

ABSTRACT

Coal mining activities of PT. Bukit Asam (Persero) Tbk at the location of Tambang Air Laya (TAL) using continuous mining system with its main mining equipment Bucket Wheel Excavators (BWE). Unloading of coal is done by drilling and blasting.

BWE production targets in the TAL site is 119.405 tonnes in July or 5.427,50 tons / day, but in fact only able to meet a production of 105.742 tons, 4.806,45 tons / day, so that production targets were not reached. BWE production depends on the amount of volume uncovered by blasting activities. BWE production target amount has not been achieved due to the detonation of less production and the percentage of boulder size ≥ 80 cm is produced is still above 10% which can BWE performance is compromised, it is necessary to evaluate the drilling and blasting activities.

Geometry blasting now is burden 4 m, 8 m spacing, stemming 3 m, hole depth 5 m, charge length 2 m, high levels of 6 m, average number of holes explode is 21 holes and the powder factor obtained is $0,14 \text{ kg/m}^3$. Percentage of boulder size ≥ 80 cm resulting from the current geometry is 13,25% (real) and 13,9% (Kuznetsov method).

Based on the results of studies using the formula R.L. Ash obtained the same geometry on the burden and spacing except at stemming to 2,8 m and charge length 2,2 m and a minimum number of holes that must be made to meet the production target of 27 holes. Using geometry of the proposal, obtained by the powder factor is $0,15 \text{ kg/m}^3$, and the resulting production is 5.616 tons / day so that the desired production target can be achieved. Fragmentation-sized of rock ≥ 80 cm resulting from the powder factor is 9,20% (Kuznetsov method), thus according to the expected number of boulder $< 10\%$.