

## RINGKASAN

PT. Dewa Ruci Mandiri terletak di antara Desa Sekikilan dan Desa Seumat, Kecamatan Sebuku, Kabupaten Nunukan, Provinsi Kalimantan Utara memiliki IUP seluas 149,9 Ha. Sistem Penambangan yang dilakukan menggunakan sistem tambang terbuka (*Surface Mining*). Salah satu pendukung dari usaha penambangan adalah penyaliran yang berfungsi untuk mencegah masuknya air (*Mine Drainage*) dan mengeluarkan air yang telah masuk menggenangi daerah penambangan (*Mine Dewatering*).

Berdasarkan analisis data curah hujan tahun 2003-2013, diperoleh curah hujan rencana sebesar 118,89 mm/hari, intensitas curah hujan 41,2 mm/jam dengan periode ulang hujan 3 tahun dan resiko hidrologi adalah sebesar 86,9%. Daerah Tangkapan Hujan (DTH) lokasi penelitian dibagi menjadi 4 DTH, yaitu DTH I 0,0155 km<sup>2</sup>, DTH II 0,1077 km<sup>2</sup>, DTH III 0,0360 km<sup>2</sup>, DTH IV 0,0760 km<sup>2</sup>. Debit air pada setiap DTH adalah DTH I 0,054 m<sup>3</sup>/detik, DTH II 0,44m<sup>3</sup>/detik, DTH III 0,12 m<sup>3</sup>/detik, DTH IV 0,46 m<sup>3</sup>/detik. Saluran terbuka berfungsi untuk menampung limpasan permukaan pada suatu daerah dan mengalirkannya ke tempat penampungan air, dengan dimensi saluran terbuka sebagai berikut:

- a. Saluran I B= 1 m; b = 0,5 m; d = 0,41 m; h = 0,5 m; a = 0,6 m,
- b. Saluran II B = 1,35 m; b = 0,7 m; d = 0,59 m; h = 0,7 m; a = 0,8 m,
- c. Saluran III B= 1,4 m; b = 0,68 m; d = 0,59 m; h = 0,7 m; a = 0,8 m.

kemudian untuk air yang masuk kedalam bukaan tambang dialirkan secara alami ke dalam sumuran dengan dimensi sumuran hasil pengolahan data yaitu 2415 m<sup>3</sup>. Selanjutnya air yang terdapat di sumuran dipompa menuju kolam pengendapan, jumlah pompa yang digunakan ada 3 pompa *Yanmar YSP-80E*, dengan lamanya waktu pemompaan selama 13 jam. Dimensi Kolam pengendapan *pit* 4 terdiri dari tiga kompartemen dengan volume 480 m<sup>3</sup> dan waktu pengerukan 239 hari sekali.

## ABSTRACT

Dewa Ruci Mandiri Company Independent located between the village Sekikilan Seumat, Sebuku, Nunukan, North Kalimantan province has IUP of 149.9 ha. Mining system were performed using open pit system (Surface Mining). One supporter of mining is Drainage which serves to prevent the ingress of water (Mine Drainage) and remove the water that has entered the area flooded mine (Mine Dewatering) Drainage system is an attempt to prevent the ingress of water or to remove water that has entered the mining area which can interfere with mining activities. Therefore, it is necessary to study Drainage system existing mines. Based on the analysis of rainfall data of 2003-2013, obtained by precipitation plan of 118.89 mm / day, rainfall intensity of 41.2 mm/hour with a 3-year return period rainfall and hydrological risks of 86,9%. Catchment Rain (DTH) at the study site is divided into 4 DTH, ie DTH I 0,0155 km<sup>2</sup>, 0.1077 km<sup>2</sup> DTH II, III 0.0360 km<sup>2</sup> DTH, DTH IV 0.0760 km<sup>2</sup>. Water discharge at any DTH DTH is the first 0.054 m<sup>3</sup> / sec, DTH II 0.44 m<sup>3</sup> / sec, DTH III 0.12 m<sup>3</sup> / sec, DTH IV 0.46 m<sup>3</sup> / sec. Open channel serves to accommodate runoff in an area and flow into water reservoirs, with an open channel dimensions as follows :

- a. Channel I B = 1 m; b = 0.5 m; d = 0.41m; h = 0.5 m; a = 0.6 m,
- b. Channel II B = 1.35 m; b = 0.7 m; d = 0.59 m; h = 0.7 m; a = 0.8 m,
- c. Channel III B = 1.4 m; b = 0.68 m; d = 0.59 m; h = 0.7 m; a = 0.8 m.

then to the water that goes into the mine openings flowed naturally into the wells with dimensions of pitting the data processing that is 2415 m<sup>3</sup>. Furthermore, the water contained in the wells is pumped into settling ponds, the number of pumps which are used there are 3 pumps Yanmar YSP-80E, with the length of time pumping for 13 hours. Sump Dimensions pit 4 consists of three compartments with a volume of 480 m<sup>3</sup> and 230 days to dredging.