

## Little Dome C

Beyond EPICA Oldest Ice Drilling Site (75.29917 °S, 122.44516 °E)

Situation Report 11, 7. December 2023

### Personnel @LDC:

Saverio Panichi (ENEA, Camp Leader), Olivier Alemany (CNRS), Philippe Possenti (CNRS), Matthias Hüther (AWI), Rémi Dallmayr (AWI), Gunther Lawer (AWI), Johannes Lemburg (AWI), Andrea Ceinini (ENEA), Federico Scoto (CNR), Tamara Gerber (UCPH), Iben Koldtoft (UCPH), Julien Westhoff (UCPH), James Veale (BAS), Michaela Mühl (UNIB), Fortunat Joos (UNIB), and Inès Gay (IPEV)

**Weather at LDC 5 pm:** cloudy and windy

**Meteo at DC 5 pm:** -27°C and 15 knts



Today we focused on three areas. We have continued to process the core drilled last year, we have tried to solve the problems on the drill, and we have set up a ventilation system to cool the scientific trench. Indeed, temperature measurements taken in the trench show a steady rise in temperature (probably due to opening and closing doors, exposure of the entrance to the sun...) reaching -27°C yesterday, which is not ideal for core processing. To bring the temperature down a few degrees, we're going to pump air through pipes under the snow to cool it down, before blowing it into the scientific trench.

Concerning the drill: We finally solved the winch and mast tilting problem. However, we still have some instability in the motor section. Despite our daily trials and runs, we haven't managed to resolve this instability. We therefore decided to switch to the backup solution and use the Danish drill.

What we did today at LDC:

- We repaired the mast tilting system, while fixing one of the security switches on the tower pistons;
- We worked on the power transmission between the drill power supply and the motor section;
- We dug a 3 meters deep trench with the Pistenbully to install 20-25 meters of pipes under snow to refresh the science trench;
- We add a second ventilation in the “pig” Viessman;
- We are still processing the last year core and finished another 42 m in shifts.





Figure 2: Building a ventilation to cool the science trench: photo O. Alemany



Figure 1: Celebrating an all-female processing team: photo M. Mühl

End of day statistics:

Driller's depth: NA

Logger's depth: NA

Current processing depth: 692 m, daily total: 40 m, season total: 84 m.

OA, MH, JW, and SP, 07.12.2023

