

Figure F1. Detailed site and hole location images for Sites (A) M0071 and (B) M0073 overlain onto DSL120 sonar imagery (from Blackman et al., 2002) in two different swath orientations and the newly acquired 50 m resolution multibeam bathymetry.

Figure F2. Location of Holes M0071A–M0071C along the top of one ≈ 10 m ridge orientated oblique to the plate spreading direction. Contour interval = 20 m.

Figure F3. Core recovery and lithology, Site M0071.

Figure F4. Serpentinized harzburgite with vermicular chromian spinel (Sp) (357-M0071B-1R-1, 12–15 cm). A, B. Thin section scans (A = plane-polarized light [PPL], B = cross-polarized light [XPL]). C, D. Vermicular chromian spinel (C = PPL, D = XPL).

Figure F5. Alteration, Hole M0071A. Alteration intensity: 0 = fresh (<2%), 1 = slight (2%–20%), 2 = moderate (21%–40%), 3 = high (41%–80%), 4 = very high (81%–95%), 5 = total (>96%). Distribution of alteration types: 1 = pervasive, 2 = localized, 3 = patchy.

Figure F6. Alteration, Hole M0071C. Alteration intensity: 0 = fresh (<2%), 1 = slight (2%–20%), 2 = moderate (21%–40%), 3 = high (41%–80%), 4 = very high (81%–95%), 5 = total (>96%). Distribution of alteration types: 1 = pervasive, 2 = localized, 3 = patchy.

Figure F7. Fully serpentinized dunite with serpentine mesh texture overprinted by carbonate veins and cracks filled with foraminiferous carbonate sediment, associated with oxidation halos (357-M0071A-1R-1, 40–53 cm).

Figure F8. Mineralogical assemblages within rubble pieces, Site M0071. A. Serpentine mesh texture after olivine and bastite after orthopyroxene (top) in a fully serpentinized harzburgite (357-M0071C-2R-1, 74–76 cm; left = PPL, right = XPL). B. Amphibole-chlorite assemblage replacing an undetermined protolith (357-M0071A-2R-1, 64–67 cm; top = PPL, bottom = XPL). C. Altered dolerite with chlorite after plagioclase and amphibole after pyroxene crosscut by an amphibole vein (357-M0071C-6R-1, 55–57 cm; top = PPL, bottom = XPL).

Figure F9. Relative abundance of mineral phases identified by bulk powder XRD analysis, Site M0071. Colors correspond to mineral phases merged as groups (see [Core description](#) in the Expedition 357 methods chapter for mineral group definitions [Früh-Green et al., 2017b]). Numbers are semi-quantitative abundances determined from fits to XRD peak patterns. Trace phases are subject to large uncertainties. * = poor data quality.

Figure F10. PM-normalized extended trace element plot, Site M0071. Values for PM from Sun and McDonough, 1989.

Figure F11. Chondrite-normalized REE plot, Site M0071. Values for CI chondrite from McDonough and Sun, 1995.

Figure F12. Sensor data, Hole M0071A. Elapsed time = time since the start of the sensor package data file. Penetration depth is from drill logs.

Figure F13. Sensor data, Hole M0071B. Elapsed time = time since the start of the sensor package data file. Penetration depth is from drill logs.

Figure F14. Sensor data, Hole M0071C. Elapsed time = time since the start of the sensor package data file. Penetration depth is from drill logs. A. Cores 1R and 2R. B. Cores 3R–9R.

Figure F15. Borehole plug emplacement, Hole M0071B.

Figure F16. Equipment left behind in borehole, Hole M0071C.

Figure F17. Physical properties, Hole M0071A. MAD: red circle = bulk density, green circle = dry density, blue circle = grain density. *P*-wave: open square = *z*-direction, open circle = *x*-direction, blue dot = *y*-direction. Color reflectance: black = L^* , red = a^* , blue = b^* .

Figure F18. Physical properties, Hole M0071B. MAD: red circle = bulk density, green circle = dry density, blue circle = grain density. *P*-wave: open square = *z*-direction, open circle = *x*-direction, blue dot = *y*-direction. Color reflectance: black = L^* , red = a^* , blue = b^* .

Figure F19. Physical properties, Hole M0071C. MAD: red circle = bulk density, green circle = dry density, blue circle = grain density. *P*-wave: open square = *z*-direction, open circle = *x*-direction, blue dot = *y*-direction. Color reflectance: black = L^* , red = a^* , blue = b^* . Some of the scatter at the bottom of the hole is caused by Cores 7R and 9R overlapping in depth (due to coring of previously drilled material; see [Operations](#)).

Figure F20. Grain density and porosity data from MAD analyses, Site M0071. Lithologies are defined by core description (see [Lithology, alteration, and structure](#)).

Figure F21. Geometry of logging from the MeBo, Hole M0071C.

Figure F22. Total gamma ray downhole logging measurements through-pipe (green) and core data (gray), Hole M0071C.

Figure F23. Typical AF progressive demagnetization, Site M0071. Plotted points = successive position in orthogonal projection at the endpoint vector. Solid symbols = projections on vertical plane, open symbols = projections on horizontal plane.