

ABSTRAK

CLARA SHINTA DILAPANGA. 2015. *Penurunan Kadar Besi (Fe) Pada Air Sumur Suntik Dengan Menggunakan Alat Pneumatic System.* Skripsi, Jurusan Kesehatan Masyarakat, Fakultas Ilmu-Ilmu Kesehatan dan Keolahragaan, Universitas Negeri Gorontalo. Pembimbing I Dr. Herlina Jusuf, Dra, M.Kes dan Pembimbing II Lia Amalia, S.KM.,M.Kes.

Masalah tingginya kadar besi (Fe) dalam air tanah menjadi masalah yang perlu diperhatikan mengingat masih banyak masyarakat menggunakan air sumur sebagai sumber air bersih sehingga perlu pengolahan air bersih yang dapat menurunkan kadar Fe dalam air. Rumusan Masalah adalah apakah ada penurunan kadar besi (Fe) pada air sumur suntik dengan menggunakan alat *Pneumatic System* berdasarkan lama waktu injeksi udara yang efektif. Tujuan dari penelitian ini adalah menurunkan kadar Fe pada air sumur suntik yang ada di RT 1 Kelurahan wumialo Kecamatan Kota Timur Kota Gorontalo dengan menggunakan alat *Pneumatic System*.

Metode penelitian yaitu *Quasi Experiment* dengan rancangan penelitian *Separate Sample Pretest Posttest*. Penelitian dilakukan dengan menggunakan bak aerasi dari plastic, *Air Pump* dengan *aerator size 5 W*, dengan variasi lama waktu injeksi 10 menit, 20 menit, 30 menit dan 40 menit dengan 3 kali pengulangan. Air hasil pengolahan dianalisis di laboratorium dengan hasil Penelitian menunjukkan bahwa lama waktu efektif yang mampu menurunkan kandungan Fe dibawah ambang batas menggunakan alat *Pneumatic System* adalah 10 menit, dengan prosentase penurunan 30,25%. Perlu adanya penambahan unit pengolahan seperti saringan pasir lambat untuk lebih memperbesar Prosentase (%) penurunan kandungan Fe dalam air baku.

Kata Kunci : Besi (Fe), *Pneumatic System*, Sumur Suntik

ABSTRACT

CLARA SHINTA DILAPANGA. 2015. *The Decrease of Iron Content (Fe) in Water of Injection Well through Pneumatic System Tool.* Skripsi, Department of Public Health, Faculty of Health and Sport Sciences, Universitas Negeri Gorontalo. the principal supervisor was Dr. Herlina Jusuf, Dra, M.Kes and co supervisor was Lia Amalia, S.KM.,M.Kes.

Problem of high levels of iron in groundwater becomes a serious concern toward the big amount of people who consume water of wells as as a source of clean water, so it requires water management to decrease iron content in the water. The research problem was whether there is a decrease of iron content in water of injection well through using pneumatic system tool based on length of time effective air injection or not. The research aimed at decreasing iron content in the water of injection well which is lied on RT 1 (Neighborhood association) in Wumialo village, subdistrict of Kota Timur, Gorontalo through pneumatic system tool.

The research was categorized to quasi experimental through separate sample pretest posttest design. It was conducted by using plastic aeration basin, air pump with aerator size 5 w, various length of injection time for 10 minutes, 20 minutes, 30 minutes, and 40 minutes with thrice repetition. Water processing results were analyzed at laboratory which revealed length of effective injection time in terms of decreasing iron content under the threshold was 10 minutes, and the percentage of decrease was 30,25%. It requires addition of processing unit such as slow sand filter to enlarge the percentage (%) of iron content in standard water.

Keywords: iron (Fe), pneumatic system, injection well

