

BRACKISH AND SALINE GROUNDWATER IN VOLCANIC FORMATIONS IN DRY AREAS OF THE CANARY ISLANDS

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The Canary Islands are in the Saharan dry belt and subject to climatic aridity (100 mm to 200 of rainfall and more than 1000 mm/a potential evapotranspiration) except for the NE oriented slopes of the high islands, which may receive up to 1000 mm/a. In the arid areas the high atmospheric saline content and very low aquifer recharge produce brackish to saline water in the aquifers. The situation of Amurga, a phonolitic massif in SE Gran Canaria, and of Central Fuerteventura (the relatively low altitude, most arid island) is considered. In Amurga groundwater has 5 to 8 g/L total dissolved solids (TDS) and some degree of water-rock interaction. This water, about 10,000 years old, is abstracted for desalination. In Fuerteventura salinity in areas with depth, from 3 up to 20 g/L TDS. The origin, besides the aridity effect, is unclear and some possible explanations are presented, based on groundwater chemistry and environmental isotopes. Salinity pattern respond to geological characteristics (submarine volcanics, intruded bodies, subaerial flows).