

Ergonomics Shallow Recharge Well for Sustainable Ground Water Resources

Authors : Lilik Sudiajeng, Wiraga Wayan, Lanang Parwita I Gusti

Abstract : This is the ongoing research started in 2013 with the final aim is to design the recharge wells both for housing and industry for ground water conservation in Bali - Indonesia. The research started in Denpasar Regency, one of the strategic areas in Bali. The research showed that there is some critical area of ground water resources, especially in north and west part of Denpasar Regency. It driven by the rapid increase of the tourism industry which is followed by the high rate of population, change of land use that leads to the decreasing of rain water catchment areas, and less awareness on preserve natural resources, including ground water. Focus Group Discussion concluded that in order to solve the problem of groundwater crisis, requires the contribution of all parties, started from making simple recharge well for housing. Because of the availability of land is limited and expensive, it is necessary to present an ergonomic shallow recharge well in accordance with the ability of the family or community. The ergonomics shallow recharge well is designed based on the data of hydrology and the characteristics of soil. The design is very flexible depending on the availability of land, environmentally friendly, energy efficient, culture-based, and affordable. To meet the recommended standard of ground water quality, then it equipped with a filtration and sedimentation ponds. Before design recharge wells is disseminated to the public, it is necessary to analyze the effectiveness of the wells to harvest and absorb rainwater into the ground.

Keywords : ergonomics, ground water resources, recharge well, sustainable

Conference Title : ICCEE 2016 : International Conference on Civil and Environmental Engineering

Conference Location : Tokyo, Japan

Conference Dates : September 05-06, 2016