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Occurrence of Brackish Groundwater in Fractured Hard Rock Aquifers of Puzhakkal–Avanur area in Thrissur, Kerala

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Abstract: Brackish groundwater occurs in fractured hard rock aquifers along a narrow N–S fracture zone in Puzhakkal-Avanur area which is more than 17 km from the sea. Relative proportion of chloride and bicarbonate suggests intrusion of saline water into this fracture zone from low lying areas connected to saline backwaters. Pumping test data and variations in intensity of fracturing suggest similarity to discontinuous fracture network model. The possible causes for spatial and temporal changes in electrical conductivity of groundwater are discussed. Present studies indicate overflow of brackish groundwater from the semi confined aquifers through bores in some dug-cum- borewells of the area.

Keywords: Groundwater, Fracture aquifers, Hard rock terrain, Brackish water, Spatial and temporal variations, Thrissur, Kerala.