ANALISIS POTENSI AIR DAS TALLO UNTUK KEPERLUAN PREDIKSI BANJIR

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ABSTRAK

Sumber daya air suatu wilayah terdapat dalam berbagai bentuk, berupa genangan dan aliran air, air tanah, es atau kelembapan atmosfer. Kondisi hidrologi disetiap wilayah dicermati secara mendalam mempunyai perbedaan dalam proses, proses hidrologi di suatu wilayah dipengaruhi oleh karakteristik fisik wilayahnya dan perilaku manusia. Tujuan penelitian ini adalah untuk mengetahui gambaran potensi Daerah Aliran Sungai (DAS) Tallo di tinjau pada debit maksimum, minimum, serta debit andalan dan untuk mengetahui bagaimana gambaran debit banjir rancangan dan probabilitas banjir maksimum di Sungai Tallo. Hasil penelitian menunjukkan bahwa debit air Sungai Tallo pada stasiun Bontobili dengan debit puncak terjadi di bulan Januari sebesar 9,77 m3/dtk dan debit minimum terjadi di bulan Juli, Agustus, September dan Oktober sebesar 1,98 m3/dtk. Sedangkan untuk debit andalan yang tersedia pada bulan Desember Q80% = 3,56 m3/dtk, Q70% = 4,17 m3/dtk, dan Q60% = 4,59 m3/dtk. Dan analisa perhitungan debit banjir rancangan dengan metode HSS Nakayasu diperoleh debit banjir puncak sebesar 11,776 m3/dtk dengan waktu puncak sebesar 1,41 jam. Untuk metode HSS SCS diperoleh debit banjir puncak sebesar 1640,67 m3/dtk dengan waktu puncak sebesar 0,55 jam. Sedangkan untuk metode HSS Snyder diperoleh debit banjir puncak sebesar 38,984 m3/dtk dengan waktu puncak sebesar 3,88 jam.

Kata Kunci: Debit Maksimum, Debit Andalan, Banjiir Rancangan

ABSTRACT

Water resources of a region exist in various forms, in the form of puddles and streams of water, groundwater, ice or atmospheric moisture. In the tropics, water resources come from rainwater, both local and upstream. Hydrological conditions in each region are observed in depth to have differences in the process, causing differences in water potential. Hydrological processes in a region are influenced by the physical characteristics of its territory and human behavior. The purpose of this study is to determine the picture of the potential of the Tallo Watershed (DAS) in review at the minimum maximum discharge, as well as the mainstay discharge and to find out how the picture of the design flood discharge and maximum flood probability in the Tallo River. In this study, the author uses quantitative analysis because it uses secondary data that is quantitative. The results showed that the water discharge of the Tallo River at Bontobili station with peak discharge occurred in January of 9.77 m3/s and minimum discharge occurred in July, August, September and October of 1.98 m3/ s. As for the mainstay debit available in December Q80% = 3.56 m3/s, Q70% = 4.17 m3/s, and Q60% = 4.59 m3/s. And the analysis of the calculation of the design flood discharge using the Nakayasu HSS method obtained a peak flood discharge of 11.776 m3/ s with a peak time of 1.41 hours. For the HSS SCS method, a peak flood discharge of 1640.67 m3/s was obtained with a peak time of 0.55 hours. As for the HSS Snyder method, a peak flood discharge of 38.984 m3/s was obtained with a peak time of 3.88 hours.

Keywords: Maximum Discharge, Mainstay Discharge, Design Flood