TECHNICAL STUDY OF POTENTIAL GROUNDWATER FOR DOMESTIC NEEDS IN SUB DAS TINALAH, NGARGOSARI VILLAGE AND ITS SURROUNDING, SAMIGALUH DISTRICT, KULONPROGO REGENCY, SPECIAL REGION OF YOGYAKARTA

By

Yuni Tessa Afriliani Djanisar

114120027

ABSTRACT

The living creatures needs for water are constantly increasing due to the increase of the human population, while the amount of water on earth especially ground water is limited. The quality and quantity of ground water have different circumstances in each region. Ngargosari is one of the villages in the Samigaluh District, Kulonprogo Regency whereby it is prone to drought when the dry season occurs. The amount of clean water for the needs of the people have been limited, especially in the dry season.

The aim for this research is to determine the presence of groundwater, knowing the potential (quality and quantity) of groundwater and to know the needs of ground water for domestic needs in the research site. The method used in this research are survey and mapping, mathematical, interview and laboratory. The presence of ground water can be determined by analyzing the characteristics of the aquifer in the form of hydraulic conductivity (directly pump test results in the field), the preparation of the aquifer material, porosity, transmissivity and the depth of groundwater level. The groundwater quality parameters used are physical (color, turbidity, dissolved solids and electrical conductivity) chemical (pH, chloride sulfate total iron, nitrate and total hardness $CaCO_3$ and biology which is Bacterium Coli Feces.

Based on the calculation results hydraulic conductivity is 0,24 m/day with breccia material. It is assumed that the aquifer thickness is spread evenly in the research site which is 14 m and the cross sectional area of the aquifer is 43,596m² so the debit value of the groundwater in the research filed is 19,73 Liters/second which is quite large and the debit value of the springs are 19,48 Liters/second while the usage of ground water for domestic needs is 2,895 Liters/second. The needs of groundwater at the research site is fulfilled when the springs are managed and utilized properly. The quality of ground water in its physical and chemical remains below the maximum limits. The referral management techniques that is being suggested are infiltration wells and tanks.

Keywords : Groundwater, potential groundwater