Pore water composition by in situ and shipboard methods from RVIB Nathaniel B. Palmer NBP-98-2 cruise in the Southern Ocean, 1998 (U.S. JGOFS AESOPS project)

Website: https://www.bco-dmo.org/dataset/2766
Version: March 15, 2001
Version Date: 2001-03-15

Project
» U.S. JGOFS Antarctic Environment and Southern Ocean Process Study (AESOPS)

Program
» U.S. Joint Global Ocean Flux Study (U.S. JGOFS)

Contributors	Affiliation	Role
Sayles, Frederick	Woods Hole Oceanographic Institution (WHOI)	Principal Investigator
Martin, William	Woods Hole Oceanographic Institution (WHOI)	Co-Principal Investigator
Chandler, Cynthia L.	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager

Table of Contents

Dataset Description

Pore water composition by in situ and shipboard methods

Methods & Sampling

PI: Fred Sayles and William Martin
of: Woods Hole Oceanographic Institution
data set: Pore water composition
project/cruise: AESOPS NBP98-2, Benthic Processes cruise
ship: Nathaniel B. Palmer

Sampling Methodology

[table of contents | back to top]

Data Files

File
pore_water.csv (Comma Separated Values (.csv), 48.93 KB) MD5:8f9ff3e0fe8d10e30491f3c04d54e104 Primary data file for dataset ID 2766

[table of contents | back to top]

Parameters

Parameter	Description	Units
event	event number from event log	
sta	station number from event log	
site	sediment trap mooring number	
deploy_id	type of sampling device: MC=MultiCorer WHIMP=Woods Hole Interstitial Marine Probe	
depth_w	ocean depth	meters
method	sampling method employed. ISPW = in situ harpon-type sampling; coarse resolution; coarse resolution. ISWCS - in situ whole-core squeezing; high resolution. LWCS - laboratory whole-core squeezing; high resolution. SC - laboratory sectioning and centrifugation.	
depth_core	average depth (from core top) of sediment sampling interval (negative numbers refer to water or fluff layer above the sediment-water interface)	centimeters
NO3	pore water nitrate + nitrite	micromoles/liter
NO3_sd	1 standard deviation uncertainty	micromoles/liter
SiO2	pore water silicate	micromoles/liter
SiO2_sd	1 standard deviation uncertainty	micromoles/liter
TCO2	pore water total carbon dioxide	micromoles/liter
TCO2_sd	1 standard deviation uncertainty	micromoles/liter
Alk	pore water titration alkalinity	microequiv/liter

Alk_sd	1 standard deviation uncertainty	microequiv/liter
O2	pore water dissolved oxygen	micromoles/liter
PO4	pore water phosphate	micromoles/liter
NH4	pore water ammonium	micromoles/liter

[table of contents | back to top]

Instruments

Dataset-specific Instrument Name	WHIMP Multi Corer
Generic Instrument Name	Multi Corer
Dataset-specific Description	The Woods Hole Interstitial Marine Probe (WHIMP; Martin and Sayles, 1996) was specially designed for in situ porewater sampling. The WHIMP is equipped with an in situ whole-core squeezer (Bender et al., 1987; Sayles and Dickinson, 1991) for high resolution sampling near the sediment-water interface. It is a 'lander' system of the 'Smith type' that differs from its predecessors primarily in that it incorporates a number of different sampling and analysis strategies onto a single platform. The designers of the WHIMP sampling system wanted to be able to carry out sediment and pore water studies, direct flux measurements with chambers, and conduct in-situ experiments at the same place and time. It includes a syringe to extract water samples at various depths, ranging from less than an inch to two feet. References: Bender M., Martin W., Hess J., Sayles F., Ball L., and Lambert C. (1987), A whole-core squeezer for interstitial pore-water sampling. Limnol. Oceanogr., v.32, pp.1214-1225 Martin W.R. and Sayles F.L. (1996), CaCO3 dissolution in sediments of the Ceara Rise; western equatorial Atlantic. Geochim. Cosmochim. Acta, v.60, pp.243-263 F.L. Sayles and W. Dickinson, The ROLAI2D Lander: a benthic lander for the study of exchange across the sediment-water interface, Deep-Sea Res. 38 (1991), pp. 505-529.
Generic Instrument Description	The Multi Corer is a benthic coring device used to collect multiple, simultaneous, undisturbed sediment/water samples from the seafloor. Multiple coring tubes with varying sampling capacity depending on tube dimensions are mounted in a frame designed to sample the deep ocean seafloor. For more information, see Barnett et al. (1984) in Oceanologica Acta, 7, pp. 399-408.

