

ABSTRAK

Utamy Aprilia Nur Wahyuni
STUDI KUALITAS AIR SUNGAI KALI JAGIR SURABAYA DITINJAU
DARI KANDUNGAN KADMIUM (Cd) DAN TIMBAL (Pb) TAHUN 2022
xv + 89 Halaman + 12 Tabel + 13 Gambar

Sungai Kali Jagir Surabaya merupakan salah satu sumber air baku bagi instalasi pengolahan air di PDAM Surya Sembada Surabaya. Sungai Kali Jagir Surabaya berpotensi menerima air limbah domestik maupun industri yang dihasilkan dari aktivitas kota Surabaya. Kandungan kimiawi air limbah dapat berupa logam berat Cd dan Pb. Akumulasi Cd dalam tubuh manusia dapat mengakibatkan penyakit itai-itai. Akumulasi Pb dalam darah dapat merusak fungsi organ dan sistem tubuh manusia, terutama anak-anak. Tujuan penelitian ini adalah untuk menganalisa kualitas air Sungai Kali Jagir Surabaya ditinjau dari kandungan kadmium (Cd) dan Timbal (Pb) tahun 2022.

Penelitian ini merupakan penelitian observasional dengan pendekatan *cross sectional*. Objek penelitian adalah air Sungai Kali Jagir Surabaya. Sampel air diambil di hulu, tengah dan hilir sungai dengan replikasi 3 kali. Analisis data untuk menentukan kualitas air sungai Jagir Surabaya dengan membandingkan nilai baku mutu Badan Air Kelas I berdasarkan Peraturan Pemerintah Republik Indonesia Nomor 82 Tahun 2001.

Rata-rata kandungan kadmium (Cd) Sungai Kali Jagir bagian hulu, tengah, dan hilir sebesar 0,0005 mg/L. Rata-rata kandungan timbal (Pb) Sungai Kali Jagir bagian hulu, tengah, dan hilir sebesar < 0,010 mg/L, < 0,010 mg/L, dan < 0,012 mg/L.

Kesimpulan dalam penelitian ini bahwa kandungan kadmium (Cd) dan timbal (Pb) pada bagian hulu, tengah, dan hilir Sungai Kali Jagir sesuai standar baku mutu air kelas I. Saran dari penelitian ini diharapkan dapat dilakukan pemeriksaan sedimen dan biota untuk mengetahui keberadaan logam berat.

Kata kunci: Air Sungai, Logam Berat, Kadmium (Cd), Timbal (Pb)
Daftar bacaan: 45 (2001-2022)

ABSTRACT

Utamy Aprilia Nur Wahyuni

STUDY ON WATER QUALITY OF THE JAGIR RIVER SURABAYA VIEWING FROM THE CONTENT OF CADMIUM (Cd) AND LEAD (Pb) IN 2022

xv + 89 Pages + 12 Tables + 13 Images

Kali Jagir River in Surabaya is one of the sources of raw water for water treatment plants at PDAM Surya Sembada Surabaya. The Kali Jagir River in Surabaya has the potential to receive domestic and industrial wastewater generated from the activities of the city of Surabaya. The chemical content of wastewater can be in the form of heavy metals Cd and Pb. The accumulation of Cd in the human body can cause itai-itai disease. The accumulation of Pb in the blood can damage the function of organs and systems of the human body, especially children. The purpose of this study was to analyze the water quality of the Kali Jagir River in Surabaya in terms of the content of cadmium (Cd) and Lead (Pb) in 2022.

This research was an observational study with a cross sectional approach. The object of research was the water of Kali Jagir River, Surabaya. Water samples were taken upstream, middle and downstream of the river with 3 times replication. Data analysed to determine the water quality of the Jagir River in Surabaya by comparing the value of the Class I Water Agency quality standard based on the Government Regulation of the Republic of Indonesia Number 82 of 2001.

The average cadmium (Cd) content of the upstream, middle and downstream Kali Jagir River was 0,0005 mg/L. The average lead (Pb) content of the Kali Jagir River upstream, middle, and downstream was <0,010 mg/L, <0,010 mg/L, and <0,012 mg/L.

The conclusion was the content of cadmium (Cd) and lead (Pb) in the upstream, middle, and downstream of the Kali Jagir River was in accordance with class I water quality standards. Suggestions from this research will expect to be able to examine sediment and biota to determine the presence of heavy metals.

Keywords: River Water, Heavy Metals, Cadmium (Cd), Lead (Pb)

Reading list: 45 (2001-2022)