

## RINGKASAN

PT.Gawi Maju Karsa (PT.GMK) merupakan salah satu perusahaan skala nasional yang bergerak dibidang penambangan batuandesit. PT.GMK berada di Desa Dadirejo, Kecamatan Bagelen, Kabupaten Purworejo, Provinsi Jawa Tengah, PT.GMK memiliki kerjasama dengan kontraktor proyek pembangunan bandara *New Yogyakarta International Airport* (NYIA) dan proyek pembangunan Bendungan Bener.

PT.GMK memiliki target produksi penambangan batuandesit sebesar 900.000 LCM/tahun. Dengan rencana gilir kerja (*shift*), 2 gilir kerja (*shift*) dalam satu hari kerja, dalam satu gilir kerja (*shift*) terdapat 8 jam kerja, dengan waktu pergantian gilir kerja (*shift*) selama satu jam, maka total jam kerja adalah 16 jam kerja/hari. Dengan jumlah hari kerja dalam satu tahun terdapat 300 hari kerja, maka target produksi penambangan dalam satu jam adalah 187,5 LCM/jam. PT. GMK memulai membangun pabrik peremuk batuandesit dengan tujuan memenuhi permintaan batu andest, target produksi pabrik peremuk sebesar 400 ton/jam, dengan fraksi ukuran produk yang diinginkan yaitu – 30 + 20mm sebesar  $\geq 35\%$ , - 20 + 10mm sebesar  $\leq 35\%$ , -10 + 5mm sebesar  $\leq 15\%$ , dan -5mm. sebesar  $\leq 15\%$ . Dalam pembangunan pabrik peremuk baru, diperlukan rancangan pabrik peremuk agar dapat memilih peralatan pabrik peremuk sesuai dengan target produksi dan distribusi ukuran umpan dan merancang diagram alir pabrik peremuk serta menghitung *material balance* dengan target distribusi ukuran – 30 + 20mm sebesar  $\geq 35\%$ , -20 + 10mm sebesar  $\leq 35\%$ , -10 + 5mm sebesar  $\leq 15\%$ , dan -5mm sebesar  $\leq 15\%$ .

Peralatan pabrik peremuk yang dipilih antara lain *Hopper*, *Vibrating grizzly feeder* merk *Metso VF561-2V<sup>TM</sup>*, *Single deck vibrating screen* merk *Metso Premier Inclined Screen CVB201<sup>TM</sup>*, *Jaw crusher* merk *Metso Nordberg C130<sup>TM</sup>*, *Cone crusher I* merk *Metso Nordberg HP400<sup>TM</sup>*, *Cone crusher II* merk *Metso Nordberg HP400<sup>TM</sup>*, *Double deck vibrating screen (I)* merk *Metso Premier Inclined Screen CVB202<sup>TM</sup>*, *Double deck vibrating screen (II)* merk *Metso Premier Inclined Screen CVB102<sup>TM</sup>*, *Belt conveyor* merk *Metso Nordberg TBC*. Distribusi produk yang diinginkan -30 + 20mm sebanyak 147,6017 ton/jam, -20 + 10mm sebanyak 135,65756 ton/jam, -10 + 5mm sebanyak 60,4626 ton/jam, dan ukuran -5mm sebanyak 59,4115 ton/jam.

## SUMMARY

PT. Gawi Maju Karsa (PT. GMK) is a national scale company engaged in andesite stone mining. PT. GMK is located in Dadirejo Village, Bagelen District, Purworejo Regency, Central Java Province, PT. GMK has a partnership with the airport construction project contractor of New Yogyakarta International Airport (NYIA) and the Bener Dam construction project.

PT. GMK has an andesite mining production target of 900,000 LCM / year. With the plan of work shifts, 2 shifts in one working day, in one shift there are 8 working hours, with shift time for one hour, the total working hours are 16 hours work / day. With the number of working days in a year there are 300 working days, the mining production target in one hour is 187.5 LCM / hour. PT. GMK began building andesite stone crushing plants with the aim of meeting the demand for andesite stones, crusher plant production target of 400 tons / hour, with the desired product size fraction of - 30 + 20mm of  $\geq 35\%$ , -20 + 10mm of  $\leq 35\%$ , - 10 + 5mm of  $\leq 15\%$ , and -5mm. amounting to  $\leq 15\%$ . In the construction of a new crusher plant, a crusher plant design is needed in order to be able to choose crusher plant equipment in accordance with the production target and feed size distribution and design the flow chart of the crusher plant and calculate the material balance with the size distribution target - 30 + 20mm of  $\geq 35\%$ , -20 + 10mm for  $\leq 35\%$ , -10 + 5mm for  $\leq 15\%$ , and -5mm. amounting to  $\leq 15\%$ .

The selected crusher plant equipment included Hopper, Vibrating grizzly feeder Metso VF561-2V<sup>TM</sup> brand, Single deck vibrating screen brand Metso Premier Inclined Screen CVB201<sup>TM</sup>, Jaw crusher Metso Nordberg C130<sup>TM</sup> brand, Cone crusher I Metso Nordberg HP400<sup>TM</sup> brand, Cone crusher II brand Metso Nordberg HP400<sup>TM</sup>, Jaw crusher Metso Nordberg C130<sup>TM</sup> brand, Cone crusher I Metso Nordberg HP400<sup>TM</sup> brand, Cone crusher II brand Metso Nordberg HP400<sup>TM</sup>, Jaw crusher Double deck vibrating screen (I) brand Metso Premier Inclined Screen CVB202<sup>TM</sup>, Double deck vibrating screen (II) brand Metso Premier Inclined Screen CVB102<sup>TM</sup>, Belt conveyor brand Metso Nordberg TBC. The desired product distribution is -30 + 20mm as much as 147.6017 tons / hour, -20 + 10mm as much as 135.65756 tons / hour, -10 + 5mm as much as 60.4626 tons / hour, and the -5mm size as much as 59.4115 tons / hour.