fuel consumption are the slope of the haul road, the workload of the equipment, the slope, and, the sagging of the haul road transporting the overburden to the disposal. Based on observations of actual haul road conditions, there are haul road slopes that exceed the company's reference of 8% and haul road conditions that still have more than 5 cm of sagging (medium severity).

An analysis is conducted to determine the influence of haul road conditions on the fuel consumption of the transport equipment. After the calculations, it is found that for every additional 1 cm of subsidence for rolling resistance, fuel consumption will increase by 1,92 liters/hour, while for every additional 1% haul road grade, fuel consumption will increase by 3,26 liters/hour. The theoretical calculation of fuel consumption uses the pull calculation. It is known that the fuel consumption on the haul roads based on rimpull calculation is 78,78 liters/hour.

After the improvement of the haul road geometry, including widening the haul road and haul road subsidence ≤ 5 cm, as well as haul road slope ≤ 8%, fuel consumption, and fuel ratio will decrease. Based on the calculations of these recommendations, the fuel consumption using the rimpull calculation on the haul roads is 77,14 liters/hour.