

# DETERMINING PROTECTION AREA OF MINERAL WATER SPA IN CASE OF GEOTHERMAL INTEGRATION

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In some case both of mineral waters and thermal waters occurs in the same field. Although drinking water quality standarts are not signficiant in geothermal area, water quality is very important for mineral water spa which are used for bottling. However re-injection of thermal water is an obligation for sustainable geothermal utilization in these fields any case. Hence re-injected thermal fluid could be mixed into mineral water spa and affecte the mineral water quality negatively, depends on lithology and fracture media at integrated geothermal and mineral water system. Also there could be some necessary operation by using some strong acid in order to clean geothermal wells which narrowed and closed due to scaling of minerals. So preparing conceptual model and determination of protection area accurately in mineral water spa are urgent. In order to determine protection area, firstly T, K, S aquifer parameters are estimated by means of well drowdown test. And hydraulic gradient and groundwater velocity on groundwater flowpath direction could be determined by using groundwater heads. Drawing the watershed area support recharging area of mineral waters. The author thanks to Pamukkale University for Congress Support Project 2019KKP115 and ALA-SU Gıda San Tic.

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