2. Weekly Report MSM137 May 12-18, 2025



The transit time through the Norwegian Sea was used to check the functionality of our releaser cylinders. These releasers allow our ocean bottom seismometers (OBS) to return to the surface. For this test, we lowered the cylinders to a depth of 500 m and transmitted the release command via an acoustic signal. After this successful test, we had been able to finalize the preparation of the OBS.

On May 14, the working area was reached, situated about 100 km south-west of Bear Island. In this area, magmatic intrusions are known. These have been previously

drilled during industrial exploration for hydrocarbons. During our cruise, we will produce detailed geophysical images of these structures. In a first step, we deployed 16 OBS. They will record our seismic signals during the next days. A sound velocity profile was measured which is needed to correct the multibeam measurement (EM712).

In the morning of May 15, we started to deploy the 6 km long streamer cable. This task took some time – we had to install the collars for the depth control units (birds). Further, the weight of the cable had to be adjusted to the artic environment. This adjustment was successful; the streamer shows a very stable depth behaviour. During the afternoon, we deployed 16 airguns during good weather conditions. Later the evening – shortly before the planned start of the first profile – we noticed that the tail buoy had left our



Deployment of seismic airguns.

streamer cable. This buoy marks the end of our cable and it transmits its GPS position via radio. This allowed us to locate the freely floating buoy. In the morning of May 16, we recovered all towed equipment. Subsequently, we recovered the tail buoy. The now well-rehearsed team of deck crew and scientists then brought all the equipment back into the water. Since May 16, 6 p.m., we are doing seismic profiling work. In addition to the seismic cable and the two arrays, we are towing two magnetometers on the starboard side and on the port side a hydrophone chain for acoustic observation of marine mammals.



RV Maria S. Merian with seismic gear deployed.

Actually, we finished the acquisition of seven profiles. First processing of seismic data (raw-stack of 588 channels) already shows intrusive structures in a depth of about 2 to 4 km.

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