

IBAI RIVER BASIN WATER QUALITY ACCORDING TO THE
DEPARTMENT OF ENVIRONMENT WATER QUALITY INDEX AND THE
EFFICIENCY OF COAGULATION AND FLOCCULATION TREATMENT

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IBAI RIVER BASIN WATER QUALITY ACCORDING TO THE DEPARTMENT
OF ENVIRONMENT WATER QUALITY INDEX AND THE EFFICIENCY OF
COAGULATION AND FLOCCULATION TREATMENT

By
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**JABATAN SAINS KEJURUTERAAN
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**PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II**

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

KUALITI AIR LEMBANGAN SUNGAI IBAI MENGIKUT INDEKS KUALITI AIR JABATAN ALAM SEKITAR DAN KEBERKESANAN RAWATAN KOAGULASI DAN FLOKULASI oleh Mohd Shuib bin Ishak No.Matrik UK 7948 telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Kejuruteraan sebagai memenuhi sebahagian daripada keperluan memperoleh Ijazah Sarjana Muda Teknologi (Alam Sekitar), Fakulti Sains dan Teknologi, Universiti Malaysia Terengganu.

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ABSTRAK

Satu kajian penilaian kualiti air di Lembangan Sungai Ibai dan cawangan-cawangan sungainya telah dijalankan pada bulan Jun 2007 mengikut Indeks Kualiti Air Jabatan Alam Sekitar Malaysia telah dijalankan sepanjang bulan Jun 2007. Enam parameter yang dikaji adalah Oksigen Terlarut (DO), Keperluan Oksigen Biokimia (BOD), Keperluan Oksigen Kimia (COD), Ammoniakal Nitrogen ($\text{AN@NH}_3\text{-N}$), Jumlah Pepejal Terampai (TSS) dan pH. Nilai pH dan Oksigen Terlarut (DO) ditentukan secara in-situ dengan menggunakan alat Hydrolab Multi-Parameter Water Quality Meter. Parameter yang lainnya akan dianalisis berdasarkan kaedah piawai America Public Health Association (APHA). Seterusnya, Indeks Kualiti Air di Lembangan Sungai Ibai dikira dan diklasifikasikan berdasarkan Piawai Interim Kualiti Air Kebangsaan (INWQS). Kesimpulannya, kajian ini mendapati bahawa Indeks Kualiti Air Lembangan Sungai Ibai ialah 54.47 dan diklasifikasikan sebagai sedikit tercemar. Oksigen Terlarut (DO), Keperluan Oksigen Biokimia (BOD), Keperluan Oksigen Kimia (COD), Ammoniakal Nitrogen ($\text{AN@NH}_3\text{-N}$), Jumlah Pepejal Terampai (TSS) dan pH diklasifikasikan berada dalam Kelas III.

ABSTRACT

A study to assess the water quality of Ibai River Basin according to the Department of Environment Water Quality Index was carried out in June 2007. The river water was sampled four times at five stations along the Ibai River Basin and its tributaries. The six water quality parameters that were considered are Dissolved Oxygen (DO), Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Ammoniacal Nitrogen (AN@NH₃-N), Total Suspended Solids (SS) and pH. Dissolved Oxygen (DO) and pH was determined *in-situ* using the Hydrolab Multi-Parameter Water Quality Meter. Meanwhile, the other parameters were determined according to the standard methods by the America Public Health Association (APHA). Following, the Water Quality Index of Ibai River Basin was calculated and classified according to the Interim National Water Quality Standards. As a conclusion, it is found that the Water Quality Index for Ibai River Basin was 54.47 and classified as slightly polluted. The value of Dissolved Oxygen (DO), Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Ammoniacal Nitrogen (AN@NH₃-N), Total Suspended Solids (TSS) and pH was found to be in Class III. On the whole, the results from this research indicate that the Ibai River Basin is in Class III and classified as slightly polluted.