PERBANDINGAN EFISIENSI BIAYA ANTARA PASANGAN BATU KALI DENGAN BETON PADA BENDUNG WRINGIN PANTI KABUPATEN JEMBER

COMPARISON OF COST EFFICIENCY BETWEEN RIVER STONE MASONRY WTH CONCRETE ON WRINGIN PANTI WEIR, JEMBER DISTRICT

Abstrak

Daerah Irigasi Wringin terletak di Kecamatan Panti Kabupaten Jember, kondisi bendung hancur. Terdapat 400 bendung yang mengalami kerusakan, sedangkan APBD Kabupaten Jember untuk bidang sumber daya air 5 miliar per tahun. Tujuan penelitian ini untuk mengetahui material yang efisien pada bendung wringin. Penelitian ini menggunakan metode komparatif kuantitatif, yaitu menghitung analisa perbandingan biaya dan analisa ekonomi pada stabilitas bendung yang sama. Hasil stabilitas bendung dengan *plaxis* 8.2 pada pasangan batu kali faktor keamanan 2,340 > 1,5 (stabil), pada stabilitas bendung beton faktor keamanan 2,342 > 1,5 (stabil). Pada rencana anggaran biaya pasangan batu kali sebesar Rp. 1.497.029.000,00. Untuk biaya material beton sebesar Rp. 1.372.641.000,00. Sedangkan biaya material pasangan batu kali selimut beton sebesar Rp. 1.612.853.000,00. Untuk analisa ekonomi pasangan batu kali *BCR* = 1,70 > 1, *NPV* = Rp. 386.166.842,96 > 1, dan *IRR* = 7,03% > 6,25%. Pada analisa ekonomi material beton *BCR* = 1,86 > 1, *NPV* = Rp. 510.734.842,96 > 1, dan *IRR* = 8,58% > 6,25%. Sedangkan analisa ekonomi pasangan batu kali selimut beton *BCR* = 1,58 > 1, *NPV* = Rp. 270.342.842,96 > 1, dan *IRR* = 5,81% < 6,25%. Sehingga material yang efisien beton, ditinjau dari rencana anggaran biaya dan analisa ekonomi.

Kata Kunci: Analisa Ekonomi; Bendung; Biaya; Efisien

Abstract

Wringin Irrigation Area is located in Panti Subdistrict of Jember Regency, the condition of the weir was destroyed. There are 400 weirs that are damaged, while the Jember Regency budget for the water resources sector is 5 billion per year. The purpose of this research is to find out the efficient material in wringin weir. The research uses a quantitaive comparative method, specifically by calculating comparative cost analysis and economic analysis under the same weir stability conditions. The results of the stability of the weir with Plaxis 8.2 on the river stone masonry safety factor 2.340> 1.5 (stable), on the stability of the concrete weir safety factor 2.342> 1.5 (stable). In the budget plan the cost of river stone masonry is Rp. 1,497,029,000.00. For concrete material costs amounted to Rp. 1,372,641,000.00. While the cost of concrete blanket river stone material amounted to Rp. 1,612,853,000.00. For the economic analysis of river stone masonry BCR = 1.70> 1, NPV = Rp. 386,166,842.96> 1, and IRR = 7.03%> 6.25%. In the economic analysis of concrete material BCR = 1.86 > 1, NPV = Rp. 510,734,842.96 > 1, and IRR = 8.58% > 6.25%. While the economic analysis of concrete blanket masonry BCR = 1.58 > 1, NPV = Rp. 270,342,842.96 > 1, and IRR = 5.81% < 6.25%. So that the efficient material is concrete, in terms of cost budget plan and economic analysis.

Keywords: *Cost; Economic Analys; Efficiency; Weir*