



Title: Microtox Toxicity Assay for the Sediment Quality Assessment of Ganga River

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Abstract: The objective of this study was to determine the sediment quality assessment of Ganga River at Kanpur city where effluents from tannery industries are discharged. Sediment samples from control, upstream and downstream area were collected and analyzed for bacterial toxicity bioassay along with a reference sediment (LGC6137). The control samples collected from the point of origin of Ganga River at Deoparyag were found non toxic to the bacteria and served as negative controls for the test method. The EC50 of upstream sediment sample were >10,000 mg/L sediment (>1%) and categorized as non toxic according to toxicity classification. The down stream sediment samples were very toxic to the bacteria and average EC50 value was 4,266 mg/L (0.43 %) that falls in very toxic category. The downstream sediment and reference sediment were toxic but the later was 10-fold more toxic. It is indicated in our study that the Microtox SPT assay can differentiate between toxic and non-toxic samples over a wide range of toxicity. The present study demonstrated the efficiency of the Microtox SPT assay in the sediment quality assessment and confirms the existing pollution in Ganga River contributed by tannery industries.