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Sampling

EUMELI: Sediment samples were obtained using either a USNEL box corer (ref: KGS) or a multitube coring device (ref: KTB) (Barnett et al., 1984). The cores were retrieved upon arrival and immediately after transported to a cold room. The cold room was maintained at bottom water temperature (2-5°C) and the sediments were extruded as soon as possible. Sediments were packed into cleaned plastic tubes and centrifuged (Heraeus Model Omnifuge 200 refrigerated at 5°C) at a maximum of 9000 rpm for 5 to 10 minutes. The supernatant was subsequently transferred into plastic syringes and then filtered through Minisart Sartorius 0.45 mm filters. The pore waters samples were then stored into polypropylene Falcom tubes, acidified with ultra-pure H₂SO₄ (5N), and stored until chemical analysis.

SEDORQUA: Sediment samples were obtained using a multitube coring device (Barnett et al., 1984). The cores were retrieved upon arrival and immediately processed at 20°C. The sediments were quickly extruded and were packed into cleaned plastic tubes and centrifuged (Heraeus Model Omnifuge 200 refrigerated at 5°C) at a maximum of 6000 rpm for 10 minutes. The supernatant was subsequently transferred into plastic syringes and then filtered through Minisart Sartorius 0.45 microns filters. The porewaters samples were then stored into polypropylene Falcom tubes, acidified with ultra-pure HCl, and stored at 4°C until chemical analysis.

Oxygen measurements

Two replicate profiles were achieved for each core. Briefly, a minielectrode of external diameter of 0.7 mm was inserted in the sediment using a micromanipulator which lowers the electrode by 0.5 mm at each movement. During this operation, the core was kept at bottom water temperature. The oxygen polarographic sensors is calibrated by Winkler titration of the overlying water and a zero oxygen on water in which Na₂SO₃ has been added. The electrode response is linearly proportional to the oxygen content of the porewater. The change of

porosity near the sediment water interface may cause some artifact on the minielectrode. This was corrected using porosity measurements as described in De Wit et al (1997).

Nitrate measurements

In the laboratory, nitrate determination was performed using colorimetric measurements on a RFA Alpkem 300 using a standard Cadmium reduction technique (Strickland and Parsons, 1972). The reproducibility of the measurement was 3% at this concentration level.

Silicate measurement

In the laboratory, silicate determination was performed using colorimetric measurements on a RFA Alpkem 300 using a standard Molybdenum technique (Strickland and Parsons, 1972). The reproducibility of the measurement was 2%.

Organic carbon measurements

EUMELI: Organic carbon measurements were carried out using a LECO WR12 analyser after decarbonation with HCl 2N (Khripounoff et al, 1998).

TABLE 1: Analytical procedures utilized for the chemical analysis of pore waters and sediments. METHODS and INSTRUMENTATION: SFA = Segmented Flow Analysis: Alpkem RFA 300; CHN-EA = Elemental Analyzer: LECO CHN;. Reference list: (1) Revsbech et al. (1980); (2) Strickland and Parsons (1972); (3) LECOR techniques.

| Analysis | Determination Method | Reproducibility | References |
|-------------------------------------|----------------------|-----------------|------------|
| O ₂ (Sed) | Mini-Electrode | 5 % | (1) |
| O ₂ (BECl) | Winkler Titration | 2 % | (2) |
| NO ₃ | SFA | 2 % | (2) |
| Si | SFA | 2 % | (2) |
| C _{org} & N _{tot} | CHN-EA | 2 % | (3) |

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