

**SOME OBSERVATIONS ON THE NATURAL ENVIRONMENTAL  
POLLUTION OF AQUIFERS IN MANNAR  
AND HAMBANTOTA**

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The tube and dug wells investigated were located mainly in sandy, loamy overburden underlain by limestones particularly in the Mannar area. Nearly 500 samples were analyzed over a period of 3 years.

## SECTION D

The results were as follows :

	1980	1983
Average specific conductivity ...	400 $\mu$ mhos/cm	420 $\mu$ mhos/cm
Average nitrate content ...	1.00 mg/l	1.34 mg/l
Average chloride content ...	200 mg/l	600 mg/l

Excessive lowering of the water table along the coastal region leads to saline intrusion and this effect seems to migrate gradually towards the land. The  $\text{Cl}^-$  content had increased three-fold during the last 3 years.

In the case of nitrates, the amount and distribution of rainfall, land use, disposed sewage etc. affect the leaching of nitrates below the root zone. The stability of nitrates in the unsaturated zone and in the aquifer is a significant factor that controls the pollution of ground water. In the tube wells the nitrate contents appear to be constant, caused possibly by the lack of oxidized carbon (average PV = 2 mg/l) detrimental to the existence of denitrifiers. Even though  $\text{SO}_4^{2-}$  levels are very high (300 mg/l) in tube and deep seated dug wells, the presence of low  $\text{SO}_4^{2-}$  contents in shallow dug wells (1 mg/l) indicates the existence of sulphate reducing bacteria.

### Reference

1. Adriano, D. C. *et al.*, (1972). Nitrate in unsaturated zone of an alluvial soil in relation to fertilizer nitrogen rate and irrigation level, *J. Environ. Quality*, **1**, 418-422.