THE IMPACT OF TRADITIONAL PETROLEUM MINING WASTE ON SURFACE WATER QUALITY IN KEDEWAN DISTRICT BOJONEGORO DISTRICT EAST JAVA

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ABSTRACT

Traditional petroleum mining is mining that produces liquid and solid waste which can cause environmental pollution. This research aims to determine the impact of traditional petroleum mining waste on surface water quality and calculate the level of surface water pollution. Research was carried out in November, using survey methods and purposive methods to determine the location and collection points for waste water and surface air. Petroleum wastewater and surface water samples have been taken using the grab sampling method. The waste water samples consisted of 6 samples in the form of 3 samples (B1, B2, B3) from oil wells that were operationally active 24 hours / day. 3 samples (C1, C2, C3) from operational passive oil wells 3 times for 4 hours/day. Surface water samples were taken at 6 points, namely A0 as control, 0km (A1), 0.5km (A2), 1km (A3), 1.5km (A4), 2km (A5). The parameters that have been tested include temperature, TDS, TSS, pH, BOD, COD, DO, fatty oil, ammonia, H2S and phenol. The quality of waste and surface water has been determined based on Minister of Environment Regulation No. 19 of 2010 and Government Regulation Number 22 of 2021. The level of water pollution has been determined using the Pollution Index (IP) method. The results of the research that has been carried out show that TDS, COD, fatty oil, NH_3 from active well waste (B) and COD, fatty oil from passive well waste (C) exceed quality standards. Surface water quality has TDS, BOD, COD, fatty oils, NH_3, and phenols exceeding class III water quality standards. The level of surface water pollution includes Light Pollution to Moderate Pollution. The farther the sample point is from *outlet* waste, pollution levels have decreased.

Keywords: *Surface Water, Water Quality, Petroleum Waste*