Putri, A.A.I., 2015. Perencanaan Pengembangan Sistem Distribusi Air Minum Kecamatan Driyorejo Kabupaten Gresik. Skripsi dibawah bimbingan Dr.Ir. Suyanto, M.Si dan Nur Indradewi Oktevitri, S.T., M.T. Program Studi S-1 Ilmu dan Teknologi Lingkungan, Departemen Biologi, Fakuktas Sains dan Teknologi, Universitas Airlangga.

ABSTRAK

Kabupaten Gresik sebagai ibukota Kecamatan Driyorejo memiliki kebutuhan air yang pelayananya dilakukan dengan sistem non perpipaan (air tanah) dan sistem perpipaan (PDAM). Tingkat pelayanan sistem distribusi air minum pada tahun 2013 sebesar 66,17%, kondisi tersebut belum memenuhi Rencana Pembangunan Jangka Panjang Nasional (RJPMN) sebesar 85% untuk keterlayanan air masyarakat. Analisis dimulai dengan membandingkan kondisi eksisting perencanaan kota dan kriteria desain menggunakan program EPANET 2.0. Hasil evaluasi kondisi eksisting menunjukkan bahwa sistem pasokan air tidak cukup untuk melayani penduduk Kecamatan Driyorejo. Tekanan jaringan belum juga memenuhi kriteria desain dan kapasitas reservoir kurang dari 10% dari kebutuhan harian maksimum. Pengembangan jaringan yang akan direncanakan meliputi transmisi, distribusi, dan reservoir untuk meningkatkan kebutuhan air. Sistem pasokan air yang diterima penduduk harus sesuai dengan kriteria distribusi air seperti, kualitas air, kuantitas, dan kontinuitas. Pengembangan jaringan distribusi meliputi jalur distribusi baru dan menambahkan pipa parallel dari jaringan lama untuk meningkatkan aliran air dan tekanan. Sistem transmisi akan menggunakan pipa PVC Dan HDPE, dengan diameter dari 150 mm hingga 500 mm dan panjang jalur 30.153,39 m. Reservoir baru berjumlah tiga buah, dua *ground reservoir* volume 500 m^3 pada IPA Krikilan, dan satu *ground reservoir* volume 300 m^3. Total biaya Rp14.643.475.245 untuk pengembangan jaringan distribusi secara keseluruhan.

Kata Kunci : EPANET 2.0, Sistem Distribusi Air Minum, Pipa, PDAM

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ABSTRACT

Kabupaten Gresik as a capital of Kecamatan Driyorejo which had a water demand is accomplished by non piping system (ground water) and piping system (PDAM). This condition was proved that Kecamatan Driyorejo needs water supply system development until 85% service was not covered This. analysis begun by comparing the existing condition with city planning and designing criteria using the EPANET 2.0 program. The analysis results showed that water supply system was not enough to supply the citizen in Kecamatan Driyorejo. Network pressure was not suitable with the design criteria so it could no be served for all area and the reservoir capasity was less than 10 % of maximum daily needs which was not suitable with the criteria. Based on these, the water supply system would be developed, which included by transmission, distribution, and reservoir. The developing of Kecamatan Driyorejo would be increased the water demand. The water supply system had to accomplish the basic concept of water quality, quantity, and continuity. Transmission system used PVC dan HDPE pipes, from 150 mm until 500 mm in diameter and 30.153,39 m in length. Distribution network development included new distribution line and added pipes which were paralell with the old ones to increase water flows and pressures. The new reservoir was a three ground reservoirs, two ground reservoir in IPA Krikilan which volume was 500 m^3 and one ground reservoir in IPA Petiken which volume was 300 500 m^3. Total cost of development plan of the drinking water distribution was Rp14.643.475.245.

Key word : EPANET 2.0, water supply system, pipe, PDAM