

Data Management Plan

Primary Investigator: Alicia M. Wilson

Institution: University of South Carolina

Project: FLUID AND CHEMICAL FLUXES ACROSS THE SEAFLOOR OF A PASSIVE MARGIN

Co-PIs: Willard "Billy" Moore, Scott M. White

NSF Division: OCE/EAR **Submission Date:** 12/05/2012

Overview: We will conduct geophysical surveys to collect bathymetric data, chirp seismic sub-seafloor stratigraphic data, and surface water sampling. We will install pairs of wells at three sites in different water depths 5-16 m. A datalogger will hang at the well screen to record pressure, temperature, and salinity at 20-minute intervals. An additional logger will be attached to the outside of each well at the seafloor. Additional temperature loggers will be installed at 1 m intervals along the wellbore above the screen. Water samples will be drawn from the wells, and from pore fluid in the adjacent sand. Vertical arrays of temperature loggers will be installed at 10 additional locations (5 loggers at 1 m intervals in each array).

Data description: Bathymetric and chirp data will be collected on three profiles with crossing lines from nearshore Charleston, SC to 20 km offshore. Pressure, temperature, and salinity will be recorded at 20 minute intervals for the duration of the project in 6 wells. Temperature will be recorded at 20-minute intervals from thermal arrays at 10 sites. Water samples will be collected quarterly from each well, and after four storm events. Water column samples will be collected 5 times during the project. Vibracores will be taken near each well, prior to drilling, through the unconsolidated layer.

Data analysis summary: Geophysical data collected during the initial site survey cruise will be analyzed by White for seafloor depth, sediment type, and sub-seafloor structure. Water sampling from wells will be analyzed for Ra activity by Moore. Observations from dataloggers installed in wells and temperature probes will be analyzed by Wilson. Wilson and Moore will jointly supervise nutrient analyses.

Includes field work? Yes

Description of field work: A 4-day cruise is planned for year 1 during which seafloor mapping/geophysical data will be collected. Soon after the completion of the cruise, the original underway data will be contributed by the vessel operator to the Rolling Deck to Repository (R2R) project and archived permanently at NODC or NGDC as appropriate for the data type. Data collected by the scientists on the cruise will be archived by NGDC or ASP as appropriate. Vibracores will be collected and wells and thermal arrays will be installed. The wells will be visited quarterly and after storms for sampling and downloading, and the overlying water column will be sampled at the same time to detect geochemical signals of SGD in the ocean. During these visits, bathymetric profiles will be collected using a DGPS navigated single-beam echosounder.

Expected data product #1

Data type: Observational

Responsible investigator: Alicia M. Wilson

Product description: Pressure, temperature and salinity from dataloggers in 6 wells collected at 20 minute intervals; temperature from dataloggers in 10 arrays collected at 20 minute intervals

Intended repository: NODC

Timeline for data release: Sixty days after acquisition/analysis

Expected data product #2

Data type: Analytical

Responsible investigator: Willard "Billy" Moore

Product description: radium isotopes (^{223}Ra and ^{224}Ra), long-lived isotopes (^{226}Ra and ^{228}Ra), and nutrient samples of water samples from wells, pore-fluid, and water column

Intended repository: BCO-DMO

Timeline for data release: Two Years from acquisition/analysis

Expected data product #3

Data type: Observational

Responsible investigator: Scott M. White

Product description: Bathymetric single-beam depth profiles from initial survey and quarterly cruises thereafter. Chirp seismic data profiles from Edgetech 216s.

Intended repository: NGDC

Timeline for data release: Two Years from acquisition/analysis

Expected data product #4

Data type: Observational

Responsible investigator: Alicia M. Wilson

Product description: seafloor sediment samples from vibracores

Intended repository: LDEO-DSSR

Timeline for data release: End of grant period