

Figure F1. IODP convention for naming sites, holes, cores, sections, and samples, Expedition 403. At all sites, ship positioning while coring was accomplished with GPS data. Because of the high northern latitude, a seafloor beacon was deployed at Sites U1618 and U1619 to aid GPS positioning.

Figure F2. APC system used during Expedition 403 (see Graber et al., 2002). ID = inside diameter.

Figure F3. XCB system used during Expedition 403 (see Graber et al., 2002).

Figure F4. Workflow of cores, sections, analyses, and sampling, Expedition 403. PWC = *P*-wave velocity (measured by caliper).

Figure F5. Example VCD, Expedition 403. cps = counts per second.

Figure F6. Example VCD representing key features used to define lithologic units and subunits, Expedition 403. All sites contained large single dropstones; however, these are only shown on the VCD for Site U1620.

Figure F7. Lithology classification scheme, Expedition 403. Prefixes and suffixes are used on an as needed basis. For example, sediment of ~72% clay, ~21% silt, and ~6% diatoms, with neither dark patches nor clasts but sand patches would be named “diatom-bearing silty clay with sand patches,” skipping inappropriate/unnecessary prefixes and suffixes.

Figure F8. Ternary diagram for terrigenous clastic sediments composed of >70% siliciclastic material without gravel, pebble, or cobble (after Shephard, 1954), Expedition 403.

Figure F9. Classification scheme for sediments that contain mixtures of pelagic biogenic and siliciclastic components, Expedition 403. Modified after Expedition 318 Scientists (2011).

Figure F10. Ichnofabric index legend, Expedition 403. Modified after Droser and Bottjer (1986) and Savrda et al. (2001).

Figure F11. Pliocene and Quaternary dinocysts and acritarchs, Expedition 403. 1, 2. *Bitectatodinium tepikiense* (403-U1618A-14F-CC). 3, 4. *Filisphaera filifera* (403-U1618A-10H-CC). 5. Cyst of *Protoceratium reticulatum* (403-U1624B-4H-4, 69–81 cm). 6. *Habibacysta tectata* (403-U1619A-14F-CC). 7. *Brigantedinium* sp. (403-U1621C-4H-4, 82–92 cm). 8. *Selenopemphix nephroides* (403-U1623A-35X-CC). 9, 10. *Islandinium brevispinosum* (403-U1618A-14F-CC). 11, 12. *Protoperidinium stellatum* (403-U1618A-14F-CC). 13, 14. *Islandinium minutum* (403-U1624B-5H-CC). 15, 16. *Trinovantedinium* sp. A (403-U1618-51X-CC). 17–19. *Lavradosphaera canalis* (acritarch) (403-U1620D-45X-CC). 20. *Nannobarbophora walldalei* (acritarch) (403-U1618A-14F-CC). 21. *Selenopemphix dionaeacysta* (403-U1619A-75X-CC).

Figure F12. Main planktonic foraminifers observed and benthic foraminifers used as biostratigraphic markers, Expedition 403. 1. *Neogloboquadrina atlantica*

(dorsal view; 300×). 2. *Neogloboquadrina atlantica* (umbilical view; 300×). 3. *Neogloboquadrina pachyderma* (dorsal view; 300×). 4. *Neogloboquadrina pachyderma* (umbilical view; 300×). 5. *Globigerina bulloides* (umbilical view; 300×). 6. *Turborotalita quinqueloba* (umbilical view; 300×). 7. *Cibicides grossa* (dorsal view; 200×). 8. *Cibicides grossa* (umbilical view; 200×).

Figure F13. Coordinate systems, orientation of archive-half sections and discrete cube samples collected from working halves, and shipboard SRM, Expedition 403.

Figure F14. Discrete sample orientation for the three positions used for SRM measurements using the nomenclature of the SRM IMS software, Expedition 403.

Figure F15. Assessment of the SRM and software using the IODP standards made at SIO, Expedition 403.

Figure F16. WRMSL, Expedition 403. Water standard shown was measured at the end of each core for QA/QC purposes.

Figure F17. NGRL, Expedition 403. Left: NGRL. Right: interior with NaI detectors and photomultiplier tubes.

Figure F18. Thermal conductivity (TCN) station used for measuring section halves, Expedition 403. Inset: TCN probe placed on split core surface.

Figure F19. SHMG used for measuring *P*-wave velocity on split surface of working halves, Expedition 403.

Figure F20. Sample vials, desiccator, dual balance system, and drying oven used for MAD sample preparation, Expedition 403.

Figure F21. Pycnometer used to measure volume of dry samples for MAD analyses, Expedition 403.

Figure F22. Relationships between cored material and the depth scales used during Expedition 403. See text for discussion of depth scales. Brown and purple intervals = recovered core, dashed and dotted lines = equivalent horizons, red dashed lines = tie points aligning specific, easily recognized features. CCSF depth designations for intervals not included in the splice are not necessarily equivalent to CCSF depth designations within the splice (green dashed line).

Figure F23. Triple combo, FMS-sonic, and VSI tool strings used during Expedition 403. LEH-MT = logging equipment head-mud temperature.

Figure F24. APCT-3 tool for in situ temperature measurements.

Figure F25. SET2 tool for in situ temperature measurements.