UNIVERSITI TEKNOLOGI MARA

ANALYSIS ON THE DURATION OF WATER ABSORPTION IN SOIL BY USING LOW FREQUENCY OF GROUND PENETRATING RADAR (GPR)

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Thesis submitted in fulfillment of the requirements for the degree of
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AUTHOR'S DECLARATION

I declare that the work in this thesis/dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Under Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Analysis on the duration for water absorption in soil by using Ground Penetrating Radar (GPR) is one of the process which is for underground mapping. For this project, it is used to select a suitable frequency for determining the water absorption in soil. This project is to map 3D design for water absorption in soil with high resolution. GPR uses electromagnetic frequencies ranging that are sent from a transmitter into the ground and reflected back to a receiver unit to create a reflection profile showing the results of the imaged area. The results of GPR profiles, enhanced using the GPR unit's software which is called Reflex software must be interpreted accurately in order to properly assess any feature of the study. The result of this project will be appearing in a digital drawing which is shown in the Reflex software when the GPR is running. The result will show the flow of water and the time taken of GPR to get the suitable accuracy of low frequency to get the best result of underground mapping. The result will process after finishing the survey work and it will show best frequency of GPR for mapping the water absorption in soil. From that we can know the flow of water in soil with the duration for water absorption by using a low frequency process by Ground Penetrating Radar.

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