

SURFACE WATER QUALITY ASSESSEMENT OF THE CHINI RIVER

HUSAM JALAL MEHDAWI

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## **ABSTRAK**

Kajian mengenai aktiviti antropogenik dan kualiti air dilakukan di Sungai Chini, dengan mengambil kira lokasi sungai yang terletak di antara Tasik Tasik Chini dan Sungai Pahang. Objektif kajian ini adalah untuk mengenal pasti kesan aktiviti antropogenik terhadap kualiti air berdasarkan national water quality standard (NWQS) and water quality index (WQI), Malaysia, dan untuk menentukan pengaruh sumber pencemaran parameter kualiti air di Chini Lembangan Sungai. Tiga stesen telah dipilih untuk diuji kualiti air permukaannya. Stesen 1 berada di aliran atas dan Stesen 3 di hilir. Data lima parameter dalam-situ dikumpulkan: dissolved oxygen (DO), temperature, pH, electrical conductivity (EC) and turbidity. Parameter lain total suspended solids (TSS), biochemical oxygen demand (BOD), chemical oxygen demand (COD), ammoniacal nitrogen (AN) dan logam berat telah diuji di makmal. Keputusan menunjukkan bahawa nilai BOD lebih tinggi di Stesen 3 berbanding stesen lain. Nilai BOD Sungai Chini lebih tinggi berdasarkan tahap ambang NWQS. Nilai TSS tertinggi dicatatkan di Stesen 1 dan kekeruhan di Stesen 3. Secara keseluruhan, Sungai Chini dikategorikan sebagai Kelas III berdasarkan WQI Malaysia, yang bermaksud air tidak boleh digunakan tanpa rawatan yang sewajarnya. Pihak berkuasa perlu mengambil tindakan untuk mengawal keadaan sungai dan mewujudkan kesedaran kepentingan air sungai di kalangan masyarakat.

## **ABSTRACT**

A study on anthropogenic activities and water quality was carried out in the Chini River, taking into account the location of the river which is between Tasik Chini Lake and the Pahang River. The objectives of the study were to identify the effect of anthropogenic activities on water quality based on national water quality standard (NWQS) and water quality index (WQI), Malaysia, and to determine the influence of pollution source on water quality parameter in the Chini River basin. Three stations had been chosen to be tested its surface water quality. Station 1 was at the upper stream and Station 3 on the downstream. Data of five in-situ parameters were collected: dissolved oxygen (DO), temperature, pH, electrical conductivity (EC) and turbidity. The other parameters such as total suspended solids (TSS), biochemical oxygen demand (BOD), chemical oxygen demand (COD), ammoniacal nitrogen (AN) and heavy metals were tested in laboratory. The results showed that BOD value was higher at Station 3 compared to other stations. The BOD value of the Chini River was higher based on the NWQS threshold level. The highest TSS value was recorded at Station 1 and the turbidity on Station 3. Overall, the Chini River was categorized as Class III based on WQI Malaysia, meaning the water cannot be used without proper treatment. The authorities should take action in controlling the condition of the river and establish the awareness of importance of river water among the community.