ABSTRACT

STUDY ON THE ADAPTABILITY OF DRINKING WATER TREATMENT TO INTAKE QUALITY CHANGES (CASE STUDY OF BEKASI WATER TREATMENT PLANT IN REGIONAL JATILUHUR 1)

Refansya David Fadhilla[1)], Tri Nugraha Adikesuma[2)]

[1)] *Student of Civil Engineering Department, Universitas Pembangunan Jaya*

[2)] *Lecturer of Civil Engineering Department, Universitas Pembangunan Jaya*

This study analyzes the adaptability of drinking water treatment at the Bekasi Water Treatment Plant (WTP) within the Regional Drinking Water Supply System Jatiluhur 1, which utilizes raw water sourced from the Tarum barat River. The quality of the raw water exhibits significant fluctuations due to weather changes, agricultural seasons, anthropogenic activities, and geographical conditions, with variations in concetrations of iron (0.03-0.14 mg/L) and Total Dissolved Solid (TDS) (104-144 ppm). This water treatment system has proven effective in producing drinking water that meets quality standards as mandated by government regulations. The adaptability mechanism consist of Jar Test for optimizing coagulant dosage and a SCADA system for real-time monitoring of water quality, allowing for a rapid response to fluctuations in raw water quality. Laboratory test result indicate that the treated drinking water meets quality criteria, with total coliform, nitrate, and heavy metals below the established maximum limits. This study recommends the development of an automated chemical dosing adjustment system and an increase in the number of sample data for a more comprehensive analysis of fluctuations in the Tarum Barat River water quality, to ensure the sustainability and effectiveness of the drinking water supply system.

Keywords: *Adaptability, Drinking Water Treatment, Raw Water Quality, Jar Test, SCADA System*

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