ABSTRACT

Water is the most needed resource by living things on earth, not only humans need water but plants and animals also need water in their daily growth and development process. But lately, many water sources are contaminated by heavy metals, namely heavy metal iron (FE) and heavy metal copper (CU). Therefore, in this study, research is needed on the effect of heavy metal particle concentration in water on the receiver coil voltage on the eddy current testing (ECT) device which is one of the Non-destructive test (NDT) methods.

This study was conducted using self-made samples with heavy metal powders, namely iron (Fe) and copper (Cu). To determine the effect of the concentration of these metal particles in water on the receiver coil, the value of metal concentration in water will be mapped to the voltage value of the receiver coil. Data is obtained from measuring the receiver coil voltage value at 10 concentration values of each metal sample, where the sample will be dissolved in water. Therefore, this research will test two different objects, namely iron and copper. The test uses the eddy current testing method to get the results of test objects that affect the receiver coil voltage.

Keywords: Eddy Current Testing, Non-destructive Testing, heavy metals