

**CIA-0037: Impact of Industrial Effluents on Water Quality of Receiving
River in Gebeng Estate, Kuantan, Pahang**

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Abstract - Generally, industrial effluents contribute a lot of toxic pollutants to the environment. This study was carried out to investigate the effect of industrial effluent on surface water quality in Gebeng industrial estate, Pahang, Malaysia. The sampling water at selected points in the river were analyzed for temperature, pH, dissolved oxygen, biochemical oxygen demand (BOD), chemical oxygen demand (COD), electrical conductivity, total suspended solids, total dissolved solids, nitrate nitrogen, ammoniacal nitrogen, phosphate, sulphate and selected heavy metals. The selected parameters were characterized based on in-situ and ex-situ analysis according to standard methods by American Public Health Association (APHA). Heavy metals were determined by using Inductively Coupled Plasma Mass Spectrometry (ICP MS). The statistical software (SPSS 16.0) was used for data analyses. The results of the study revealed that industrial effluents were the major sources of pollutants in the study area. It was observed that the river water was containing high COD, BOD, NH₃-N values and higher heavy metal content. The study showed that the values for BOD, NH₃-N, copper and lead exceeded the permissible limit of Malaysia National Water Quality Standard (NWQS). According to NWQS, the major part of the river specially the mid-region was categorized as class V (very highly polluted) while some part was found to be in class IV (highly polluted) and rest of class III (polluted) as well. Based on Malaysian Water Quality Index (WQI), the most stations except lower and upstream were in class IV, and highly polluted. The present study was to evaluate the various adverse effects on surface water quality and suggested that the water in the river was not good for human consumption. Therefore, it is recommended that the careless disposal of wastes and directly discharge of effluents in the river should be discouraged, and the authorities should also implement the laws to ensure that their wastes do not affect the environment and the lives of the people.

Key words: Industrial effluents, Water quality Index (WQI), Heavy metals, Gebeng industrial estate.