



Multivariate analysis of soil and ground water quality in Sidhi district of Vindhya Plateau

Indra Prasad Tripathi^{1*} and Arvind Prasad Dwivedi²

1. Pro-Vice-Chancellor & Dean, Faculty of Science & Environment, M.G.C.G.V. Chitrakoot Satna, Madhya Pradesh, **INDIA**
2. Project Fellow, Faculty of Science & Environment, M.G.C.G.V. Chitrakoot Satna, Madhya Pradesh, **INDIA**

Email: adarvindchitrakoot@gmail.com

Accepted on 17th January 2015

ABSTRACT

Ground water and soil samples collected from 20 different locations and analyzed for the physical properties, chemical properties and heavy metals contents in it. Pollution of water bodies is one of the areas of major concern to environmentalists. Water quality is an index of health and well being of a society. Industrialization, urbanization and modern agriculture practices have direct impact on the water resources. These factors influence the water and soil resources quantitatively and qualitatively the parameters like temperature, pH, turbidity, dissolved oxygen (DO) biochemical oxygen demand (BOD), chemical oxygen demand (COD), nitrate, nitrite, chloride, sulphate, phosphate and heavy metals for water analysis and temperature, pH, OC (organic carbon) total nitrogen, phosphorus, exchangeable cation (Na^+ , K^+ , Ca^{++} , Mg^{++}) and heavy metals for soil analysis have been studied. The mean values of each parameter together with its standard deviation (SD) and coefficient of variation (CV) were calculated. The present study deals with the various relationship derived statistically by calculation 'r' and 't' among the physico-chemical parameters. The ground water samples from few locations in the sidhi district are found to be polluted and not fit for the drinking purpose.

Keywords: Ground water, Soil, Heavy Metals, Correlation coefficient, Sidhi District, Water and Soil quality, Vindhyan Plateau.
