

## ABSTRACT

*Increase in coal production and increasing rainfall due to the rain season means more water and mud volume produced. High volume of water in the coal mining area will result in disruption in the mining and transportation of mining material activity. To handle the disruption in those mentioned activities, the company needs better mine drainage systems.*

*Research is held on Pit Kusan Coal Mining which is one of the coal-producing block operated by PT. Borneo Indobara (BIB). It is located in Angsana subdistrict, Tanah Bumbu district, South Kalimantan Province. This mining area starts producing coals in 2011 with strip mine method.*

*Result of statistics calculation rainfall are maximum average rainfall since 2007-2016 is 118,71 mm/day, rainfall intensity plan is 41,16 mm/hour. Return period of rainfall is 3 years with hidrology risk as big as 86,83%. The catchment area on that site has 572,13 Has which is divided into 6 areas.*

*The drainage plan design are construction the two open channels, the volumes of the main sump are 128.838 m<sup>3</sup> with utilizing 4 units pump Multiflo MF 420 E and 4 boosters Warman 8/6 AH have rate of operation flow is 630 m<sup>3</sup>/hour then prevent to transfer sump with the volume are 51.785 m<sup>3</sup> pumped by 4 units Multiflo 420 E have rate of operation flow is 635 m<sup>3</sup>/hour, the total volumes of settling pond are 43.125 635 m<sup>3</sup>.*