

ANALISIS EFEKTIVITAS SUMUR BOR DAN SISTEM DISTRIBUSI AIR BERSIH DENGAN EPANET 2.0

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ABSTRAK

Air bersih merupakan kebutuhan esensial manusia secara berkelanjutan. Penggunaan air bersih sangat penting untuk kebutuhan rumah tangga, tempat umum, dan industri. Desa Pangkalan saat ini masih kurang memadai untuk mencukupi ketersediaan dan kebutuhan air masyarakat setempat, perlu dilakukan pendistribusian air bersih dengan menggunakan pipa HDPE. Penelitian ini bertujuan untuk mengetahui besarnya kebutuhan air bersih di Desa Pangkalan, Kabupaten Pangandaran dengan simulasi jaringan distribusi air menggunakan *software* EPANET 2.0 dalam upaya pemenuhan kebutuhan air bersih. Hasil penelitian menunjukkan kebutuhan air bersih penduduk Desa Pangkalan pada tahun 2029 yaitu kebutuhan air rata-rata 0,45 l/detik, kebutuhan air jam puncak 0,69 l/detik, dan kebutuhan air harian maksimum 0,51 l/detik. Hasil simulasi EPANET 2.0 diperoleh kecepatan aliran pada pipa, diambil contoh pipa nomor 2 dengan kecepatan aliran yaitu 0,33 m/s dan tekanan air diambil contoh *junction* 1 yaitu nilai tekanannya adalah 12,05 m.

Kata Kunci: Jaringan Distribusi, Kebutuhan Air, Ketersediaan Air, Simulasi EPANET 2.0.

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ANALYSIS OF THE EFFECTIVENESS OF BOREHOLES AND CLEAN WATER DISTRIBUTION SYSTEMS USING EPANET 2.0

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ABSTRACT

Clean water is an essential human need in a sustainable manner. The use of clean water is very important for household, public and industrial needs. Pangkalan Village is currently still inadequate to meet the water availability and needs of the local community, it is necessary to distribute clean water using HDPE pipes. This research aims to determine the magnitude of the need for clean water in Pangkalan Village, Pangandaran Regency by simulating the water distribution network using Epanet 2.0 software in an effort to meet clean water needs. The research results show that the clean water needs of Pangkalan Village residents in 2029 are an average water need of 0.46 l/s, peak hour water needs are 0.69 l/s, and maximum daily water needs are 0.51 l/s. The Epanet 2.0 simulation results show that the flow velocity in the pipe is taken as an example of pipe number 2 with a flow velocity of 0.33 m/s and the water pressure is taken as an example of junction 1, namely the pressure value is 12.05 m.

Keyword: Epanet Simulation 2.0, Distribution Network, Water Availability, Water Demand.

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