

ABSTRACT

UC-East Pit is opening a mine owned by PT. Jorong Barutama Greston done by PT. Borneo Alam Semesta as the main contractor. This pit is located in the village of Swarangan, District Jorong, Tanah Laut, South Kalimantan Province. Where the system is applied to the handling of the problem is a combination of mine drainage is an effort to prevent water from entering into the area of mining and mine dewatering which remove the water that goes into the mining area is by making an open drain, sump, pumping method and settling ponds. At UC-East Pit, a source of water that enters the mine comes from rain water directly into the mine openings and water run off from the catchment area the open pit. Currently there is no open channel design that supports the mining of coal mines in the UC-East Pit in 2016 and 2017.

Based on the analysis of rainfall data in 2004 – 2013, rainfall was obtained plan is 139,22 mm/day, rainfall intensity 48,26 mm/hour with a 2 year return period rainfall and hydrological risks by 87,50 %. The total catchment area for rain is divided into four catchments, namely DTH I = 0,30 Km², DTH II = 0,82 Km², DTH III = 0,43 Km² and DTH Settling pond = 0,014 Km². Debit rain at all catchment area is, DTH I = 6.516 m³/hour, DTH II = 23.760 m³/hour, DTH III = 10.764 m³/hour and DTH Settling pond = 248,4 m³/hour.

To prevent that water does not get into the mining area in an open channel for around mine openings. Next to enter the open pit water UC-East Pit naturally discharged into the sump. Open channel dimensions are as follows:

Channel I (North UC-East Pit) : a = 1,3 m; b = 1,2 m; B = 2,3 m; h = 1,2 m; d = 0,99 m.

Channel II (South UC-East Pit) : a = 1,6 m; b = 1,4 m; B = 2,8 m; h = 1,4 m; d = 1,20 m.

Sump dimensions are as follows:

Volume = 37.573 m³; the length of surface = 113 m; the width of surface = 28 m; length of base = 105 m; width of base = 20 m; depth = 7m and then, the water in the sump is pumped into settling ponds. Pumps used is combinations from pump Multiflo MF420E and Multiflo MF390. Settling ponds located in UC-East Pit and the dimensionless length 25 m, width 15 m, and a depth of 3 m. whereas for mud dredging done every 63 days or 2 months.