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South East Regional Group

Meeting

Annual AGM &
The Ngonye Falls Hydroelectric Power Project – A Junior Supervising Engineering Geologists Experience

By Matt Cook (Mott MacDonald)

In Summer 2018 the presenter worked as a Supervising Engineering Geologist for a Ground Investigation for Western Power at Ngonye Falls, Sioma in the Western Province of Zambia. The Ground Investigation ran for 10 weeks and involved a total of 21 rotary core boreholes and 4 trial pits across the site with associated in-situ testing including SPT, variable and constant head permeability and packer testing, as well as a full programme of monitoring.

The talk will cover:

- The Regional Geology of Western Zambia
- The local geology as elucidated through the ground investigations
- Geotechnical challenges encountered during the project including:
    - Dealing with thick sequences of fine sands
    - Achieving good core recovery in variable ground conditions
    - Acquiring representative permeability results for the sandstone and the duricrusts
    - Designing a monitoring strategy to gain useful, accurate and reliable data
- Discussion on the results of the fieldwork including the ground model, geomorphological and hydrogeological setting and the geotechnical properties
- The presenter's experience working in a remote location and overcoming some of the logistical challenges such sites present

Background:

The Ngonye Falls power project is located near Sioma township, about 345 km upstream of Victoria Falls and 120 km upstream of Sesheke in the Western Province of Zambia. The Ngonye Falls HEP project is a run-of-river scheme on the Zambezi River using the potential of the Ngonye Falls by passing water from above the falls through hydropower turbines before returning water to the river four kilometres downstream.

The Geology of the Sioma field area comprises alluvial and aeolian sands overlying sandstones and a bedrock of dolerites and basalts.

Date: 12 January 2021 **Time:** 6pm

Join Teams Meeting: Click here to join the meeting

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Please let us know if you plan to attend: southeastrg@googlemail.com