

ABSTRACT

PT. Pesona Khatulistiwa Nusantara in sekayan block, administratively located in the district of Tanjung Selor and east Tanjung Palas, Bulungan, North Borneo. The design of the system implemented for handling water problems, is a combination of mine drainage and mine dewatering. Based on the analysis of rainfall data, year 2003 – 2012 obtained rainfall plan is 110,31 mm/day, Rainfall intensity 38,24 mm/hour with a return period rainfall is 3 years and hydrology risk by 99.72%. Daerah tangkapan hujan pada lokasi penelitian dibagi menjadi 5 daerah tangkapan h area in sites divided into 5 catchment area, they are DTH I = 0,4 km², DTH II = 0,62 km², DTH III = 0,089 km², Pit A = 0,64 km², Pit B = 0,41 km², with each water flow DTH I (West Pit A) around 3,83 m³/sec, DTH II (South Pit A) around 4,61 m³/sec, DTH III (South West Pit B) around 0,57 m³/sec, Pit A around 6,12 m³/sec, Pit B around 3,92 m³/sec

To prevent that water does not enter the mining area, then made an open channel around mine openings and open channel for pump flow. Open channel dimensions are:

A. Channel I : B = 2 m; b = 1 m; d = 0,9 m; h = 1 m; a = 1 m ; B. Channel II : B = 3,3 m; b = 1,7 m; d = 1,4 m; h = 1,7 m; a = 1,6 m ; C. Channel III : B = 1,1 m; b = 0,5 m; d = 0,49 m; h = 0,5 m; a = 0,5 m. D. Channel IV ; B = 1,6 m; b = 0,8 m ; d = 0,68 m ; h = 0,8 m; a = 0,8 m

The sump sizes For each dimension ; Pit A : Sump Long = 100 m ; Sump Wide = 76 m ; Sump Depth = 5, Pit B : Sump Long = 100 ; Sump Wide = 46 m ; Sump Depth = 5 m, DTH I (mine out); Sump Long = 100 m; Sump Wide = 85 m ; Sump Depth = 5 m. The recommendation is to use 3 pumps Multiflow-420. The dimension of the Settling Pond is : Pond's Wide = 42 m, Pond's Long = 56 m, Pond's Depth = 5 m, Partition's wide (a) = 5 m, Partition's long (a) = 40 m, Partition's Depth (a) = 5 m, Partition's wide (b) = 5 m, Partition's long (b) = 40 m, Partition's Depth b = 5 m. Settling Pond's wide around 1758 m², volume = 8790 m³, The work of mud digging is once per 12 months