

# SITREP 11, January 17, 2010

Ken Taylor (SCO; Chief Scientist) and Anais Orsi (SCO Rep)

Written at WAIS Divide

Drilling and core handling are going well, but we did have some mechanical issues. We are encountering occasional "cloudy layers" in the ice.

## I. DRILLING

- A. We are drilling about 10 runs a day with excellent core quality. There were three mechanical problems with the drill this week. The drill head, the level wind sheave bearing, and the tower crown sheave bearing all had failures. Nicoli Mortenson and Rob Kulin were able to fix each problem in about half a day, and showed the need to have a full machine shop on site. The hole inclination has stabilized at less than 4 degrees. The azimuth sensor is not working and cannot be fixed in the field. This week we drilled 48 runs, which brought up 157.89m of ice, ending at 2330.82m. We have eight days of drilling left, and expect to end up at depth of ~2,500 m.

## II. CLOUDY (ASH?) LAYERS

- A. We were expecting an ash layer from Mt Berlin at 15kaBP (2240m on Neumann time scale). We found a series of cloudy layers, some more pronounced than others at 2251.12m (16mm), 2254.002m (1mm), 2268.634m(9mm), 2290.975m (1mm) and 2322.102m (18mm). They correspond to 15.16ka, 15.20ka, 15.37ka, 15.71ka, 16.19ka BP on the Neumann timescale. We typically take a second look at the ice 48 hours after drilling, when the surface is clearer, so that we can spot more faint layers. It seems like we will have a lot of exciting cloudy layers in the next few hundred meters.

## III. ICE CORE LOGGING

- A. The quality of the ice is excellent. The core breaks have had fractures from time to time, but nothing out of the ordinary. The only breaks in the core come from core breaks at the end of a run. It is great to see a clear fracture free ice core 3+ meters long.

## IV. ARCH TEMPERATURE

- A. To maintain the core handling arch at around -25C we need to keep all four cooling units going. The hot air from cooling units is pushed outside by an exhaust fan. We are having problems with the exhaust fan shutting down, which reduces the ability of the cooling units to cool the core handling area. The temporary fix is to monitor the temperature every half hour and manually restarting the exhaust fan. The temperature of the arch has come up to -18C on three occasions, but has never been above -20C for more than an hour. The ice core never got above -24C. We keep as much ice as possible in the basement where the temperature is below -27C.

## V. PACKING

- A. The depth of the bottom most piece of ice going to NICL this season is 1998 m. We have 9 skids of 8 boxes each packed in the basement that will be sent out next year. We

cannot send them this year because there is not enough space in the shipping containers. There will be 1,480 m of ice for the CPL this summer.

#### VI. WEATHER

- A. We had a few day storms, which broke up with a spectacular sun dog. Now we have a brilliant clear day.

#### VII. HEALTH

- A. Camp is healthy without any signs of the crud. There have been a few sprains, and people are getting worn down.

#### VIII. CAMP ACTIVITIES

- A. CReSIS (I-188) drove the 220 miles back from Thwaites Glacier in two hard and stormy days. The skidoos arrived first and it took another day and some assistance to get the heavy cargo sleds back to WAIS.

#### IX. MEDIA

- A. We were expecting a visit by 8 journalists. NSF sent them all to Pole and the Dry Valleys, and then only two of them were able to come to WAIS. Lee Hotz is reporting for the Wall Street Journal and Chaz Firestone is reporting for Nature News. They spent three days at WAIS and had lots of time to learn about what we do here and the labs back home.

#### X. FUN

- A. On Wednesday Ryan Banta gave a science lecture about the chemistry in ice cores. Saturday was our last day off (Camp staff will take off next Sunday, we won't.). Bess Koffman organized the second coffee house of the year, which showcased our local talent. Krissy Danhert offered fancy coffee to anyone who wished (mocha powder, frothed milk, syrups..). It was a very well attended event. After the coffee house, everyone had a last chance to see and photograph the shallow ash layers before they got packed. Skiing has been very good.

We are making plans and preparations for next season. Everyone is pulling together as a team and working hard, but we will be glad when this season is over.