HUBUNGAN UKURAN BUTIR DENGAN SUSEPTIBILITAS MAGNETIK DAN KANDUNGAN UNSUR MINERAL MAGNETIK PASIR BESI PANTAI SUNUR KABUPATEN PADANG PARIAMAN

ABSTRAK

Telah dilakukan penelitian tentang hubungan ukuran butir dengan suseptibilitas magnetik dan kandungan unsur mineral magnetik pasir besi yang berasal dari Pantai Sunur Kabupaten Padang Pariaman. Pasir besi dikelompokkan menjadi lima kelompok yaitu ukuran butir > 0,850 mm (Kelompok I), 0,425 mm < ukuran butir ≤ 0,850 mm (Kelompok II), 0,180 mm < ukuran butir ≤ 0,425 mm (Kelompok III), 0,150 mm < ukuran butir ≤ 0,180 mm (Kelompok IV) dan ukuran butir ≤ 0,150 mm (Kelompok V). Pasir besi dipisahkan menggunakan ayakan ASTM *sieve series*. Pengukuran suseptibilitas magnetik menggunakan Bartington MS2 *Magnetic susceptibility meter*. Penentuan kandungan unsur mineral magnetik menggunakan *X-Rays Flourescence* (XRF). Hasil Penelitian menunjukkan pasir besi di Pantai Sunur Kabupaten Padang Pariaman didominasi oleh Kelompok II dan Kelompok III dengan ukuran butiran antara 0,180 – 0,850 mm. Persentase kandungan mineral magnetik tertinggi didapatkan pada Kelompok V yaitu sekitar 90,7 – 93,5 %. Kelompok V juga memiliki nilai suseptibilitas rata-rata tertinggi yaitu berkisar antara 4888,0 - 5512,8 × 10^{-8} m^3/kg. Hal ini disebabkan Kelompok V memiliki konsentrasi unsur Fe dan Ti tertinggi dan unsur Si terendah yaitu berturut-turut 42,9 %, 6,2 % dan 34,5 %.

Kata kunci: Pantai Sunur, suseptibilitas magnetik, ukuran butir pasir besi

THE RELATIONSHIP BETWEEN GRAIN SIZE OF IRON SAND FROM SUNUR BEACH DISTRICT PADANG PARIAMAN AND MAGNETIC SUSCEPTIBILITY AND ELEMENT CONTENT OF MAGNETIC MINERAL

ABSTRACT

The relationship between grain size of iron sand and the magnetic susceptibility and element content of magnetic mineral has been revisited. The iron sand is from Sunur Beach in Padang Pariaman. The grain sizes were classified into five groups, i.e., grain size > 0.850 mm (Group I), 0.425 mm < grain size ≤ 0.850 mm (Group II), (0.180 mm <grain size ≤ 0.425 mm) (Group III), 0.150 mm < grain size ≤ 0.180 mm (Group IV) and grain size ≤ 0.150 mm (Group V). The iron sand was separated by using the ASTM sieve series. Furthermore, magnetic susceptibility was measured by using the Bartington MS2 Magnetic Susceptibility meter. Finally, the content of magnetic mineral was analyzed by X-Rays Flourescence (XRF). It was found that the iron sand on Sunur Beach was dominated by Group II and III with the size of 0.180 – 0.850 mm. The highest percentage of magnetic mineral was about 90.7 – 93.5 %, and it was observed for the Group V. The Group V had also the highest magnetic susceptibility with the value of 4888.0 – 5512.8 × 10^{-8} m^3/kg. This result is consistent with the concentration of magnetic mineral element in which Fe and Ti are the highest concentration elements and Si was the lowest one. The concentration for such elements are 42.9 % and 6.2 % and 34.5 %, respectively.

Keyword: Sunur Beach, magnetic susceptibility, grain size of iron sand