



## Geochemical Studies on Surface Water Quality in Lower Noyyal Sub – Basin, Cauvery River, Tamil Nadu, India

T. Pradeep and S. Ananda Kumar

Department of Civil Engineering, Kongu Engineering College, Perundurai-638 060, India  
E-mail: civil.pradeep@gmail.com

---

**Abstract:** Noyyal River is one of the important tributary of Cauvery River which is a vital source of state of Tamil Nadu. Water quality assessment in lower noyyal river was carried out in the year 2015 for both pre and post monsoon. There are 21 water samples were collected with an interval of 3 kms from lower noyyal river for the stretch of 59.471 kms towards the point where the noyyal river confluence with river Cauvery. The analytical results of  $\text{Ca}^{2+}$ ,  $\text{Mg}^{2+}$ ,  $\text{Na}^+$ ,  $\text{K}^+$ ,  $\text{CO}_3$ ,  $\text{HCO}_3$ ,  $\text{SO}_4^{2-}$ ,  $\text{Cl}^-$ ,  $\text{NO}_3$ ,  $\text{F}^-$ , pH, TDS and EC were compared with the International (WHO) standards to analyze the suitability of water for drinking purposes. The TDS concentration ( $658 \text{ mg L}^{-1}$ ) express large variation, which states that the water chemistry in the study area is not homogeneous and influenced by diverse contamination sources and geochemical process. The parameters Cl ( $397 \text{ mg L}^{-1}$ ) and N ( $45 \text{ mg L}^{-1}$ ) from the locations of 8 & 9 shows larger concentrations due to presence of industrial zone. The parameters of Mg ( $123 \text{ mg L}^{-1}$ ), Na ( $56 \text{ mg L}^{-1}$ ) and K ( $185 \text{ mg L}^{-1}$ ) shows higher concentration in the locations of 18, 19, 20 and 21. It is due to; the sampling stations are located at the place where the river noyyal is confluence with the river Cauvery and it is the place where the discharge of effluents from domestic and industrial processes on various part of the river is deposited. The proper treatment of industrial effluent is necessary before discharging effluent in to the river also stringent laws and regulations are to be implemented to protect the quality of the river water.

**Keywords:** Geochemistry, Surface water quality, Noyyal River, Physico - chemical parameters, Sub-basin

---