



CELTIC EXPLORER CE 0913: 1st Weekly Report (July 26 - August 3, 2009)

The RV CELTIC EXPLORER arrived in Bremerhaven in the afternoon of July 26 and made fast at the Labradorkai, a remote harbour basin of the fishery harbor next to the construction site of the off-shore wind power plants. Already in the evening a group of 8 persons received a familiarization course of the vessel. Seven containers arrived in the next morning, which were unpacked in the next 2 days and their content was installed at deck or in the labs of the vessel.



Harbour test of ROV KIEL 6000 in Bremerhaven, Photo: Peter Linke, IFM-GEOMAR

In the afternoon of the 3rd harbour day the successful harbour test of ROV was the end of the mobilization of the substantial equipment. After this the pilot was called and the cruise of the CELTIC EXPLORER started.

The view on the full working deck shows the number of complex instruments, which will be deployed on this cruise. This includes besides the ROV, a vibro corer, 2 video-guided landers and a CTD rosette as well as a microstructure CTD.

The CTD rosette is equipped with a video camera to detect close to the seafloor the concentration of oxygen, methane, CO₂, poly aromatic hydrocarbons, the pH and transmission. At the same time we can obtain water samples with Niskin bottles and pump water through a hose to a mass spectrometer in the laboratory.

The POZ lander is a miniaturized lander, which is equipped with an acoustic Doppler current profiler (ADCP) and a storage CTD. The microprofiler lander carries beside two acoustic current profilers and a storage CTD as the major

component a profiler, which moves microelectrodes in x, y and z direction at the seafloor to resolve high-resolution oxygen profiles in the sediment.

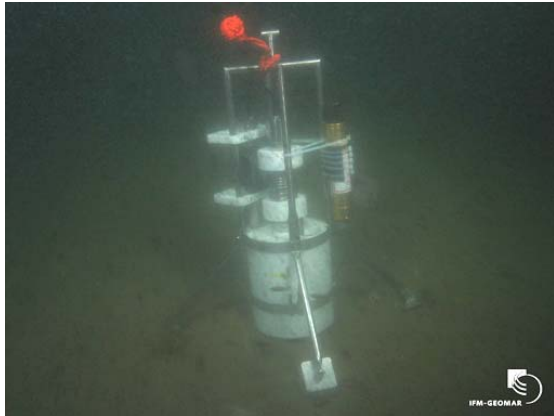
With the vibro corer of our colleagues from the BSH up to 6 m long cores can be obtained from the sandy sediments, which will enable us to obtain pore waters to derive information about the origin and genesis of the emerging fluids and gases.

While the weather was nice and calm during our departure, wind peaked up substantially at the first day and enabled us only to deploy a video-guided CTD and a vibro corer in the "Borkum Reef" working area. As the wind slowed down on the next day, we were able to conduct a full working program with the first ROV dive in the working area "Salt Dome Juist". This impatiently expected moment resolved in some disillusion as strong currents and high particle load diminished the visibility substantially. On the other side the shallow water navigation system installed in the drop keel proved to work at once and allowed for navigation under these difficult conditions.



Full working deck on the Celtic Explorer with vibro corer (centre), POZ-Lander und ROV KIEL 6000. Photo: Peter Linke, IFM-GEOMAR

During the second dive on August 1 in the western part of the working area the visibility was so bad that the pilots could not see the arm in front of the cameras. On the following day the visibility improved in the eastern part that much that we were able to deploy the new pore water sampler (PWS) successfully. The sampling program was completed by push corer, water samplers and samples obtained by the Kiel in situ pump system (KIPS); at the same time the pH, concentrations of methane, Co2 and poly aromatic hydrocarbons were measured with a sensor package. After the ROV recovery the POZ lander was deployed. This deployment was inspected on the next day by ROV. The 3rd August was completed by the lander recovery and by a substantial CTD program, which demonstrated the excellent maneuverability of the CELTIC EXPLORER.



The pore water sampler (PWS) on the seafloor. Photo: Peter Linke, IFM-GEOMAR



Control Panel of ROV KIEL 6000. Photo: Ralf Schwarz, IFM-GEOMAR

In the morning of August 4 the vessel will stop shortly in Cuxhaven for exchange of personal and the vibro corer.

All are well on board and I am sending regards in behalf of the crew members,

Peter Linke