

GENESIS OF PROTEROZOIC BARYTES IN CUDDAPAH BASIN OF ANDHRA PRADESH IN SOUTH INDIA

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Barytes in Cuddapah basin could be grouped into three litho-types i.e., basalt, shales and dolomites. Barytes in association of particular litho-unit, show distinct colour. Basalts which are Archaean in age, host snow-white variety, dolomite hosts milky-white type and shales host black type of barytes. Colour variation is due to the presence or absence of solid and chemical impurities in barytes. Barytes in proterozoic sediments i.e., shales and dolomites are stratiform in nature and are found in basement highs at near vicinity of Archaean barytes in basic volcanics. Barytes in shales is sandwiched between grey shales and black shales reflecting oxygenated and anoxic condition of deposition of the sediments. Barytes deposition coincides with Dysaerobic condition. Dolomites containing barytes deposits are supra-tidal carbonates deposited under evaporatic condition. Sulphur isotope studies of barytes in above mentioned litho units reveal that source of sulphur in sediment-hosted barytes is marine in contrast to volcanogenic source for those found in basic rocks. Source of barium for barytes in basic rocks is interpreted to be of volcanic while those in sediments are of continental source. The near site occurrences of barytes of two different geological ages and of diverse lithological associations, probably invoke the idea that recycling of barium from Archaean period due to mechanical and chemical disintegration of Archaean barytes produced sediment hosted barytes in proterozoic period. The barium was largely transported as adsorbed ions in clay particles transported to the depositional basin. Bacterial activity played vital role in concentration of barium and precipitation of barytes in syn-sedimentary condition.