

ABSTRACT

Mount Merapi is located in Sleman, Magelang, Boyolali and Klaten Regencies, one of the most active volcanoes in Indonesia. Mount Merapi has erupted 68 times, the largest eruption occurred on October 26, 2010 (BNPB, 2011). In the last eruption of Mount Merapi spewed up solid material deposits ranging from large-sized rocks to sand material totaling 140 million m³ (BBWS Serayu Opak, 2011). To anticipate and reduce the risk of cold lava floods, disaster prevention measures need to be taken, namely, Design Of Sand Pocket On Kali Putih River As A Sediment Control Building.

In this study primary data collected by direct survey which is taking river geometry data and sampling of soil properties, while secondary data is rainfall data were obtained from BBWS Serayu Opak. Hydrological data analysis to determine the design flood discharge calculated using Rational method. The watershed area was searched using ArcGIS 10.2 software. Hydraulics analysis (sand pocket design) was carried out using the RSNI3 Sediment Control Building method and then the stability of the sand pocket was measured.

The results of the sand pocket design were able to obtain a 50-year return flood discharge of m³/s and debris flow of 144.8903 m³/s. At sand pocket, the main dam height is planned to be 8 m with a foundation depth of 3 m, the sub-dam height is planned to be 3.5 m and the plunge floor length is 23 m. Based on the sand pocket capacity, it is known that the building's capacity was 293,176,0602 m³.

Keywords: Sand Pocket, Kali Putih, Sediment.