

REFERENCES

1. Lawrence & Dharmagunawardana H.A (1981) The Ground Water Resources of the Vanathavillu Basin. Water Resources Board, Ground water division, Colombo. Sri Lanka.
2. Rushton K E & Redshaw S C (1978). Seepage and Ground Water Flow. Wiley Series in Geotechnical Engineering
3. Thomas R G (1973). Ground Water Models. Food And Agricultural Organisation of the United States. 1973 Report 21.
4. Verruijt A. (1970) Theory of Ground Water Flow. Macmillan and Co. Ltd. London.
5. Russel H Brown. et. al. 1972. Ground Water Management. A S C E Manuals and Reports on Engineering Practice - No 40
6. Walton William C. 1970. Ground Water Resource Evaluation. Mc Graw Hill Series in Water Resources and Environmental Engineering.
7. Ruston K R & Chan Y K (1961). Institution of Civil Engineers Proceedings Part II 1961. June. 281-296. A numerical model for pumping test analysis.

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