

## SUMMARY

**Maulana Septian Dwi Pranata**, Water Resource Engineering, Faculty of Engineering University of Brawijaya January 2017, *The Study of Water Balance in the Brawijaya University*, Supervisor: Dr. Ir. Widandi Soetopo, M. Eng. and Prof. Dr. Ir. Lily Montarich L., M.Sc.

UB is one of the best educational institutions in Indonesia. Statistics shows, that the number of students and employees (civitas academica) at University of Brawijaya in 2008 amounted to 29,813 inhabitants increased to 65,213 inhabitants in 2013. Construction of buildings and other supporting means resulted in reduced water infiltration land that can reduce the amount of income groundwater at University of Brawijaya. Water needs for operational purposes at the University of Brawijaya in addition to utilizing the groundwater also used the water PDAM. The use of water PDAM in 2012 of 91,315 m<sup>3</sup>/year increase to 96,375 m<sup>3</sup>/year in 2014. This research was conducted aiming to find out the magnitude of the potential availability of water, the water balance and water needs in the area of UB, as well as Windows will arise over the next 30 years.

The results of this research obtained by the magnitude of the availability of water resources University of Brawijaya currently are as follows: the availability of the groundwater ranges between 135,604.8 s/d 378,432.0 m<sup>3</sup>/year and the availability of water PDAM of 86,858.0 m<sup>3</sup>/year. The magnitude of the water needs of the commercial and non commercial water needs at the University of Brawijaya at this time are as follows: commercial water needs covering water needs of the guest house of 31,798.8 m<sup>3</sup>/year. Whereas non-commercial water needs covering water needs University of 231,581.6 m<sup>3</sup>/year, water needs a place of worship of 23,536.4 m<sup>3</sup>/year and a canteen of water 10,156.1 m<sup>3</sup>/year. As well as the condition of the water balance in the region experiencing a surplus of Ub 168217.1 m<sup>3</sup>/year. Once projected for 30 years, the condition of the water balance at the University of Brawijaya is estimated to still have a surplus of 159887.5 m<sup>3</sup>/year.

Recommendations are given with respect to the condition of the water balance sheet that is harnessing the potential of the rain falling on the roof of the mainstay of 107783.1 m<sup>3</sup>/year. The utilization by using rainwater harvesting, catchment wells infiltration and infiltration hole biopori. Based on the analysis that has been done it brings the total number of each of the following: Spooler rainwater harvesting as much as 70 pieces, as many as 67 infiltration and hole resapan biopori 1854 as much.

**Keyword:** Balance Water, Pumping Test, Rainwater harvesting, Brawijaya University