

ABSTRAK

Rumah sakit menghasilkan air limbah domestik yang berpotensi menimbulkan pencemaran lingkungan apabila tidak dikelola dan dipantau secara efektif. Keberhasilan pengelolaan air limbah tidak hanya ditentukan oleh kinerja Instalasi Pengolahan Air Limbah (IPAL), tetapi juga oleh efektivitas sistem pemantauan yang mendukung pengendalian dan perbaikan berkelanjutan. Penelitian ini bertujuan mengevaluasi efektivitas sistem pemantauan kualitas air limbah domestik di RSUD Shanti Graha serta merumuskan strategi penguatan sistem pemantauan untuk mendukung pengelolaan lingkungan rumah sakit yang berkelanjutan. Penelitian menggunakan pendekatan Mixed Methods dengan desain Sequential Explanatory yang diawali dengan analisis kuantitatif dan dilanjutkan dengan pendalaman kualitatif. Data kuantitatif diperoleh dari hasil pengujian kualitas air limbah domestik pada outlet IPAL periode 2021–2025, sedangkan data kualitatif diperoleh melalui telaah dokumen, observasi, analisis kesenjangan (gap analysis), dan analisis SWOT. Integrasi kedua jenis data digunakan untuk mengevaluasi efektivitas sistem pemantauan dan menyusun strategi penguatan yang sesuai dengan kondisi rumah sakit. Hasil penelitian menunjukkan bahwa kualitas air limbah domestik RSUD Shanti Graha secara umum memenuhi baku mutu dengan tingkat kepatuhan sebesar 93,75%, dimana 15 dari 16 hasil pengujian memenuhi baku mutu yang dipersyaratkan. Parameter kualitas air limbah menunjukkan tren yang relatif stabil selama periode penelitian, sedangkan ketidaksesuaian hanya ditemukan pada parameter pH sebesar 9,20 pada Desember 2022. Evaluasi efektivitas menunjukkan bahwa sistem pemantauan memperoleh skor 64,4% dan termasuk kategori cukup efektif. Hasil analisis mengidentifikasi kelemahan pada aspek dokumentasi, tindak lanjut ketidaksesuaian, kelengkapan parameter pemantauan, serta pencatatan operasional dan pemeliharaan IPAL. Berdasarkan hasil gap analysis dan SWOT, dirumuskan program prioritas penguatan sistem pemantauan untuk meningkatkan efektivitas pengelolaan lingkungan rumah sakit. Penelitian ini menyimpulkan bahwa kinerja IPAL RSUD Shanti Graha telah mampu menghasilkan efluen yang memenuhi baku mutu, namun efektivitas sistem pemantauan masih perlu diperkuat melalui penguatan dokumentasi, tindak lanjut hasil pemantauan, dan tata kelola sistem pemantauan agar pengelolaan lingkungan rumah sakit dapat berjalan lebih efektif dan berkelanjutan.

Kata Kunci: Air Limbah Domestik, Efektivitas Sistem Pemantauan, IPAL, Kualitas Air Limbah, Rumah Sakit.

ABSTRACT

Hospitals generate domestic wastewater that has the potential to cause environmental pollution if it is not properly managed and monitored. The success of wastewater management is determined not only by the performance of the Wastewater Treatment Plant (WWTP) but also by the effectiveness of the monitoring system that supports environmental control and continuous improvement. This study aimed to evaluate the effectiveness of the domestic wastewater quality monitoring system at RSU Shanti Graha and to formulate strategies for strengthening the monitoring system to support sustainable environmental management within the hospital. The study employed a Mixed Methods approach using a Sequential Explanatory design, beginning with quantitative analysis followed by qualitative exploration. Quantitative data were obtained from domestic wastewater quality test results at the WWTP outlet during the period 2021–2025, while qualitative data were collected through document reviews, observations, gap analysis, and SWOT analysis. The integration of both types of data was used to evaluate the effectiveness of the monitoring system and to formulate improvement strategies tailored to the hospital's conditions. The results showed that the domestic wastewater quality of RSU Shanti Graha generally complied with the applicable effluent standards, achieving a compliance rate of 93.75%, with 15 out of 16 monitoring results meeting the required standards. Wastewater quality parameters exhibited relatively stable trends throughout the study period, while non-compliance was identified only in the pH parameter, which reached 9.20 in December 2022. The effectiveness evaluation indicated that the monitoring system achieved a score of 64.4%, which falls within the moderately effective category. The analysis identified weaknesses in documentation, corrective follow-up actions, completeness of monitoring parameters, and operational and maintenance record-keeping of the WWTP. Based on the results of the gap analysis and SWOT analysis, priority programs were formulated to strengthen the monitoring system and improve the effectiveness of hospital environmental management. This study concludes that the WWTP at RSU Shanti Graha has been capable of producing effluent that complies with the applicable standards; however, the effectiveness of the monitoring system still requires improvement through enhanced documentation, follow-up mechanisms, and monitoring system governance to ensure more effective and sustainable environmental management.

Keywords: Domestic Wastewater, Monitoring System Effectiveness, Wastewater Treatment Plant (WWTP), Wastewater Quality, Hospital.