

Analysis of BOD, COD, and TSS in Leachate at Batu Terang Landfill, Bontosalluang Village, Bissappu District, Bantaeng Regency

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Abstract. Leachate is a liquid waste that has the potential to cause environmental pollution because it contains toxic compounds and contains pathogenic microorganisms. Therefore, leachate should not be discharged directly into water bodies without prior treatment and known quality. Leachate is a liquid that seeps through garbage piles by carrying suspended solid, especially the result of the decomposition process of waste matter. To overcome the leachate problem, leachate treatment efforts are needed at the landfill site. This research is descriptive quantitative which aims to determine the quality of leachate at the Batu Terang Landfill (TPA) Bantaeng Regency.

Leachate samples were taken from 4 sampling points, namely reservoir wells, anaerobic ponds, facultative ponds and maturation ponds. Analysis of leachate quality based on parameters of temperature, pH, Biology Oxygen Demand (BOD), Chemical Oxygen Demand (COD), and Total Suspended Solid (TSS). According to the leachate quality standard requirements based on the Regulation of the Minister of Environment and Forestry of the Republic of Indonesia No. 59 of 2016, the results of research on the reservoir well are pH of 8.55; temperature of 29 °C; BOD of 1201.12 mg/l; COD of 4400.44 mg/l, and TSS of 59 mg/l; while in the anaerobic pond obtained a temperature of 25 °C, pH of 10.43, BOD of 2616.45 mg/l, COD of 9512.25 mg/l, and TSS of 161 mg/l. In the facultative pond, the temperature was 25 °C, pH of 9.33, BOD of 2163.07 mg/l, COD of 7199.16 mg/l, and TSS of 158 mg/l. In the maturation pond, the temperature is 25°C, pH of 8.51, BOD of 1856.87 mg/l, COD of 59975.50 mg/l, and TSS of 152 mg/l. The results of this study indicate that BOD, COD, TSS and pH have not met the leachate quality standard requirements caused by the absence of aeration processes in facultative and maturation pools, while the temperature has met the leachate quality standard requirements based on the Minister of Environment and Forestry RI No. 59/2016.

Keywords: Leachate, Batu Terang Landfill, BOD, COD, TSS.