

## ABSTRACT

PT. Cakrawala Semesta Perkasa is an andesite mining company located in the Sikasur Village, Belik Subdistrict, Pemalang District, Central Java Province. Materials of andesite sufficient the feed of the crusher on site Sikasur obtained by direct mining in the same location.

The process of andesite crushing at PT. Cakrawala Semesta Perkasa used a Jaw Crusher PE 400x600 Shan-Bao then on the secondary crushing using a Vertical Shaft Fine Impactor PLF-1250. The product such as crushed stone with a size of  $-30 + 12,5\text{mm}$ ,  $-12,5 + 5\text{mm}$ , and  $-5\text{mm}$ .

In the crushing process has the problems in the crusher unit that is not fulfillment of the planned production target 250 tons/day total number of products. Nowadays the total production is 158 tons/day and production targets at fraction  $-30 + 12,5\text{mm}$  is 53.36 tons/day. They have not accomplished market demand. Therefore, the production of  $-30 + 12,5\text{mm}$  fraction may increase to 125 tons/day or 50%, and the production of  $-5\text{mm}$  fraction decrease until 50 ton / day or 20%.

Nowadays the evaluation results of the value reduction ratio at 80% in the jaw crusher and vertical shaft fine impactor are 3.09 and 6.24. The magnitude of the load distribution is 19.50 tons/hour while the total feed is 24.52 tons/hour thus the value of load distribution ratio is 79.52%.

The alternative repairs is optimizing the effective working time by pushing the problems of employment in the production process crusher unit, add of a feed up to 35 tons/hour, the jaw crusher is installed closed setting of 90 mm, and vertical shaft fine impactor installed closed setting by 22 mm.

The results are already accomplished the target production of 250 tons/day with production 253.75 tons/day. The production of fraction  $-30 + 12,5\text{mm}$  can be improved and accomplished production targets 125 tons/day or 50% with the results of alternative production reached 131.26 tons/day, or 52.5%, the production of fraction  $-12,5 + 5\text{mm}$  resulted 64.25 tons/day or 25.7% and the production of fraction  $-5\text{mm}$  decreased and achieved production targets 50 tons/day or 20% with the results of alternative production reached 44.61 tons/day or 17.84%. This is compliance with the targets of total production and the results of each production of fraction.