

UNIVERSITI TEKNOLOGI MARA

**ASSESSMENT OF SOCIOLOGICAL AND
ECOLOGICAL IMPACT OF RIVER SAND MINING IN PERAK**

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DECLARATION

I declare that this thesis entitled "Assessment of Sociological and Ecological Impact of River Sand Mining in Perak" is the result of my own research except as cited in the references. The thesis has not been accepted for any degree program and is not concurrently submitted in candidature of any other degree program.

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ABSTRACT

Introduction: Sand mining frequently causes land use conflicts in populated areas due to its negative benefits such as noise and dust produce by machines, ongoing truck traffic, and decrease yield of crop production, pollution and visually barren landscapes. Thus, an assessment on sociological and ecological impact on river sand mining in Perak had to be done.

Literature Review: Sand mining are of several types such as bar scalping, dry pit excavation, wet pit mining, and in-stream gravel trap. Sand mining activity has created many impacts (namely sociological, ecological and health impacts). The legal compliance should be under EIA order 1987 and Environmental Quality (Industrial Effluents) Regulations 2009.

Methodology: the water sampling was done upstream (n=10) and downstream (n=10) at the Perak river near Bota Kiri. Besides that, water sampling also was taken in well water (n=15). There were also in-situ test done with hydrolab to measure pH, Ammonium, Turbidity, Depth, Total Dissolved Solid, Temperature, Salinity, and Conductivity. Ex-situ analysis was done in the environment lab with DR2800 (HACH) being used to measure Boron, Fluoride and Nitrate followed by AAS for Cadmium, Lead and Copper.

Findings and Data Analysis: The results found that the mean for the physical and chemical parameter tested showed that ten (10) parameter such as total chlorine, depth, luminescent dissolved oxygen percentage (LDO %), luminescent dissolved oxygen NTU (LDO NTU), nitrate, ammonium, salinity, total dissolved solid, turbidity and pH have significance value (p -value<0.05).

Discussion: These study objectives were met during the course of the research. It found that lowered bottom of river can cause the sea salt water intrusion to be happened thus give high salinity in water. Furthermore, the well water also get affected by river pollution. High salinity of river water has been percolated into well water. It is found that depth of well water also become more shallow and this result the concentration of certain chemical may increased and make it not suitable for drinking water. For recommendation, the sand miner should not overexploit the river sand mining to avoid it impact on land erosion or land degradation. Besides that, sand mining activity should retain the riparian buffer at the edges of water in which to avoid any bank erosion. The monitoring also be done includes the depth of river bed and also water quality parameter such as turbidity and salinity in which very sensitive to sand mining activity

Conclusion: River mining has a major impact to