ABSTRACT

The main problem of drainage system in PIT 202 JMB is the high rainfall filling opens mine as well as the broken and antriated open channel. The fared between sump and settling pond causes the high total head. The sump and settling pond which are rarely dredging leaves slurry causing the water cannot be hold properly. In addition, Pit 202 JMB has its settling pond having been placed in mine plan design Pit 202 JMB has also limited mine area since it faces plantations. Therefore, the assessment for drainage system is needed.

The water found in mine area comes only from the rain. The maximum daily rainfall is 132,1 mm/day with is intensity 17.51 mm. The totally catcment area is 2,65 km^2 and the mounted water at 43.975,25m^3/hour

The assessment divided into 13 catchment areas and 11 open channels, which is formerly divided into 4 catchment areas. From the calculation obtained dimension of the sump 2 has 155 m length, 115 m width, and 6 m depth within 35 hours of pumping. Sump 3 dimension is 136 m length, 88 m width, and 6 m depth within 41 hours of pumping. Sump 4 dimension is 80 m length,49 m width, and 5 m depth within 14 hours of pumping.

The pump requirement of sump 2 is one pump multiflo MFC 390 series and one pump multiflo MFC 420 series within 903 m length of pipe without improvement. After improvement of sump 3, it require one pump multiflo MFC 420 series within 107,43 m total head and 1049 m length of pipe. Requirement pump of sump 4 is one pump multiflo MFC 420 series within 38,7 m total head and 437 m length of pipe. Optimal discharge pump multiflo MFC 390 series is 237 liter /meter and multiflo MFC 390 series is 170 liter/meter .

Because the location of the settling pond at the plan of the mining area, then moved to the East Pit 202 JMB .Dimensions of one pond is 42 m length, 16 m width, and 5 m depth within three compartments. Schedule from dredging to settling pond is 30 days each in raining season.

Keywords : Rainfall, catchment area, sump, total head, settling pond