

ABSTRACT

PT. Bharinto Ekatama is a coal mining company which is located approximately 100 km to the north of the Melak city and 160 km towards the northwest of Balikpapan in East Kalimantan. PT. Bharinto Ekatama located in the Coal Mining Cooperation Agreement with an area of 22,000 ha. Mining system that is used is the open pit system which is dependent upon the weather, especially the rain. Rainwater that enters the mine area will greatly affect the production of coal.

PT. Bharinto Ekatama has two pit mining pits are the pits 3000 and 6000 are located in Biangan. Mining in pit 3000 and pit 6000 until mid-2013 was estimated at -55 m elevation above sea level. The main problem at the PT. Bharinto Ekatama pit is the mine water. Mine sequence's cause mine drainage system has to change. Hence the need for technical studies on existing mine drainage system. From the measurement results obtained total catchment from January to June of 11.02 km² with the highest rainfall in the month of December 2011 is 875 mm and the lowest rainfall in August 2006 was 14 mm. To prevent water from entering into the mining sites used open channel located in the north of the pit 6000. The open channel has a top width (6m - 7m), bottom width (2m - 3m), with depths ranging between (3m - 4m). Open channel to drain the water from the wells (sump) in the pits 6000 and 3000 towards a settling pond has a top width (2m - 4m), bottom width (1m - 2m) and depth ranges (2m - 3m). Wells on the location of the research serves to hold water so as not to commemorate the pit floor. In pit 3000 the surface width and length dimensions of the surface 53 m, width and length of the base wells 49 m with a depth of 3m. In pit 6000 the with a depth of 4 m, width and surface wells 75m length, width and length of 70m wells basis. The water in the sump will be pumped and discharged into settling ponds.

Water must be moved using the pump, the pump used in study sites are centrifugal pumps Multiflo Pump (MFV 390) 1 unit in pit 3000, and MFV 420E 1 unit in pit 6000. Of each sump, water will be pumped to the settling ponds where the total head to be overcome of pit 3000 by 55 m, and from the sump pit 6000 total head of 65 m. The Settling pond currently has 3 compartments. For SP-BK02-01 with a total volume of 15.260 m³, solid dredging done during settling ponds have been filled range as much as 72% - 74% of the volume on each compartment, while the settling ponds BK02-SP-02 has a total volume 42.542 m³, conducted dredging if the settling ponds have filled 70% - 72% of the volume of each compartment.