

ABSTRAK

OPTIMALISASI DISTRIBUSI AIR BERSIH DI PERUMAHAN RS HOLINDO MENGUNAKAN SOFTWARE EPANET 2.0

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Permasalahan ketersediaan air bersih merupakan permasalahan yang sering dihadapi oleh masyarakat Ogan Komering Ulu akhir-akhir ini, baik mengenai kuantitas maupun kualitas air bersih. Meningkatnya jumlah penduduk dan aktivitas pembangunan mengakibatkan meningkatnya kebutuhan air bersih di masyarakat. Analisis data pada penelitian ini meliputi: Sistem jaringan distribusi air bersih PDAM Booster Holindo, Menghitung debit kebutuhan air dan Menganalisis sistem jaringan perpipaan dengan aplikasi EPANET 2.0. Penelitian ini dilakukan dengan cara pengamatan langsung pelaksanaan di lapangan yang berlokasi di RS HOLINDO, Kecamatan Baturaja Timur, Kabupaten Ogan Komering Ulu, Provinsi Sumatera Selatan. Hasil dan Pembahasan Setelah dilakukan optimalisasi, hasil simulasi diperoleh nilai Kecepatan pada hari pertama telah memenuhi standar teknis berdasarkan Peraturan PU No. 18 Tahun 2007 yaitu pada kisaran 0,3 sampai dengan 2,5 m/s dimana sistem pengaliran dilakukan ke seluruh blok. Namun pada hari kedua saat pengaliran hanya dilakukan pada blok bagian bawah. Masih terdapat beberapa bagian pada pipa poros utama yang memiliki laju aliran di bawah standar. Kesimpulan: Parameter yang memengaruhi optimasi ini meliputi tekanan, laju aliran, debit air, diameter dan panjang pipa, topografi, pola aliran, bentuk jaringan, penambahan pompa, dan pengaturan katup. Dengan mempertimbangkan parameter-parameter ini, diharapkan distribusi air bersih dapat lebih efisien dan merata.

Kata Kunci: Optimasi, Air Bersih, Perangkat Lunak Epanet 2.0

ABSTRACT
OPTIMIZATION CLEAN WATER DISTRIBUTION
IN RS HOLINDO HOUSING
USING EPANET 2.0 SOFTWARE

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The problem of clean water availability is a problem that is often faced by the Ogan Komering Ulu community lately, both regarding the quantity and quality of clean water. The increasing population and development activities have resulted in an increase in the need for clean water in the community. Data analysis in this study includes: Clean water distribution network system of PDAM Booster Holindo, Calculating the discharge of water needs and Analyzing the piping network system with the EPANET 2.0 application. This study was conducted by direct observation of the implementation in the field located at the RS HOLINDO, Baturaja Timur District, Ogan Komering Ulu Regency, South Sumatra Province. Results and Discussion After optimization, the simulation results obtained that the Velocity value on the first day had met the technical standards based on PU Regulation No. 18 of 2007, which was in the range of 0.3 to 2.5 m / s where the flow system was carried out to all blocks. However, on the second day when the flow was only carried out in the lower block. There were still several sections in the main axis pipe that had a flow rate below standard. Conclusion The parameters that affect this optimization include pressure, flow rate, water discharge, pipe diameter and length, topography, flow pattern, network shape, pump addition, and valve settings. By considering these parameters, it is expected that the distribution of clean water can be more efficient and even.

Keywords: *Optimization, Clean Water, Epanet 2.0 Software*