

INTISARI

TPA Dahegila di Kabupaten Pulau Morotai dengan luas ± 3.3 ha. Sejak beroperasi tahun 2016 menggunakan sistem *sanitary landfill*, TPA Dahegila mengalami berbagai tantangan yang menyebabkan terjadinya penurunan kualitas atau disfungsi sistem operasional TPA. Penelitian ini bertujuan untuk (1) mengidentifikasi sistem pengelolaan sampah TPA Dahegila, (2) mengidentifikasi faktor-faktor apa saja yang menyebabkan disfungsi sistem *sanitary landfill* TPA Dahegila, (3) menganalisis tingkat pencemaran lingkungan pada air anak sungai Cao akibat disfungsi sistem *sanitary landfill* TPA Dahegila serta (4) merumuskan strategi pengelolaan lingkungan pasca terjadinya disfungsi sistem *sanitary landfill* TPA Dahegila.

Metode penelitian menggunakan pendekatan survei, observasi lapangan, dan analisis laboratorium. Metode ini dilakukan untuk mendapatkan Identifikasi sistem pengelolaan akhir sampah di TPA Dahegila yang mengalami disfungsi dan pengaruhnya terhadap air anak sungai Cao serta merumuskan strategi pengelolaan lingkungan. Identifikasi sistem pengelolaan akhir sampah di TPA Dahegila dilakukan melalui survey langsung di lapangan dan data sekunder yang didukung dengan hasil wawancara. Pengujian laboratorium air anak sungai Cao digunakan untuk menentukan tingkat pencemaran yang meliputi parameter Suhu, TDS, TSS, DHL, COD, BOD, DO, N-Total, Kadmium (Cd), dan bakteri Total Coliform. Hasil pengujian selanjutnya dibandingkan dengan baku mutu air berdasarkan Peraturan Pemerintah Nomor 22 Tahun 2021.

Hasil dari penelitian ini menunjukkan bahwa sejak tahun 2016 TPA Dahegila dengan sistem *sanitary landfill* telah mengalami disfungsi hingga saat ini. Faktor-faktor yang mempengaruhi meliputi aspek peraturan, kelembagaan, teknis operasional, pembiayaan, dan peran serta masyarakat. Dari hasil pengujian laboratorium kualitas air anak sungai Cao, parameter yang memiliki nilai di atas baku mutu air Peraturan Pemerintah Nomor 22 Tahun 2021 kelas II adalah COD pada titik sampel T4 yakni sebesar 30 mg/L. Tingkat pencemaran berdasarkan perhitungan indeks pencemaran, titik sampel T3 dan T4 menunjukkan status mutu *cemar ringan*. Strategi pengelolaan lingkungan yang dapat dilakukan adalah dengan merehabilitasi TPA Dahegila menjadi lahan urug terkendali secara bertahap. Selain itu upaya pemanfaatan bangunan TPST3R dan bank sampah merupakan upaya untuk meminimalkan sampah yang masuk ke TPA. Pendekatan sosial kepada masyarakat dilakukan melalui sosialisasi rutin terkait pemilahan sampah di sumber dan pemantauan kualitas air anak sungai Cao secara berkala oleh dinas terkait.

Kata kunci: TPA, *Sanitary landfill*, Disfungsi, Kualitas air sungai, Strategi pengelolaan lingkungan

ABSTRACT

The Dahegila landfill in Morotai Island Regency covers an area of approximately 3.3 hectares. Since its operation in 2016 using a sanitary landfill system, the Dahegila landfill has experienced various challenges that have caused a decline in quality or dysfunction of the landfill's operational system. This study aims to (1) identify the waste management system at the Dahegila landfill, (2) identify the factors that cause the dysfunction of the Dahegila landfill's sanitary landfill system, (3) analyze the level of environmental pollution in the Cao tributary caused by the dysfunction of the sanitary landfill system at the Dahegila landfill, and (4) formulate environmental management strategies following the dysfunction of the sanitary landfill system at the Dahegila landfill.

The research methods used a survey approach, field observation, and laboratory analysis. These methods were used to identify the dysfunctional waste management system at the Dahegila landfill and its impact on the Cao tributary, as well as to formulate environmental management strategies. The identification of the dysfunctional waste management system at the Dahegila landfill was carried out through direct field surveys and secondary data supported by interview results. Laboratory testing of the Cao tributary water was used to determine the level of pollution, which included the parameters of temperature, TDS, TSS, DHL, COD, BOD, DO, N-Total, Cadmium (Cd), and Total Coliform bacteria. The test results were then compared with water quality standards based on Government Regulation No. 22 of 2021.

The results of this study show that since 2016, the Dahegila landfill with a sanitary landfill system has been dysfunctional to date. The influencing factors include regulatory, institutional, technical operational, financing, and community participation aspects. From the results of laboratory testing of the water quality of the Cao tributary, the parameter that had a value above the water quality standard of Government Regulation No. 22 of 2021 class II was COD at sampling point T4, which was 30 mg/L. The level of pollution based on the pollution index calculation showed that sampling points T3 and T4 had a status of slight pollution. The environmental management strategy that can be implemented is to gradually rehabilitate the Dahegila landfill into a controlled landfill. In addition, efforts to utilize the TPST3R building and waste bank are efforts to minimize waste entering the landfill. A social approach to the community is carried out through regular socialization related to waste sorting at the source and periodic monitoring of the water quality of the Cao tributary by the relevant agencies.

Keywords: Landfill, Sanitary landfill, Dysfunction, River water quality, Environmental management strategy