ABSTRACT

PT. Mitra Alam Persada (MAP) is a company that moves in various services of mining sector that is rental instrument, overburden removal, overburden loading, overburden hauling, coal excavation, coal loading, coal hauling and mine planning. PT. MAP is one of contractor company that handle mine projects of PT. Trubaindo Coal Mining (TCM) which is located in Kutai Barat, Kalimantan Timur.

PT. TCM devided into two blocks of mine area, that is North Block and South Block. PT.MAP is located in South Block of PT.TCM, precisely in Pit 3000 Block 03. The coal condition in South Block is multiple seams and the thickness of the coal is between 2,50-3 m with 30^0 of slope from horizontal plane. Mining system that is applied in PT. MAP jobsite PT. TCM is surface mine system. The coal production target of PT. MAP is 85.000 ton in August 2015 and the overburden production target is 620.000 BCM in August 2015.

On observations made in the field found the problems associated with rock fragmentation size as blasting results. The target's percentage of rock fragmentation after blasting with size >80 cm (boulder) is less than 20% from blasting rock material. In actual condition, the rock fragmentation with size >80 cm percentage as results from five times blasting in PT. MAP is more than 20% which is consist of 28,77% in 12nd August 2015; 28,33% in 14th August 2015; 29,17% in 18th August 2015; 29,37% in 22nd August 2015; 30,41% in 26th August 2015. In some experiments that have been done in 27th August 2015 there are 20,93% of boulder and in 31st August 2015 there are 19% of boulder.

Blast geometry that applied by PT. MAP which have 7 m of burden and 8 m of spacing with8-8,5 m of drill hole length, can not achieve the target of rock fragmentation with size >80 cm percentage which is less than 20%. Based on blast geometry calculation according R.L. Ash (1967) and increasing the area of energy coverage, blast geometry that should be applied is 6 m of burden, 7 m of spacing, 4,2 m of stemming, 4,6 m of powder charge, 9 m of drill hole length and increasing powder factor from 0,22 kg/m^3 becomes 0,32 kg/m^3. Simulation of recommendation blast geometry using Kuz-Ram method produce 14,03% of rock fragmentation after blasting with size >80 cm and 14,7% of corrected rock fragmentation after blasting with size >80 cm.