

Pollutant Loads of Urban Runoff from a Mixed Residential-Commercial Catchment

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Abstract : Urban runoff quality for a mixed residential-commercial land use catchment in Miri, Sarawak was investigated for three storm events in 2011. Samples from the three storm events were tested for five water quality parameters, Namely, TSS, COD, BOD5, TP, and Pb. Concentration of the pollutants were found to vary significantly between storms, but were generally influenced by the length of antecedent dry period and the strength of rainfall intensities. Runoff from the study site showed a significant level of pollution for all the parameters investigated. Based on the National Water Quality Standards for Malaysia (NWQS), stormwater quality from the study site was polluted and exceeded class III water for TSS and BOD5 with maximum EMCs of 177 and 24 mg/L, respectively. Design pollutant load based on a design storm of 3-month average recurrence interval (ARI) for TSS, COD, BOD5, TP, and Pb were estimated to be 40, 9.4, 5.4, 1.7, and 0.06 kg/ha, respectively. The design pollutant load for the pollutants can be used to estimate loadings from similar catchments within Miri City.

Keywords : mixed land-use, urban runoff, pollutant load, national water quality

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