

THE INFLUENCES OF TIDAL CYCLE TO THE IN-SITU  
PHYSICO-CHEMICAL PARAMETER IN ESTUARY AT  
CHUKAI-KEMAMAN, RIVER BASIN, TERENGGANU

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PARAMETER IN ESTUARY AT CHUKAI-KEMAMAN, RIVER BASIN,  
TERENGGANU.**

**By**

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## ABBREVIATIONS

$\text{ms}^{-1}$  : Meter per second

m : Meter

GPS : Global Positioning Systems

NTU : Turbidity Units

Ppt : Parts Per thousand

$\text{M l}^{-1}$  : Miligram per liter

DO : Dissolved Oxygen

$^{\circ}\text{C}$  : Degree Celsius

$\text{CO}^2$  : Carbon Dioxide

## **ABSTRAC**

This study regarding the influences of tidal cycle to in-situ physico-chemical in tidal estuary was conducted at Chukai-kemaman river basin, Terengganu. Sampling was done twice at 12 stations on 30<sup>th</sup> April 2009 and 7<sup>th</sup> August 2009. During samplings has two high tides and two low tides occur each tidal day, the tide is semidiurnal. Several of parameter has significant changes affected by tidal cycle such dissolved oxygen, temperature, salinity, turbidity, current movement and current direction while pH was not affected. Even though, a few parameters has significant correlation between other parameters. For example, the temperature was high, the salinity and dissolved oxygen was low. Besides that, if salinity was high, the dissolved oxygen was low moreover, the salinity concentration influenced by tidal current. While, turbidity was high when the dissolved oxygen was low. Physico-chemical pamaters also affected by position and depth each station. The presented of tidal cycle every day would affected the parameters reading at Chukai-kemaman estuary.

# **KESAN PASANG SURUT AIR KEPADA PAMETER IN-SITU FIZIKO-KIMIA DI MUARA CHUKAI-KEMAMAN, LEMBANGAN SUNGAI TERENGGANU**

## **ABSTRAK**

Kajian mengenai kesan pasang surut air kepada parameter fiziko-kimia secara *in-stu* telah dijalankan di muara Chukai-Kemaman, lembangan sungai Terengganu. Pengambilan sampel secara *in-situ* telah dijalankan 2 kali iatu pada 30/04.2009 dan 07/08/2009 pada 12 stesen yang berlainan. Terdapat 2 kali pasang tinggi dan 2 kali pasang rendah di muara sungai Cukai-Kemaman dimana ia menandakan bahawa di tempat berkenaan mengalami pasang surut 'semidiurnal'. Sesetengah parameter fiziko-kimia mengalami perubahan kesan kepada aktiviti pasang surut air seperti kandungan oksigen terlarut dam air, suhu, salinitI, kekeruhan air, pergerakan air dan halaju air. Manakala parameter seperti pH tidak mengalami perubahan secara langsung apabila terjadinya pasang surut air. Nemun demikian, ada juga parameter yang saling berkait antara satu dengan yang lain misalnya, peningkatan suhu akan menyebabkan kandungan garam dan oksigen terlarut dalam air akan menurun. Selain itu, peningkatan salinity akan meningkatkan pH air dan salinity dipengaruhi oleh halaju air kesan kepada pasang surut. Manakala, kekeruhan akan tinggi apabila kandungan oksigen terlarut rendah. Parameter fiziko-kimia r ini juga dipengaruhi oleh kedudukan dan kedalam setiap stesen yang berlainan. Kehadiran pasang surut yang berlaku setiap hari akan mempengaruhi setiap bacaan parameter di muara Chukai-kemaman.