

Effect of Ultrasonic Treatment on The Quality of River Water

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Abstract. The increasing urban population in Makassar, South Sulawesi, continues to impact surface water quality, particularly in local rivers that receive various domestic and industrial discharges. This study investigates the impact and effectiveness of ultrasonic treatment on river water potentially containing microbial contaminants. Rather than aiming to implement ultrasonic technology in a full-scale treatment chain, this research focuses on understanding the ability of ultrasound to inactivate microorganisms through acoustic cavitation, which generates hydroxyl radicals, shock waves, and localized heat. Laboratory-scale experiments are conducted to observe and quantify changes in microorganism concentrations under different durations of ultrasonic exposure. The results aim to provide insight into the potential of ultrasound as a physical disinfection method for microbially contaminated surface water.

Keywords : Ultrasonic, Water Treatment, River Water, Microorganisms, Cavitation, Disinfection