**STUDI PENGARUH *UPFLOW VELOCITY* DAN *ORGANIC LOADING RATE* TERHADAP PENURUNAN BOD,COD, DAN TSS LIMBAH CAIR *ARTIFICIAL BLACK WATER* MENGGUNAKAN REAKTOR UASB**

**Ahzab Muttaqien \*) Syafrudin \*\*) Ganjar Samudro \*\*)**

Program Studi Teknik Lingkungan Fakultas Teknik Universitas Diponegoro

Jl. Prof Sudharto SH Tembalang Semarang

ahzabmuttaqien@gmail.com

**ABSTRACT**

Domestic wastewater from toilets is termed as fecal wastewater or "black water" with a high organic content. Black water in Indonesia is still largely done by processing flows into the septic tank. UASB reactor (*Upflow Anaerobic Sludge Blanket*) is the anaerobic reactor processing with influent wastewater flow in through the bottom up through the sludge blanket. UASB reactor has the ability to treat wastewater with high organic load and tolerant of shock loads. Therefore we need the existence of a study on the effectiveness of domestic wastewater treatment using UASB. Characteristics of domestic wastewater from the black water test results in the Gabahan Village, District of Semarang Tengah, Semarang has value 3.000 mg COD /l, BOD 1.218 mg/l, TSS 1.800 mg/l, temperature of 27.03 º C, and pH 7.13. UASB reactor in this study using a continuous system. Wastewater used in this study using artificial black water that are tailored to the characteristics of the Gabahan Village, District of Semarang Tengah, Semarang. Artificial black water is made using distilled water, glucose, and kaolin. Treatment of artificial black water using UASB, the value of efficiency for COD reduction ranged from 35.26 to 52.71%, ranging from 27.71 to 53.58% for BOD5 reduction, TSS reduction ranged from 35.38 to 76.36%.

Keywords: black water, UASB reactor, continuous system