E2-49: Hydrogeochemistry of the right bank of Samanalawewa Reservoir (II)

S Ganesharajah[1], S Perasiriyan[1],G H U A Wanigadewa[2]
([1]*Ceylon* Electricity Board, [2]Central Engineering Consultancy Bureau)

When impounding of Samanalawewa was attempted from March 1992, a water burst occurred in October 1992 on the right bank of Walawe ganga at 300 M downstream of the dam at reservoir water level 438.9 M EL and a steady leakage of 2.2 cumecs resulted. An attempt was made to interpret the water quality monitoring data, in order to assist in identifying hydrogeological regimes as well as general pathways to leakage in the right bank during subsequent impounding up to 444 M EL in July 1997.

Samples of reservior water and leakage water have been collected at monthly interval from Jan 1994 to Dec. 1997 and analyses were carried out at the dam site laboratory. Electrical conductivity (conductivity meter), total hardness, alkalinity, chloride and Sulphate-tritrimetic methods (BS:2690:1986), pH value, sodium and potassium (flame photometer) were analysed.

No abnormal variation or sudden increase of values of water quality parameters, were observed during the period of study, which suggest that a steady leakage path and steady hydrogeochemical conditions exist at the right bank abutment With the above results and other geological data it is concluded that the right bank is safe for impounding up to 444 masl.