

6th Oct 00:00 – 6th Oct 24:00 GMT

1. Location

17° 59.5 E 62° 41.2' N

BSB-11 Ångermanälven River Estuary

2. Activity Summary

Complete operations at BSB-11 and log the hole prior to transiting to BSB-9.

3. Science Report

Similar to the former station of BSB-10, the main objective at this station is to study the varve chronology of Holocene clay sediments. The upper ca. 15 mbsf were indeed pure clay and are expected to be well suited for varve analyses when the cores are split in Bremen during the onshore science party. Below that depth the sediment was coarser, varying between clayey silt and silty sand. Drilling continued down to 35.9 mbsf to make sure that we were through the clay deposits, with samples for OSL dating taken at regular intervals in the silt and sand.

In the early morning we moved 20 m over to Hole M0062B where the second hole was drilled to 24.1 mbsf. While the coring started at 0.5 mbsf in Hole M0062A, it started here at 1.0 mbsf. The reason for starting the coring below the sediment-water interface was to avoid the top 0.0-0.5 m of sediment that has been strongly contaminated over the years due to an unregulated discharge of industrial waste from the local paper factory. Staggering the starting depth enabled core overlap for a more accurate composite core recovery log.

Two more holes were drilled at this site, M0062C from seafloor to a depth of 3.3 mbsf and M0062D starting at 1.5 mbsf going down to 21 mbsf. The core from Hole C was treated according to the safety requirements needed to avoid the contaminated upper c. 0.5 m. The lithology of Hole D displayed varved clays with, where it was visible, a varve thickness of 0.3 mm to 15 mm down to a depth of c. 18 mbsf. The last core returned non-varved silt and sand. Drilling stopped at 21 mbsf and the hole was logged.

Correlations based on magnetic susceptibility records from the different holes at both sites M0061 and M0062 are extremely good.

4. Core Recovery Details

Hole	M0062A	M0062B	M0062C	M0062D	M0062K	M0062L
Cores recovered	6	8	1	7	1	1
Drilled length (Coring)	16.2m	23.1m	3.3m	19.5m	1.0m	1.0m
Drilled length (Open hole)	N/A	1.0m	N/A	1.5m	N/A	N/A
Recovered length	15.44m	23.3m	3.43m	19.99m	0.95m	0.92m
Recovery	95.31%	100.87%	103.94%	102.51%	95%	92%
Depth at Midnight	35.9m	24.1m	3.3m	21.0m	1.0m	1.0m

5. Weather

Fair, wave heights of 0.1 – 0.3 m; winds WNW, 10 - 15 kts, gusting to 19 kts; 15°C.

Next 24 hrs: Patchy Fog, wave heights of 1.0 – 1.3 m, winds WSW, 17 –21 kts, gusting 12 -26 kts. 16°C.

A low pressure passing to the north will interact with a high pressure over Europe producing moderate to fresh S – SW winds with patchy fog and occasional light rain.

6. Planned Activity for the next 24 hours

Transit to BSB-9. Landsort Deep.

7. Photo of the day



Aarno Kotilainen©ECORD_IODP
Varved clays from BSB-11