

ANALISIS PENGARUH PENGGUNAAN LAHAN TERHADAP KUALITAS AIR SUNGAI GAJAH WONG DI KOTA YOGYAKARTA

INTISARI

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Peningkatan jumlah penduduk dan lahan terbangun di Kota Yogyakarta, membawa serta efek negatif berupa meningkatnya pencemaran pada badan air sungai. Salah satu sungai yang sering menjadi tempat pembuangan limbah ialah sungai Gajah Wong. Beberapa penelitian terdahulu, mengungkapkan bahwa selain karena limbah rumah tangga, sungai Gajah Wong juga mengalami pencemaran dari aktivitas industri di sekitarnya. Akibat dari variasi penggunaan lahan tersebut dikhawatirkan kualitas air sungai Gajah Wong tidak lagi memenuhi standar untuk badan air sungai kelas II seperti yang tertera dalam Keputusan Gubernur DIY No. 22 Tahun 2007. Penelitian di badan sungai Gajah Wong Kota Yogyakarta ini bertujuan untuk mengetahui bagaimana pengaruh penggunaan lahan terhadap kualitas air sungai tersebut.

Metode yang digunakan ialah deskriptif-komparatif dengan plotting grafik pada peta untuk mengetahui pencemaran pada tiap titik. Pengambilan sampel dilakukan pada 9 titik yang mewakili jenis penggunaan lahan di sekitar sungai dengan metode *purposive sampling*. Analisis terhadap jenis penggunaan lahan menggunakan citra satelit serta pemetaan lapangan. Parameter kualitas air yang diuji dalam penelitian ini terdiri atas 8 parameter yang terbagi ke dalam parameter fisik, kimia organik dan anorganik serta mikrobiologi.

Hasil uji laboratorium menunjukkan bahwa nilai TSS berkisar antara 15 – 38 mg/l, pH antara 6,6 – 7,5 Nitrat 0,6 – 2,9 mg/l, BOD 7,2 – 36,99 mg/l, COD 15 – 38 mg/l, Fosfat 0,2 – 0,58, Minyak lemak 1000 – 5000 µg/l dan Total Coliform antara 9000 - \geq 240000 JPT/100 ml. Di antara hasil tersebut hanya 3 parameter yang tidak melampaui baku mutu yang ditentukan yakni TSS, pH dan Nitrat. Parameter lainnya seperti BOD, COD, minyak lemak dan Total Coliform mengalami peningkatan dari baku mutu yang ditetapkan. Titik yang paling banyak mengalami perubahan kualitas air ialah titik 3 dan 4 yang jenis penggunaan lahannya didominasi oleh permukiman padat serta industri kulit dan susu.

Kata kunci: Penggunaan Lahan, Kualitas Air, Limbah, Standar baku mutu

ANALYSIS OF THE INFLUENCE OF LAND USE ON WATER QUALITY IN GADJAH WONG RIVER, YOGYAKARTA MUNICIPALITY

ABSTRACT

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Yogyakarta municipality's increasing number of inhabitant and landuse, brings along negative effects to its rivers. One of the rivers considered to be the waste dump is Gajah Wong river. Studies conducted in this river have revealed that there is another source beside the domestical waste that cause its water quality decrease such as industrial activities. The variations in landuse along the Gajah Wong river, can bring depletion in its water quality based on the water quality standard of 2nd grade river body in the Act of DIY's Governor number 20/2008. This study was conducted to analyse the influence of landuse to the river's water quality.

The method used in this study was descriptive-comparative with graphical plotting in the map to show the impact in each sampling points. The method used in water sampling was purposive sampling, with nine sampling stations were selected based on the land use and were subsequently subjected to standard analytical procedures. Satellite image and land survey were used to analyse the landuse changing in the area. Water quality parameters observed were 8 parameters divided into physical, organic and anorganic chemical and microbiological.

The test conducted in laboratory demonstrates that TSS is valued between 15 – 38 mg/l, pH 6,6 – 7,5 Nitrate 0,6 – 2,9 mg/l, BOD 7,2 – 36,99 mg/l, COD 15 – 38 mg/l, Phosphat 0,2 – 0,58, Oil/Grease 1000 – 5000 µg/l and Total Coliform 9000 - \geq 240000 JPT/100 ml. Based on the result above, some parameters, such as TSS, pH and Nitrate are still on the range of water quality standard while BOD, COD, phosphat, Oil-grease and Total Coliform have overcome the Water Quality Standard. The sampling points in which the parameters been so much increased are points 3rd and 4th. These points are dominated mostly by urban areas and industrial activities such as milk factory and leather handicraft. According to the result, one can say that the quality of Gajah Wong river has not reach out with the standard of 2nd grade river body. To this result, water quality monitoring and controlling must be held regularly to restore the quality back to its normal designated beneficial water uses.

Keywords: Land use, Water quality, River and Water quality standard.