



## **Response of subsurface soils covered by sand clay liners to temperature variations**

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The use of sand clay liners as a cover for near surface material works as a heat insulator as well as a hydraulic barrier. The soil temperature profile below grade level is normally a function of soil type, dampness and state of compaction. The temperature rise and fall is closely related to the moisture content conditions within the strata. This study is aimed at investigating the effect of a sand clay liner placed on ground surface on the temperature moisture profile. A section of clay sand liners was constructed on site on top of a silty sand formation with some clay. The field section was observed for variable temperature and weather conditions over six month's period. 5TE Decagon sensors capable of recording moisture content, temperature and electrical conductivity connected to Em50 data loggers were employed. A weather station equipped with rainfall, temperature, humidity and wind sensors was installed on site throughout the period of the investigation. The measurements of electrical conductivity were found extremely sensitive to wetting and drying and to temperature changes. Profiles for dry soil being wetted and wet soil being dried out are presented and compared in this study. Mineralogy and chemical composition of the subsurface soil in addition to the chemistry of water do have a remarkable influence on shaping these profiles.