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GEOCHEMISTRY OF GROUNDWATER IN AND AROUND MANGAMPETA BARITE DEPOSIT, CUDDAPAH DISTRICT, ANDHRA PRADESH, INDIA

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Abstract

Hydrogeochemical study was undertaken to assess the quality of groundwater and it's suitability for domestic and irrigation purposes in and around Mangampeta barite mining area, covering the Obulavaripally mandal of Cuddapah district, Andhra Pradesh, India. The rock formations of the study area belong to Cuddapah supergroup and the important litho-units consist chiefly of quartzites, limestones and shales. Mangampeta barite deposit occurs in the Pullampeta formation of Cuddapah system. The deposit is inter - layered with thick bands of grey and black shales. Fifty groundwater samples were collected from the bore wells and hand pumps representing the entire study area. Quality analysis is made through the estimation of TDS, TH, Ca^{++}, Mg^{++}, Na^{+}, K^{+}, CO^{-2}_{3}, HCO^{-}_{3}, Cl^{-}, SO_{4}^{-}, NO^{-}_{3} and F^{-} in addition to pH, and Ec. In the study area pH ranges from 6.85 to 9.7, Ca^{++} from 18 to 381mg/l, K^{+} from 2 to 80mg/l, Na^{+} from 12 to 68mg/l, CO^{-2}_{3} from 0 to 30mg/l, HCO^{-}_{3} from 260 to 817mg/l, Cl^{-} from 53 to 475mg/l, SO_{4}^{-} from 4 to 100mg/l, F^{-} from 0.19 to 0.58mg/l, TH from 105 to 505mg/l and NO^{-}_{3} from 0 to 54mg/l. It is found that water quality is suitable for both domestic and irrigation purposes.

Keywords: Groundwater, Geochemistry, Barite deposit, Mangampeta, Cuddapah Basin, Andhra Pradesh.