[table of contents | back to top]

Deployments

NBP-98-2

Website	https://www.bco-dmo.org/deployment/57723
Platform	RVIB Nathaniel B. Palmer
Report	http://usjgofs.whoi.edu/aesops/nbp-bp_mr.html
Start Date	1998-02-25
End Date	1998-04-03
Description	Benthic Process and Moorings Recovery **Methods & Sampling** PI: Fred Sayles and William Martin of: Woods Hole Oceanographic Institution data set: Pore water composition dates: February 26, 1998 to March 23, 1998 location: N: -56.8815 S: -76.4972 W: -178.0922 E: -169.4982 project/cruise: AESOPS NBP98-2, Benthic Process and Mooring Recovery cruise ship: R/V Nathaniel B. Palmer Sampling Methodology

[table of contents | back to top]

Project Information

U.S. JGOFS Antarctic Environment and Southern Ocean Process Study (AESOPS)

Website: http://usjgofs.whoi.edu/research/aesops.html

Coverage: Southern Ocean, Ross Sea

The U.S. Southern Ocean JGOFS program, called Antarctic Environment and Southern Ocean Process Study (AESOPS), began in August 1996 and continued through March 1998. The U.S. JGOFS AESOPS program focused on two regions in the Southern Ocean: an east/west section of the Ross-Sea continental shelf along 76.5°S, and a second north/south section of the Southern Ocean spanning the Antarctic Circumpolar Current (ACC) at ~170°W (identified as the Polar Front). The science program, coordinated by Antarctic Support Associates (ASA), comprised eleven cruises using the R.V.I.B Nathaniel B. Palmer and R/V Roger Revelle as observational platforms and for deployment and recovery of instrumented moorings and sediment-trap arrays. The Ross-Sea region was occupied on six occasions and the Polar Front five times. Mapping data were obtained from SeaSoar, ADCP, and bathymetric systems. Satellite coverage was provided by the NASA SeaWiFS and the NOAA/NASA Pathfinder programs.

[table of contents | back to top]

Program Information

U.S. Joint Global Ocean Flux Study (U.S. JGOFS)

Website: http://usjgofs.whoi.edu/

Coverage: Global

The United States Joint Global Ocean Flux Study was a national component of international JGOFS and an integral part of global climate change research.

The U.S. launched the Joint Global Ocean Flux Study (JGOFS) in the late 1980s to study the ocean carbon cycle. An ambitious goal was set to understand the controls on the concentrations and fluxes of carbon and associated nutrients in the ocean. A new field of ocean biogeochemistry emerged with an emphasis on quality measurements of carbon system parameters and interdisciplinary field studies of the biological, chemical and

physical process which control the ocean carbon cycle. As we studied ocean biogeochemistry, we learned that our simple views of carbon uptake and transport were severely limited, and a new "wave" of ocean science was born. U.S. JGOFS has been supported primarily by the U.S. National Science Foundation in collaboration with the National Oceanic and Atmospheric Administration, the National Aeronautics and Space Administration, the Department of Energy and the Office of Naval Research. U.S. JGOFS, ended in 2005 with the conclusion of the Synthesis and Modeling Project (SMP).

[table of contents | back to top]