

NEEM - SITREP no. 13, Sunday July 20, 2008.

This SITREP covers the period July 14 – July 20, 2008 (inclusive).

Movement of personnel:

18th July: Vasilios Gnikis (DK) and Ernesto Kettner(DK) from SFJ to CPH by SAS/Air Greenland.

18th July: Sverrir Hilmarsson(IS), Anders Svensson(DK) and Lars Berg Larsen(DK) from NEEM on traverse towards NGRIP.

Movement of Cargo:

No movement of cargo.

Camp Activities:

Construction work has been going on in camp the whole week. The main generator has been running fine and cables have been laid through most of the camp so that by this week end all structures are powered by the main generator. There have been some problems with the heat exchange system which should distribute heat from the main generator engine to the main dome and the main snow melter. Using a different type of heat exchange, it appears that camp can now operate the snow melter and the radiators in the main dome. On Wednesday garage 2 was completed, and thus all structures in camp are now erected. In the main dome walls and tables and shelves have been constructed and people moved back from an interim dining area on the first floor to the ground floor on Saturday as the kitchen is nearing completion. An insulated main duct for water, power and heating has been constructed between the main generator and the main dome. An elevator has installed in the science trench. Tables and band saws have been setup in the science trench to allow for processing of shallow cores. A Viessmann heated cabin has been erected in the drill trench for drillers work shop. On Saturday most of the surface work has to be stopped as camp was hit by a blizzard with 14 m/s winds.

On Friday at 10:30 the planned traverse to NGRIP departed. The traverse will pickup remaining assets at NGRIP and perform re-measurement of the strain net setup in 2007.

Drilling:

Drilling business had had a very busy week. The main bore hole has been reamed to the end diameter of 281 mm, and Saturday the casing operation was completed. Prior to and after the casing the hole was inspected with a bore hole camera and footage was recorded. Now the drillers are busy constructing floors and mounting the infrastructure for the deep drill. The shallow drill was moved to the firn gas pumping sites, and parallel drilling and pumping began on Wednesday.

Science:

Firn air samples are collected for the following institutions: University of Copenhagen (Centre for Ice and Climate), University of Bern (Climate and Environmental Physics), Pennsylvania State University, INSTAAR

Boulder, NIPR Tokyo, University of East Anglia Norwich, LGGE Grenoble, LSCE Paris, CSIRO Aspendale, IMAU Utrecht.

Firn gas is extracted from two holes drilled 1.5 km, 220° from the main NEEM camp. The distance between the holes is 65 meter. Two air extraction equipments are used for the two holes, while drilling is done alternatively with the Danish 3-inch shallow drill. Sunday evening the gas pumping depths of the two holes are: 34.7 m (S2 core, Mainly the European programs) and 57.5 m (S3, Mainly the U.S. programs). A total of 108 samples have been collected to date from 8 depth levels and the surface.

CO₂ of the samples is monitored at both sites. The present surface concentration of 380.5 ppm is relatively low due to peak photosynthesis in northern latitudes. Max. CO₂ of 388.5 ppm is at 10 m depth then slowly decreasing with depth.

A 10-m temperature profile has been measured in a hand augered hole. The temperature at 9.8 m is -28.0 °C.

The firn cores from the gas programs have been logged, sampled for stable isotopes at 2.5 cm resolution and been measured by ECM. The melt layer from 1889 AD has been seen in the cores at 43 m depth. The processors have recorded two independent density profiles which are completely alike. The density profile at NEEM has thus been completed.

Weather:

Weather all week as been overcast with snow and windy, with winds at 6 – 10 m/s from S and SW. Temperatures from -6 C to -16 C. On Saturday camp was hit by a blizzard peaking at 14 m/s

Camp population: 29, on traverse 3

In Kangerlussuaq, weather has been dry and warm up to 20 C. The FOM is preparing cargo for the flight next week. Mosquitoes almost gone.

NEEM Field operations office,

Jørgen Peder Steffensen