

ABSTRAK

Pencemaran limbah cair binatu disertai Kadar Surfaktan dan Fosfat yang melebihi baku mutu air limbah yang terdapat dalam limbah cair yang terus menerus membombardir kelestarian air bersih melalui *run off* telah menjadi mimpi buruk bagi kesinambungan ekosistem perairan. Sistem MSL (*Multi Soil Layering*) merupakan salah satu cara untuk menyelesaikan isu pencemaran air bersih. Efektivitas dan efisiensi dari sistem MSL berbasis lumpur belerang dari sumber air panas Krueng Raya (Aceh Besar) menjadikan latar belakang yang jelas bagi peneliti dalam upaya penyelesaian pencemaran air. Tujuan dilangsungkan penelitian ini agar dapat tercapainya jenama ke-enam dan ke-empatbelas *Sustainable Development Goals* (SDGs) 2030). Hasil yang didapat setelah dilakukannya penelitian ini yakni terjadinya penurunan angka pada kadar surfaktan, kadar fosfat, pH, dan *suspended solids* yang menunjukkan keberhasilan sistem MSL sebagai sistem remediasi limbah cair binatu.

Kata kunci : Surfaktan, Fosfat, Limbah Cair Binatu, MSL, Lumpur Belerang

Pollution of laundry wastewater accompanied by levels of surfactants and phosphates that exceed the quality standards of wastewater contained in liquid waste which continuously bombards clean water through run-off has become a nightmare for the sustainability of aquatic ecosystems. The MSL (Multi Soil Layering) system is one way to solve the issue of clean water pollution. The effectiveness and efficiency of the sulfur mud-based MSL system from the Krueng Raya hot springs (Aceh Besar) provides a clear backdrop for researchers in efforts to address water pollution. The aim of this research is to achieve the sixth and fourteenth brand of the 2030 Sustainable Development Goals (SDGs). The results obtained after conducting this research were a decrease in the number of surfactant levels, phosphate levels, pH, and suspended solids which shows the success of the MSL system as a remediation system for laundry liquid waste.

Keywords: Surfactants, Phosphates, Laundry Liquid Waste, MSL, Sulfur Mud

