

**TO EGRIP STEERING COMMITTEE MEMBERS, DANISH AND GREENLANDIC AUTHORITIES.**

**Expedition Permit C-18-5 EGRIP – SITUATION REPORT (SITREP) no.15, Sunday 05 August 2018**

This SITREP covers the period July 30 – August 05, 2018 (inclusive).

**Movement of personnel:**

**30. July:** Jørgen Peder Steffensen (DK) from Kangerlussuaq (SFJ) to Copenhagen by Air Greenland.

**03. August:** Jørgen Peder Steffensen (DK) from Copenhagen to Kangerlussuaq (SFJ) by Air Greenland.

**Movement of cargo:**

**30. July:** 45 CIC ice core boxes and 35 AWI ice core boxes (3400 kg) from SFJ to CPH by Air Greenland.

**30. July:** (AWB- 631-2748-9792) /5 cll. / 174kg / AWI equipment.  
(AWB- 882-0035 7291) Icelandair Cargo ehf. /1 cll. / 1kg / Spare parts for skidoo.

**31. July:** Cargo for University of Okayama/450 kg/22 cll. From SFJ to Japan by Air Greenland.

**04. August:** Food: fresh/392.4kg frozen/100kg dry/220kg from CPH to SFJ by Air Greenland.

**EGRIP camp activities:**

Test of Rocket disk communication system. The Pistenbullys have been repaired, particularly the Vebasto heating system on one. All six snowmobiles have been repaired and maintained. In order to increase storage space, excess snow from floor of storage balloon garage was removed. Empty foam boxes and shallow drill placed in balloon garage.

**Drilling:**

Drilling continues in two teams during the day and a filtering team during night. Logging from 1664.04 m to 1767.57 m. This is the final depth for 2018.

Detailed Drillers report 30/7 -> 6/8

1650.75m - 1754m = 103m (drillers depth)

After finishing a total of 14 filter runs and recovering ~350kg of slush from the borehole, the drilling could continue Tuesday morning. After a successful morning run, the NEEM drill electronics started to show weakness, and the second run was without an ice core. The drill was taken apart and the motor was tested with nothing attached to the output shaft. Symptoms was high current drawn on the motor side, and very slow rotation. Therefore excess friction had to stem from the insides. The fault was found to be a slow leak from the high pressure seals, causing the whole tube to be flooded with drill liquid. The electronics were wiped clean from fluid, and a few loose wires were resoldered. The top plug was changed, the pressure tube were reassembled, and it was tested to be fully working. The maintenance had extended through midnight, and due to extensive filtering the days before, the drilling were commenced right after, yielding 12 ice

cores the following night/day. After the overhaul of the NEEM tube, the drilling continued until Sunday midnight where the drilling stopped after 7 good ice cores, and a final drillers depth of 1754m (Monday August 6). The borehole will hereafter be filtered, and finally logged.

**Science:**

Processing from 1622.50 m to 1765.1 m (Monday August 6 is included as it was the last processing day in the science trench).

Isotope laboratory measured ice from 1390.40m to 1408.00m. On Wednesday CFA isotopes stopped for this year, and the rest of the week was spent packing down and documenting (bag 2560 final bag for 2018). Physical properties lab measured the last bag Sunday and during the week the ice measured was from 1565.30m to 1714.35 m.

Water vapor sampling and measurement continued as usual. Fresh snow on Thursday was intensively sampled.

GPS/drone: Installation of GPS strain net around RADIX site, 27 km from camp completed.

A 10 m firn core was drilled for our Korean colleagues at KOPRI.

**All ice processed in 2018:**

350.35 – 904.75 m (bags 638 – 1645), ca. 2,900 – 7,800 years.

1061.50 – 1759.45 m (bags 1931 – 3199), ca. 9,300 – 31,800 years

Bags 1646 – 1930 brittle ice is stored in ice core buffer for next year.

Bags 3200 – 3212 last drilled ice is logged and stored in ice core buffer for next year.

Over the last weeks, ice from the late last glacial period has been processed in the science trench. The age of the processed ice covers ca. 17,400 – 31,800 years (bags 2639 – 3199) and includes the Last Glacial Maximum and Dansgaard-Oeschger (D-O) events 2, 3, and 4. In the cold interval ca. 23.5 – 26.0 ka two characteristic periods of very high dust concentrations (up to 100x Holocene values) were observed similar to those seen in other Greenland ice cores. The annual banding is often visible to the naked eye in the dust bands (cloudy bands) in the ice and in the ECM measurement. Only a few, weak, volcanic acidity spikes were observed in the cold periods. The D-O events 3 and 4 were detected in ECM and visible stratigraphy in agreement with the preliminary EGRIP time scale based on linking of isochrones to the NGRIP drill site. The onset of D-O 3 occurs within 1 meter of ice and is visible in the line scan profile as dust concentrations change by a factor of 10. Around D-O events 3 and 4 a number of strong acidity spikes appeared, and a visible tephra layer occurred close to 1734.6 m depth. All potential volcanic spikes detected in DEP, ECM or visually have been sampled and put aside for swift tephra analysis.

**EGRIP Camp Population:** 32.

**EGRIP iridium numbers:**

Primary no.: +8816 7776 2837	Iridium Open port, field leader
Secondary no.: +8816 7776 2838	Common phone, main dome
Third no.: +8816 7776 2839	Handheld satellite phone

EGRIP night time phone to field leader: +8816 234 93 166

**EGRIP direct phone:** +45 7734 7444 ext. 401

Link to webcam and weather station: <http://alice.egrip.camp/>

**Weather at EGRIP:**

Overcast with sunny spells. On Tuesday a season temperature record was set at +0.6 C. On Thursday and Friday it was overcast with Christmas snow covering everything in a new layer. Sunday morning the polar bear radar gave an alarm caused by a shower of hail. Temperatures were between -16 C and + 0.6 C and the wind was between 10 and 12 knots most days from 220-310T, except Tuesday to Thursday where the wind was between calm and 4 knots from easterly directions.

**Kangerlussuaq activities:**

Handled in 27 ice core boxes to Air Greenland. A total of 80 ice core boxes was shipped to Copenhagen. Picking up laundry and sorting out clean gear in the warehouse and handing in more laundry (drill suits). Picking up food shipment and repacking into ice core boxes. Prepared 150 bamboo sticks for shipment.

**Weather in Kangerlussuaq/SFJ:**

The week started dry and warm. Then grey and overcast days with rain and evenings with high wind. Increasing sunny spells at the end of the week, and Sunday fine and really warm. Temperatures between 6 and 23 degrees. Mosquito situation has improved, only a few remain.

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