**PHYSICO-CHEMICAL STUDY OF WATER AND SOIL IN AND AROUND LIGNITE MINE OF RAJPARDI, BHARCUH, GUJARAT**

**Dr. C. P. Mistry\* AND Dr. N. Sharma**

**\*Department of Earth & Environmental Science**

**KSKV Kachchh University, Bhuj, Kachchh. Gujarat**

*Corresponding address: cpmistry2003@yahoo.co.in*

Lignite is one of the most important mineral resources of Gujarat state, and its exploitation has provided a major portion of revenue. Gujarat being located far from the various coal fields of India, the lignite found here happens to be the cheapest alternative of energy resources. Rajpardi is a village in district of Bharuch, South Gujarat. There are various types of clays, shales and carbonaceous rocks associated with the lignite beds of Tertiary age. Water samples were collected from different locations in and around the Rajpardi mine and were analyzed for different parameters like total hardness (calcium hardness & magnesium hardness), chloride, SO4, TDS, suspended solids, chemical oxygen demand, biological oxygen demand and electrical conductivity. Soil samples from different locations were collected and analyzed for different environmental parameters. Environment management plan (EMP) for Water, Soil, Surface watermanagement,Groundwater management,Waste water management,Reclamation of the mined areaand post mining environmental management are discussed. Based on the study, it is found that the ground water and surface water are contaminated with various acids for which some geological mitigation techniques are suggested.

***Keywords***: *lignite mining, sedimentary beds, geology, Tertiary age, fossil fuel*