

MSCL AND X-RAY RADIOGRAPHY OF THE BOOM CLAY AND YPRESIAN CLAY STRATIGRAPHY



# On behalf of ONDRAF/NIRAS,

the Belgian organisation in charge at the management of radioactive waste Geotek conducted MSCL and X-ray logging of two target clay formations

#### AIMS

- To identify small and large scale lithological variations
- To provide geotechnical and geophysical parameters
- To visualise the effect of sample expansion and sample disturbance

Correlation with downhole geophysics links the MSCL data to more regional geological units, providing stratigraphical tie points, and ultimately improves the resolution of the downhole geophysics.

## TECHNIQUE

Geotek mobilised a Standard Multi-Sensor Core Logger (MSCL-S), and a X-ray Computer Tomography machine (MSCL-XCT) within a mobile containerised laboratory. Two Geotek Geoscientists accompanied the equipment and logged approximately 500 m of core within a 3.5 week period at 1 cm to 2 cm resolution.

### RESULTS

The high resolution MSCL data and 100 micron resolution X-ray images provided Ondraf/Niras with a multi-parameter stratigraphy that can be integrated with imaging of the natural and artificial structure within a core sample. This provided ONDRAF/NIRAS with vital information to help plan and determine laboratory testing, and aid their geological and geotechnical evaluation.



The electrical resistivity and natural gamma data indicates fining and coarsening grain-size sequences, and resolved features that were previously unidentified from the downhole geophysics. Formation boundaries and authigenic precipitates were observed from sharp changes in gamma density and P-wave velocity. Magnetic susceptibility differentiated the two clay formations, and sand due their relative magnetic mineral contents.

