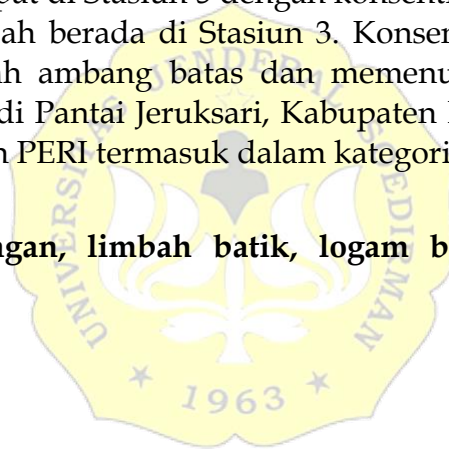


## ABSTRAK

Pantai Jeruksari Kabupaten Pekalongan merupakan salah satu muara dari aliran Sungai Sengkarang. Sepanjang aliran sungai Sengkarang banyak terdapat kegiatan industri batik. Banyaknya industri batik yang membuang limbahnya ke sungai Sengkarang berpotensi menyumbangkan cemaran berupa logam berat kromium (Cr). Logam berat tersebut bersifat toksik dan terurai dalam jangka waktu lama di perairan, sehingga keduanya dapat terakumulasi dalam sedimen. Metode yang digunakan pada penelitian ini adalah metode *survey* dengan teknik *sampling* menggunakan metode *random sampling*. Pengukuran logam pada sampel sedimen dilakukan menggunakan metode Spektrometri Serapan Atom (SSA)-Nyala pada SNI 8910:2021. Untuk mengetahui tingkat pencemaran dilakukan analisis menggunakan *Contamination Factor (CF)*, *Enrichment Factor (EF)*, *Geoaccumulation Index (Igeo)*, dan *Potential Ecological Risk Index (PERI)*. Konsentrasi logam berat Cr pada sedimen di Stasiun 1 sampai 6 berkisar antara 7,76-15,66 mg/kg dengan rata-rata sebesar 11,51 mg/kg. Konsentrasi logam berat Cr tertinggi terdapat di Stasiun 5 dengan konsentrasi sebesar 15,66 mg/kg dan konsentrasi terendah berada di Stasiun 3. Konsentrasi logam Cr tersebut masih berada di bawah ambang batas dan memenuhi baku mutu. Tingkat pencemaran logam Cr di Pantai Jeruksari, Kabupaten Pekalongan berdasarkan indeks CF, EF, Igeo, dan PERI termasuk dalam kategori tidak tercemar.

**Kata kunci :** Pekalongan, limbah batik, logam berat, kromium, indeks pencemaran.



## ABSTRACT

Jeruksari Beach in Pekalongan Regency serves as one of the estuaries for the Sengkarang River. The entire stretch of the Sengkarang River is characterized by a significant presence of batik industry activities. The considerable discharge of industrial wastewater into the Sengkarang River raises concerns about potential contamination with heavy metal chromium (Cr). Chromium is a toxic heavy metal that decomposes slowly in aquatic environments, leading to its accumulation in sediments. This study employed a survey method with random sampling techniques to assess the extent of contamination. Metal measurements in sediment samples were conducted using Flame Atomic Absorption Spectrometry (FAAS) based on the SNI 8910:2021 standard. Pollution levels were analyzed through Contamination Factor (CF), Enrichment Factor (EF), Geoaccumulation Index (Igeo), and Potential Ecological Risk Index (PERI). The concentrations of heavy metal Cr in sediments at Stations 1 to 6 ranged from 7.76 to 15.66 mg/kg, with an average of 11.51 mg/kg. The highest concentration of Cr was observed at Station 5 (15.66 mg/kg), while the lowest was recorded at Station 3. These concentrations fall below the threshold limits, meeting water quality standards. Based on CF, EF, Igeo, and PERI indices, the level of chromium pollution in Jeruksari Beach, Pekalongan Regency, is categorized as non-polluted.

***Keywords:*** Pekalongan, batik waste, heavy metals, chromium, pollution index.

