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Heat transfer in cistern

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The cistern under investigation supplied cold drinking water for the local community in old days when city water distribution system and mechanical refrigeration systems were not available. Long-term underground cold-water cisterns had been used in the hot and arid regions. These cisterns provide cold drinking water during warm seasons for local communities. In this paper, the thermal performance of an underground cold-water cistern during the withdrawal cycles in warm seasons is investigated. The cistern is located in the central region the city of Yazd. The results show a stable thermal stratification in the cistern throughout the withdrawal cycle. The thermal stratification has different position in up and down of cistern. In the upper of surface cistern the thermal is different, because of several factors such as: thermal exchange among the upper layers of water and the domed roof, transfer of mass and evaporation due to entry air from the wind towers.

Biography

M R Khani has completed his PhD from Tehran Research and Sciences branch of IAU. He is the Head of Water Purification Research Center of IAUTMU. He has published more than 45 papers in international and national journals and has authored more than 40 books on environmental health engineering.

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