

Integrated studies to investigate paleochannel aquifer in Dan Chang district, Suphan Buri province, western Thailand.

Climate change is currently causing droughts in many parts of Thailand especially in Dan Chang district, Suphan Buri province where many area are out of irrigation coverage and typical groundwater exploration are less successful due to groundwater shortage. Therefore the needs for other shallow groundwater (i.e. less than 15m deep) resources are prominent. This work uses integrated studies of remote sensing, geology and geophysics to identify the locations of paleochannels that contain shallow groundwater resources in Nong Makha Mong subdistrict, Dan Chang district, Suphan Buri province. Potential sites were selected using preliminary remote sensing analysis along with field surveys. The high resolution topography from aerial photos was generated and 2D resistivity imaging surveys were conducted in the selected sites to delineate the locations of the paleochannels. The drilled well proves a success of the geophysical survey to identify the shallow groundwater in paleochannel at depth of 3-15 meters with groundwater yield of 4 m³/hr. The sediments from the borehole suggest a combination of alluvial deposits and fluvial sediments. Due to the relative lower cost of drilling shallow well, this work can be used a pilot project for the local communities to search for shallow groundwater in paleochannel in the areas that face very drought crisis and have very little deep groundwater potential or shallow water resources.

Primary authors: Mr MUANGNOI, Songsak (Department of Earth Sciences, Faculty of Sciences, Kasetsart University); Mr CHAIMANEE, Niran (Department of Marine and Coastal Resources, Thailand); Dr PANANONT, Passakorn (Department of Earth Sciences, Faculty of Sciences, Kasetsart University)

Presenter: Mr MUANGNOI, Songsak (Department of Earth Sciences, Faculty of Sciences, Kasetsart University)

Track Classification: Environmental Physics, Atmospheric Physics, Geophysics and Renewable Energy