



Analysis of Physico-chemical Factors and Estimation of Total Chromium in Water Samples Collected in and around TCCL Industry, Ranipet, Vellore District, Tamil Nadu, India

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Abstract: Tamil Nadu Chromate Chemicals Limited (TCCL), Ranipet, Vellore, Tamil Nadu, India was closed in the year 1997. The unused raw materials inside the industry leaches out during rain and contaminate the ground water. The Physico-chemical analysis of the water samples in and around the industry reveals that the total chromium content ranges from 701.311 to 849.569 mg L⁻¹ exceeding the maximum permissible limit in three stations and trace amount of Chromium in other stations. There is an increase in various parameters like pH ranging from 6.5 to 9.54, EC ranged from 474 to 4900 $\mu\text{mho cm}^{-1}$, TDS ranged from 332 to 3430 mg L⁻¹, BOD fluctuates from 9 to 36 mg L⁻¹, COD varies from 128 to 576 mg L⁻¹, chlorides vary from 22 to 1000 mg L⁻¹, sulphate varies from 14 to 1285 mg L⁻¹, calcium ranged from 18 to 363.8 mg L⁻¹, magnesium varies from 11 to 192 mg L⁻¹ and free ammonia ranged from 3.64 to 5.68 mg L⁻¹. There is a decrease in fluoride and phosphate concentration. It is evidenced that the chemicals dumped inside the industry has deteriorated the quality of water in and around the Industry.

Keywords: TCCL, Ranipet, Physico-chemicals factors, Chromium
