

DISTRIBUTION OF MERCURY IN SUNGAI KERTEH, DUNGUN,
TERENGGANU

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FACULTY OF MARITIME STUDIES AND MARINE SCIENCE
UNIVERSITI MALAYSIA TERENGGANU

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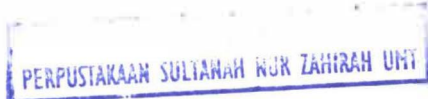
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Distribution of mercury in Sungai Kerteh, Dungun, Terengganu ,
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**DISTRIBUTION OF MERCURY IN SUNGAI KERTEH, DUNGUN,
TERENGGANU.**

By:

Nurashiqin Bte Sallih Udin

**Research Report submitted in partial fulfillment of
the requirements for degree of
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UNIVERSITI MALAYSIA TERENGGANU
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**JABATAN SAINS MARIN
FAKULTI PENGAJIAN MARITIM DAN SAINS MARIN
UNIVERSITI MALAYSIA TERENGGANU**

**PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II**

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: **Distribution of mercury at Kerteh River, Dungun, Terengganu** oleh **Nurashiqin Bte Sallih Udin**, No.Matrik **UK12042** telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Marin sebagai memenuhi sebahagian daripada keperluan memperoleh Ijazah Sarjana Muda Sains (Sains Samudera), Fakulti Pengajian Maritim dan Sains Marin, Universiti Malaysia Terengganu.

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LIST ABBREVIATION

SYMBOLS

g	Gram
°C	Degree Celcius
Hg	Mercury
HgS	Mercury Sulfide
µm	Micro meter
Fe	Ferum
Mn	Manganese
Ca	Carbonate
Hg (0)	Elemental Mercury
HNO ₃	Nitric Acid
PSA	Particle Size Analysis
H ₂ O ₂	Hydrogen Peroxide
HCL	Hydrochloric Acid
ICP-MS	Inductively Coupled Mass Spectrometry
APDC	Ammonium pyrolidine thiocarbonate
MIBK	Methyl isobutylketone
HF	Phosphoric Acid
CVAAS	Cold Vapor Atomic Absorption Spectrometry
CRM	Certified Reference Method
µg/g	Micro Gram per Gram

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ABSTRACT

This study is carried out in Kerteh River to study about the mercury distribution in that particular area during pre monsoon and post monsoon. Different types of samples such as sediments, water and fish are collected at the eight different stations for both of the monsoons. The samples are analyzed by using ICP-MS (Inductively Coupled Mass Spectrometry) or CVAAS (Cold Vapor Atomic Absorption). Instead of determining the mercury concentration, total organic carbon analysis and particle size analysis also been conducted to the sediments sample to find the correlation between them. The overall concentration of mercury in the sediments do not exceed the safety level indicates non-polluted area. The water sample showed extremely low concentration of mercury. Fish are captured using fishing gear. A few different species were collected during both monsoons. Predatory fish showed high concentration of mercury, but do not exceed the safety level. Overall Kerteh River is not polluted with mercury, and human are safe to consume the fish from this area.

Taburan Kepekatan Merkuri di Sungai Kerteh, Dungun Terengganu

ABSTRAK

Kajian ini dijalankan di Sungai Kerteh, untuk mengkaji taburan merkuri di kawasan kajian ketika pra monson dan pasca monson . Sampel yang berbeza seperti sediment, air dan ikan telah di ambil dari lapan stesen yang berbeza bagi kedua-dua monson. Sample-sample itu kemudiannya akan di analisis menggunakan ICP-MS (Inductively Coupled Mass Spectrometry) atau CVAAS (Cold Vapor Atomic Absorption). selain dari menganalisa kepekatan merkuri, analisa pertusan karbon organik dan analisa saiz partikel turut dilakukan pada sampel sedimen, untuk melihat korelasi antaranya. Secara keseluruhannya kepekatan sedimen masih tidak melebihi tahap bahaya. menunjukkan bahawa kawasan ini belum tercemar. Kepekatan merkuri dalam air pula menunjukkan bacaan yang sangat rendah. sampel ikan diperolehi dengan menggunakan alatan memancing yang sesuai. Beberapa jenis sampel ikan yang berbeza telah diperolehi bagi kedua-dua monson. Ikan pembangkai atau karinivor menunjukkan kepekatan merkuri yang tinggi tetapi masih tidak melebihi tahap bahaya. Secara keseluruhannya kawasan kajian adalah selamat dan belum dicemari oleh merkuri. ikan di kawasan itu juga selamat untuk di makan.