Backfilling test in the groundwater recovery experiment (2) Effective factors on saturation of backfilling material

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The purpose of this study is to identify effective factors that dominate the saturation process of backfill material for drift closure by numerical simulation of the Groundwater REcovery Experiment in Tunnel (GREET). The GREET, where a part of experiment gallery is filled with in-situ groundwater, is being currently performed at 500m depth of Mizunami Underground Research Laboratory. The backfill test is conducted in the experiment gallery using drilling pits filled with backfill material to obtain fundamental data of its hydro-mechanical behavior during the GREET.
In this study, sensitivity analysis focused on the effect of swelling deformation, hydraulic conductivity and unsaturated characteristics of the backfill material has been carried out. The results showed that the unsaturated characteristics is the sensitive factor for saturation process of backfill material.

Keywords: Backfill material, Saturation process, Numerical simulation

