ABSTRAK

Instalasi Pengolahan Air (IPA) Penet Kabupaten Badung merupakan salah satu instalasi yang melayani kebutuhan air bersih, termasuk air minum bagi penduduk Kabupaten Badung dan Denpasar. Air minum yang layak untuk dikonsumsi oleh masyarakat harus memenuhi syarat-syarat tertentu, yaitu fisika, kimia, biologi, dan radioaktif sesuai dengan syarat Permenkes Nomor 492 Tahun 2010 tentang Persyaratan Air Minum. Penelitian ini bertujuan untuk menganalisis perbedaan parameter fisik (Kekeruhan dan TDS), kimia (pH dan Chlorin), dan biologi (Total koliform dan E.coli) sebelum dan sesudah pengolahan.

Penelitian ini menggunakan metode kuantitatif dengan rancangan eksperimen melalui pendekatan cross-sectional. Subjek penelitian yang diambil adalah data kualitas air minum IPA Penet bulan Maret-Juli 2024 sebelum dan sesudah pengolahan

Hasil penelitian menunjukkan bahwa ada perbedaan sebelum dan sesudah pengolahan. Nilai standar efektifitas untuk menurunkan tingkat kekeruhan agar hasil reservoir memenuhi baku mutu adalah sebesar 96,55 %, E.Coli 100 % dan total coliform 100 %. Sehingga IPA Penet dinyatakan efektif dalam menurunkan seluruh parameter air minum sesuai dengan Permenkes Nomor 492 Tahun 2010. Dapat disimpulkan bahwa kualitas air minum yang diolah di IPA Penet sudah baik.

Kata kunci: IPA Penet, air baku, air produksi, kualitas air, efektivitas

ABSTRACT

The Penet Water Treatment Plant (WTP) in Badung Regency is a facility that provides clean water, especially drinking water, to the population of Badung Regency and Denpasar. Water intended for communal consumption must adhere to specific criteria, including those related to physics, chemistry, biology, and radiation, as outlined in Regulation of the Minister of Health of the Republic of Indonesia number 492 of 2010, which sets forth the regulations for drinking water. The objective of this study is to examine disparities in physical (turbidity and total dissolved solids), chemical (pH and chlorine), and biological (total coliform and Escherichia coli) factors prior to and following treatment.

This study employed quantitative methodologies with an experimental design utilising a cross-sectional approach. The project focused on collecting clean water quality data of WTP Penet from March to July 2024, both before and afterm treatment. The findings indicated significant disparities between the pre-treatment and post-treatment conditions.

The prescribed efficacy values for reducing turbidity levels in order to achieve quality standards are 96.55% for overall effectiveness, and 100% for both E. coli and total coliform reduction. WTP Penet is deemed effective in decreasing all drinking water parameters as specified in Regulation of the Minister of Health of the Republic of Indonesia number 492 of 2010. The quality of drinking water treated at Penet WTP is deemed satisfactory.

***Keywords**: WTP Penet, raw water, production water, water quality, effectiveness*