

## ABSTRACT

Pit A and Pit B are the first project coal mining PT. Agro City Kaltim located in Long Iram district, West Kutai Regency, East Kalimantan Province. In Pit A and Pit B, the water resources that will flow into the pit comes from rain water and run off water from the catchment around pit.

Based on the analysis of the obtained data is the plan rainfall is 130.07 mm/day, the intensity of rainfall is 18.78 mm/hour with a 3 year return period rainfall and 94.147% hydrological risks. There are eight catchment area in research located, DTH I = 0.02999 km<sup>2</sup>, DTH II = 0.06422 km<sup>2</sup>, DTH III = 0.05012 km<sup>2</sup>, DTH IV = 0.07564 km<sup>2</sup>, DTH V = 0.04271 km<sup>2</sup>, DTH VI = 0.04109 km<sup>2</sup>, DTH VII = 0.09211 km<sup>2</sup> and DTH VIII = 0.04039 km<sup>2</sup>.

Drainage system has planned is a combination of mine drainage and mine dewatering. The mine drainage used is open channel to prevent run off into the pit. Dimensions of open channel are :

- a. Open Channel 1: a = 0,6 m; b = 0,6 m; B = 1,2 m; h = 0.6 m,
- b. Open Channel 2: a = 0,7 m; b = 0,7 m; B = 1,4 m; h = 0,7 m,
- c. Open Channel 3: a = 0,6 m; b = 0,6 m; B = 1,2 m; h = 0,6 m,
- d. Open Channel 4: a = 0,5 m; b = 0,5 m; B = 1,0 m; h = 0,5 m.
- e. Open Channel 5: a = 0,8 m; b = 0,8 m; B = 1,6 m; h = 0,8 m

The mine dewatering used is make the sump to hold of rainwater that flow into the Pit A. The rain water will have flowed into the pit and flow naturally into the sump. Dimensions of the sump has a lenght of 32.5 m, a width of 12 m and a depth of 4 m,

Water will have filled into the sump and then will have pumped to the open channel and flow naturally into sedimen ponds. Pump used are the type *Multiflo* MFC-345. The water in the sump Pit A will have pumped into sedimen pond 1 with 300 m<sup>3</sup> / hour flowrate.

There are 3 sedimen ponds has planned in the first year mining with dimensions are:

- a. Sedimen ponds 1 has a length of 25 m, a width of 15 m and a depth of 3 m,
- b. Sedimen ponds 2 has a length of 32 m, a width of 15 m and a depth of 4 m,
- c. Sedimen ponds 3 has a length of 45 m, a width of 25 m and a depth of 4 m.