

**A COMPARATIVE STUDY ON THE GEOCHEMISTRY AND
VULNERABILITY OF GROUND WATER TO POLLUTION
IN LIMESTONE AND DOLOMITE AREAS OF
ANDHRA PRADESH, INDIA**

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Abstract

Limestone and dolomite aquifers in Andhra Pradesh form an important source of groundwater. In the absence of an alternative surface water source, groundwater is used for agriculture as well as for domestic purposes. In the present paper a comparative study has been carried out on the geochemistry and vulnerability of groundwater to pollution in areas underlain by limestone and dolomite formations. Samples from both shallow and deeper aquifers were studied and the feasible mechanism of dissolution was identified. Considerable differences were also observed in the level of contamination in shallow as well as deeper zones of limestone and dolomite aquifers. Limestone aquifers were more prone to contamination even in the deeper zones, while only the samples from shallow dolomite aquifers were found to be contaminated. The interrelationship between Cl and NO₃ shows that natural attenuation of NO₃ also could be active in limestone aquifers.

Keywords: Ground water, Dissolution, Contamination, Limestone, Dolomite, Denitrification.