

Supplementary Information

Samples with the same Sample ID were collected 5-15 meters apart.

ND: Not Detected

NA: Not Available

FCM Bacteria: Bacterial abundance cell concentration determined by flow cytometry.

FCM Phytoplankton: Phytoplankton cell concentration determined by flow cytometry.

Sample with amplicons sequencing: Sample for which amplicon have been sequenced and available in NCBI Sequence Read Archive under the BioProject accession number PRJNA803180.

Detection limit:

DOC (dissolved organic carbon): 0.05 mg C L⁻¹

DIC (dissolved inorganic carbon): 0.04 mM

TP (total phosphorus): 4 µg P L⁻¹

TN (total nitrogen): 20 µg N L⁻¹

Al (aluminum): 0.002 µg L⁻¹

B (boron): 0.0007 µg L⁻¹

Ba (barium): 0.00006 µg L⁻¹

Ca (calcium): 0.007 µg L⁻¹

Cu (copper): 0.0007 µg L⁻¹

Fe (iron): 0.0003 µg L⁻¹

K (potassium): 0.001 µg L⁻¹

Mg (magnesium): 0.003 µg L⁻¹

Mn (manganese): 0.00005 µg L⁻¹

Na (sodium): 0.0007 µg L⁻¹

Ni (nickel): 0.0009 µg L⁻¹

P (phosphorus): 0.003 µg L⁻¹

S (sulfur): 0.01 µg L⁻¹

Si (silicon): 0.002 µg L⁻¹

Sr (strontium): 0.0008 µg L⁻¹

Zn (zinc): 0.0002 µg L⁻¹