The BASE Newsletter

Barberton, January 29, 2022

Two down, six to go!

Boreholes 3 ("crinklies") and 4A ("Distal LDC") terminated this past Wednesday, having drilled 280 and 340 m, respectively. The numerous improvements and corrections to the drilling procedure, implemented in early January, proved highly successful. In the past two weeks, each rig reached 15-20 m progress each day, delivering high-quality core. The excessive rains of this summer season also let off somewhat, allowing more drilling hours per day.

Since coring 15-20 m of very coarse-grained granular sandstones of the LDC "feather edge", 4A remained in monotonous but nevertheless (for sedimentologists) spectacular estuary-channel-fill facies, ca. 125 to TD. We came close to define a widespread "Italian sandstone", composed of red BIF grains, green shale and white tuff clasts. The core showed us that there is no deep-water-facies occupying the middle Moodies Group in the Saddleback Syncline.

We are not doing any geophysical logging of our boreholes because we can do all measurements we consider necessary on the oriented cores. It will be enough to run a directional survey to check whether (perpendicular-to-strike) azimuth and (45°) angle to horizontal have been maintained. This survey was done yesterday and today while the sites were dismantled. We will then leave only a few m of filled surface casing with a spot-welded cap.

After the upcoming long pay weekend, each rig will drive itself to Sites 4B and 4C, respectively, a distance of ca. 6 km along the Ameide forest road. The on-site geology team is looking forward to a few days without core trays!

A brand-new third drilling rig, type LF90, arrived a few days ago at Site 2 ("White Outcrops", ca. 6 km from Barberton) and will spud barely 10 m from the median of the paved R40 road. Because of its accessibility, it will require a fence (which went up yesterday) and 24-hour security. Starting this coming Tuesday, we hope to drill quickly (and uncored) through the weathered inter- and subtidal strata and into an Archean fluvial-tidal transition zone with numerous paleosols (and, we hope, some surprises!).

Frohes Forschen!  Christoph Heubeck, Nic Beukes

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