INVESTIGATION OF SURFACE WATER ACIDIFICATION AT SEMENYIH DAM WATER RESOURCE AREA

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ABSTRACT

INVESTIGATION OF SURFACE WATER ACIDIFICATION AT SEMENYIH DAM WATER RESOURCES AREA

A study was done to analyze the state of acidification of surface water at Semenyih Dam. This study was conducted for one month on July 2008. The analyzing involves eight sampling locations. Four at entrance points of the following river (Semenyih, Kesuma, Lanjut and Rephen) and four at the middle of the Semenyih Dam. The water samples were analyzed both in-situ and in the lab for the following parameter which are (temperature, electrical conductivity and pH). Measurement for alkalinity was done in the lab. The cations and anions in sample are measured by Ion Chromatograph. From the results, it was found that the average of concentration of ions from sampling are HCO_3^- > Na^+> Ca^{2+} > SO_4^{2-} > K^+ > Cl^- > NO_3^- > Mg^{2+} > F^- > NH_4^+ > Br^-. Semenyih Dam also has average pH values which are from 7.51 to 7.64. This average can be classified as neutral and normal for freshwater. Alkalinity readings were from 21.42 mg/L to 134.66mg/L. Alkalinity which is indicates presence of HCO_3^-. HCO_3^- ions act as buffers, which are important because it slow the rate at which the pH changes. It is also was the important component of pH balance in water. Meanwhile, the average temperature values are around 29^0C and the value of acid neutralizing capacity (ANC) is high due to the excess amount of base cations compared to amounts of anions. The result also shows that electrical conductivity value is more than 25 µS/cm. The high value of alkalinity and ANC indicate the high buffering capacity of the dam. Therefore, the Semenyih Dam is currently classified as insensitive to acidification due to the value of pH, alkalinity and ANC.