

WISSARD FIELD REPORT: 30 January 2013. Compiled by John Priscu

WISSARD Science Personnel at SLW: John Priscu, Slawek Tulaczyk, Ross Powell, Matthew Siegfried, Dan Sampson, Brent Christner, Grace Barcheck, Jill Mikucki, Tristy Vick-Majors, Amanda Achberger, Andy Mitchell, Reed Scherer, Tim Hodson, Mike Osment, Alex Michaud, Carlo Barbante, Mark Skidmore, Ken Mankoff, Jason Thomas, Doug Fox, Emily McBryan, Marino Protti, Marci Beitch, Susan Kelly, Brian Guthrie, William Adkins, Robin Bolsey.

WISSARD Drillers at SLW: Dar Gibson, Darin Blythe, Graham Roberts, Dennis Duling, Justin Burnett, Jeff Lemery, Chad Carpenter.

WISSARD Personnel in McMurdo: Alberto Behar, Betty Trummel, Rob Edwards

SLW camp population: 51 (27 scientists, 7 drillers, 9 ASC SPOT2 traverse, 2 ASC marine techs, 2 ASC camp staff, 4 ASC WISSARD traverse) site

Science Update:

- The borehole was reamed from 0600 h on 29 January to 0400 on 30 January. The drillers pulled the return pump and the drill head from the borehole by 0600 h and turned the borehole over to science operations. They are now packing and winterizing their equipment. The success of the WISSARD project is due in large part to the hard work and diligence of our drillers. They did all they could to advance out science goals and played an integral role as part of the WISSARD team.
- A sediment multi-corer was deployed four times between 0600 h and 1500 h on 30 January. Six cores were retrieved during this period (see figure) and will be processed through the night and over the next few days. Importantly, the sediment-water interface was recovered. Initial observations indicated that it is a diamict (very poorly sorted sediment) that is typical of deposits formed under ice sheets. However, the very high water content is unusual and is one of the lines that will be pursued with further analyses.
- Our CTD was once again successfully deployed at 1530 hour; the lake temperature was -0.5 C and conductivity was near 450 $\mu\text{S/cm}$ (the overlying ice was $\sim 3 \mu\text{S/cm}$).
- The CTD profile was followed by a Niskin bottle cast, which retrieved 10 L of lake water (see figure). Two more Niskin casts are planned through the night. The water from these casts will be used to make more detailed metabolic measurements in addition to chemical speciation, methane gas levels, and dissolved organic carbon characterization.
- An in-situ filtration system fitted with 3.0, 2.0 and 0.2 μ filters will be deployed between Niskin casts. This system allows us to collect large volumes of lake particulate matter, which will be used for next generation DNA sequencing.
- The borehole will be handed over to the geophysics team at 1000 h on 31 January for deployment of a geothermal probe. The geothermal probe has been reconfigured to operate on our light winch system. Following geothermal probe deployment, we will reassess our timeline and determine if we are able to deploy a deep sediment corer, mini-ROV and gas collection system.
- Borehole sensor strings (seismic, temperature, and deformation) will be installed after other borehole operations are complete. These strings are now being readied for deployment.
- Siegfried, Protti and Barcheck took snowmobiles to the Whillans Ice Stream grounding line to install a 5 station seismic array at and service GPS station in this area. This team is expected to return to camp late tomorrow evening.

Outreach update:

- Media interest in WISSARD remained high, with articles appearing in Science Daily; <http://t.co/YuJpUNLy>, The BBC; <http://www.bbc.co.uk/news/science-environment-21231380>; and The New York Times; <http://www.nytimes.com/2013/01/15/science/wissard-project-seeks-signs-of-life-under-antarctica.html>;
- Betty Trummel's WISSARD blog is featured by Sea World Orlando this month in preparation of their new Antarctic exhibit.

McMurdo update:

- Preparations are being made for return of samples and personnel from the field, and subsequent redeployment home.
- Flight planning continues to evolve day-to-day, according to weather, camp requirements, and aircraft availability. Twin Otter flight is planned for sample and personnel return on 31 Jan, pull-out flights begin 2 Feb.



Water processing (upper left); retrieving sediment cores from borehole (upper right); transporting Niskin and core samples to the laboratory from the borehole (middle and lower)