

Little Dome C

Beyond EPICA Oldest Ice Drilling Site (75.29917 °S, 122.44516 °E) – Season 2022/23

Situation Report #12, 14 December 2022

Personnel @LDC:

Romain Duphil (IGE), Romilly Harris-Stuart (LSCE), Gunther Lawer (AWI), Matthias Hüther (AWI), Julien Westhof (UCPH), Martin Leonhardt (AWI), Frank Wilhelms (AWI), Giuditta Celli (UNIVE, ISP), Johannes Lemburg, (AWI), Rob Mulvaney (BAS), Saverio Panichi (ENEA), Michele Scalet (ENEA), Andrea Devito (ENEA)

Personnel @DC:

Markus Grimmer (UNIBE), Florian Krauß (UNIBE)

Weather at LDC 5 pm: sunny

Meteo at DC 5 pm: T = - °C, Wind = - knt, Wind Chill T = - °C



Life in Camp is going on and many activities are underway. We are still working to obtain the best configuration for the drill, and we are trying to improve the system.

What we did today:

- we executed 6 runs: the first run terminated after 1,10 m due to very aggressive cutting with high current, on the surface we found a piece of the booster between the cutter and the drill head. The measured clearance of the cutter was 37/100 mm equaling a pitch of more than 7 mm; the second run yielded 2.13 m and we observed slight damage to the cutters; third and fourth run needed high load to start cutting and lost penetration, Martin called the current curve "Monument valley", anyhow 1.94 m and 2.25 m; we measured the pins on the coupling to the outer barrel, all 7.3 to 7.5 mm over the 114.3 mm tube = 129.3 mm diameter, except one 7.8 mm oversizing the drill in the 129.7 mm hole. We ground it to 7.4 mm and had a nice 3.08 m fifth run with the digital winch control (for JP "little Frank"); the sixth run terminated after 0.74 m with incredible packing of the chips. As the liquid level stayed for several runs at 127 m, where the hole narrows, we assume we involuntarily switched to dry drilling
- little improvements to the drill area were done: better extraction piece, support for pull-out of the drill string, digital winch control
- GPS stations S0 and N0 established by Gunther on skies
- first photographic run of photogrammetry array and series of 8 short cores taken and sample

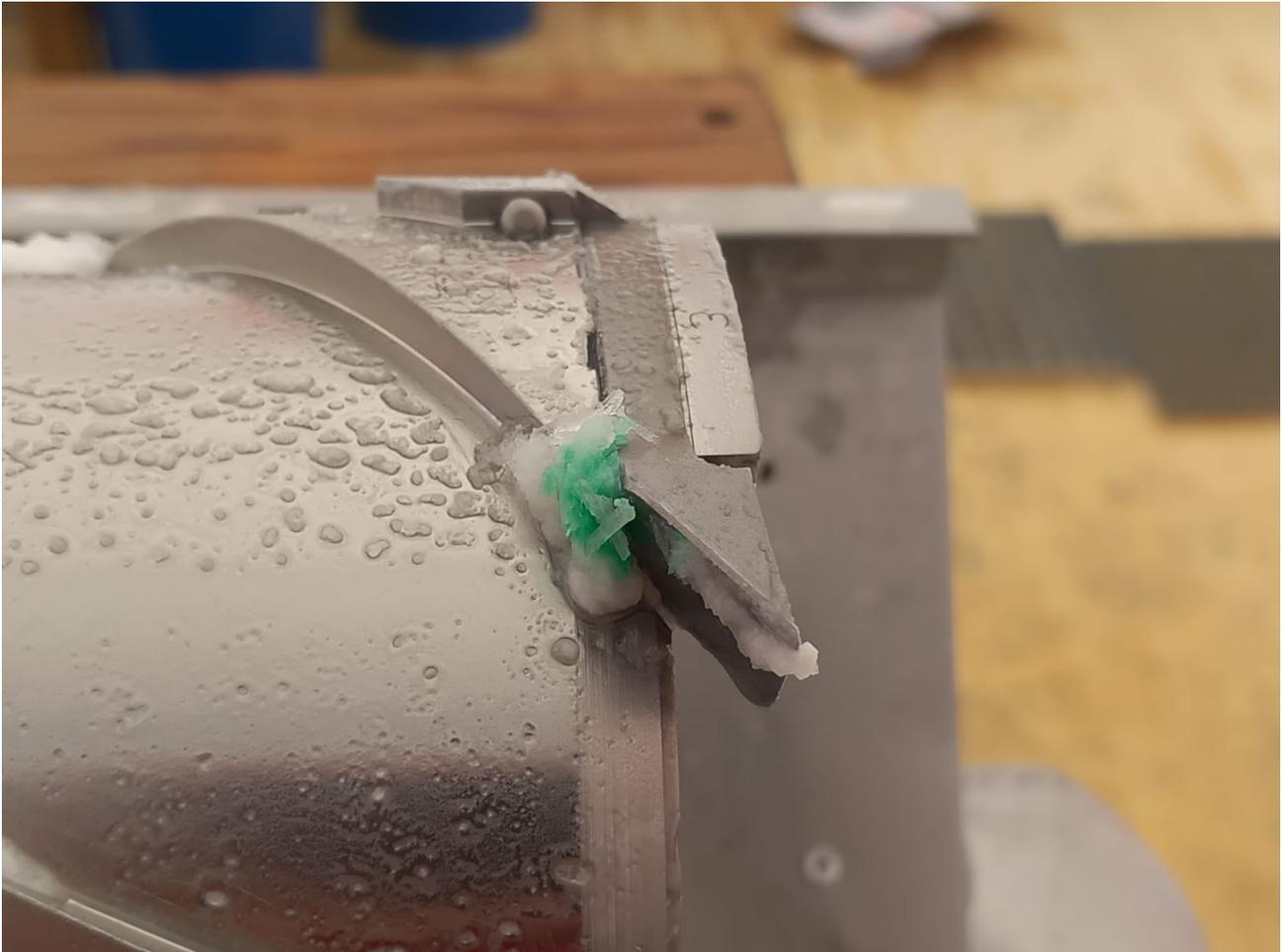
Drillers depth: 153.31 m

Delta D: 11.11 m

Loggers depth: 159.07 m

Delta D: 11.18 m





A detail of the drill head with some plastic pieces coming from the casing tubes.

FW & RM, 14.12.2022

