GEOCHEMISTRY AND SEDIMENTOLOGICAL CHARACTERISTICS OF SETIU ESTUARY, TERENGGANU

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MALAYSIA
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Lihat sebelah

GEOCHEMISTRY AND SEDIMENTOLOGICAL CHARACTERISTICS OF SETIU ESTUARY TERENGGANU

BY

AMRI BIN MD SHAH

A Project report submitted in partial fulfillment of
the requirements for the degree of
Bachelor of Science
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JABATAN SAINS SAMUDERA
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KOLEJ UNIVERSITI SAINS DAN TEKNOLOGI MALAYSIA

PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:
Geochemistry and Sedimentological Characteristics of Setiu Estuary, Terengganu
oleh Amri Bin Md Shah, No. Matrik UK 6399 telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Samudera sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah Sarjana Muda - Sains Samudera, Fakulti Sains dan Teknologi, Kolej Universiti Sains dan Teknologi Malaysia.

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Bachelor of Science (Marine Science)

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CHAPTER 3

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LIST OF ABBREVIATIONS

°C	Degree Celsius
Ø	phi
Mm	micromater
gcm^{-3}	gram per centimeter cube
mL	milliliter
L	liter
mg/L	milligram per liter
ng/L	nanogram per liter
µg/g	microgram per gram
ppm	part per million
ppt	part per thousand
ST	Setiu
Al	aluminum
Cd	cadmium
Cr	chromium
Cu	copper
Mn	manganese
Zn	zinc
AAS	Atomic Absorption Spectrophotometer
EDTA	Ethylene Diamine Tetracetic Acid
ICP- AES	Inductively Coupled Plasma -Atomic Emission Spectrometry

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ABSTRACT

Heavy metal, organic carbon, particle size and physical parameters of Setiu estuary sediments were measured Heavy metal concentrations are 42.9 ppm Li, 5.2 ppm Al, 302.7 ppm, Mn, 52.9 ppm Co, 61.2 ppm Cu, 70.2 ppm Cr. The average mean size is 1.07±0.53 Ø which is medium sand. The content of organic carbon varied from 0.50 % to 2.36 % with average organic carbon of 1.83±0.80 %.

The analysis showed that geochemistry in the study area did not associate with sediment grain size. In this study, manganese shows strongest correlation with mean size, followed by Cu, Cr, Co, Li, and Al but the result of correlation between chemical elements with mean size had low correlation except for aluminum and lithium which have negligible correlation with mean size. The concentration levels of chemical elements showed no evidence of recent anthropogenic input.

The correlation between organic carbon and mean size reveals an almost neglible relationship with r- value of 0.078 indicate low correlation. For Cu, the correlation with organic carbon is almost negligible.

ABSTRAK

Kadungan logam berat, karbon organic, saiz partikel dan fizikal parameter di dalam sediment di muara Setiu telah diukur. Purata kepekatan logam di kawasan muara setiu adalah 42.9 ppm Li, 5.2 ppm Al, 302.7 ppm, Mn, 52.9 ppm Co, 61.2 ppm Cu, 70.2 ppm Cr. Dengan purata partikel saiz 1.07±0.53 Ø saiz sedimen adalah sederhana. Kandungan karbon organik di kawasan muara ini bervariasi dan mempunyai julat di antara 0.50 % to 2.36 % dengan purata peratusan sebanyak 1.83±0.80 %.

Analisi menunjukkan sifat geokimia muara tidak dipengaruhi oleh saiz sediment. Kajian ini menunjukkan hubungan korelasi yang kuat bagi logam mangan dengan saiz partikel. Bagi logam Cu, Cr, Co, dan Li. analisis menujukkan hubungan korelasi nya dengan saiz partikel adalah sangat lemah berbanding dengan logam Li dan Al menujukkan hubungan korelasi yang sangat lemah sehingga boleh diabaikan. Tahap kepekatan elemen kimia di kawasan ini tidak menunjukkan adanya kemasukkan dari sumber antropogenik.

Perhubungan di antara saiz partikel dan karbon organic bagi sediment di muara Setiu di dapati sangat lemah dan diabaikan dengan nilai r mencatat 0.078 di mana semua element kimia menunjukkan nilai korelasi yang sangat rendah berbanding logam kuprum yang mempunyai korelasi yang boleh diabaikan dengan karbon organik.