Figure F1. Expedition 357 drill sites overlain onto multibeam bathymetry acquired during the expedition (50 m resolution). Expedition 304/305 sites are shown for context.

Figure F2. Multibeam data acquired over Atlantis Massif overlain with the vessel's navigation track plot, Expedition 357.

Figure F3. 3-D views of the multibeam data set gridded at 50 m resolution, Expedition 357.

Figure F4. The *RRS James Cook*, the drilling platform for Expedition 357 provided by NERC as an in-kind contribution. Image courtesy of National Oceanographic Centre, Southampton (NOCS).

Figure F5. The BGS RD2 seabed drill deployed by its own LARS over the starboard side of the *RRS James Cook*, Expedition 357. Image courtesy of Dave Smith.

Figure F6. The MARUM MeBo70 seabed drill deployed from the stern of the *RRS James Cook*, utilizing the vessel's A-frame, Expedition 357. Image courtesy of Dave Smith.

Figure F7. CTD rosette, *RRS James Cook*, Expedition 357. Image courtesy of Carol Cotterill.

Figure F8. IODP depth and naming conventions, Expedition 357. CC = core catcher.

Figure F9. Core flow for the offshore phase of Expedition 357. Not every sample is taken from every water sensor package/CTD cast. POC = particulate organic carbon.

Figure F10. Core flow for the onshore phase of Expedition 357.

Figure F11. Example of a compiled VCD form that summarizes dominant lithologies, alteration features, and structure logged in each hole, Expedition 357. See Figure **F12** for explanation of color scheme, symbols, and abbreviations.

Figure F12. Lithologies, symbols, and abbreviations used in VCDs, Expedition 357.

Figure F13. Modal classification scheme for plutonic igneous rocks, Expedition 357 (after Streckeisen, 1974).

Figure F14. Vein classifications used in the vein log, Expedition 357.

Figure F15. Intensity and intensity ranks for magmatic, crystal-plastic, schistosity, cataclastic/semibrittle deformation fabrics, veins, and brittle cracks/open fractures, Expedition 357.

Figure F16. Core reference frame (CRF) used for orientation of planar structures and apparent dips on cut surfaces, Expedition 357. Orientations are given as three-digit numbers (0°–360°) and dip angles as two-digit numbers (0°–90°).

Figure F17. Drill-mounted tracer injection system, shown on the MeBo drill, Expedition 357. The silver box is oil filled, with internal oil pressure maintained by the black compensator. The pump head and tracer feed sit inside the box, and the main controlling electronics sit in the silver pressure canister. The replaceable tracer fluid bag that feeds into the pump system is not shown. Image courtesy of Tim Freudenthal.

Figure F18. Seabed drill sensor package, Expedition 357. A. Various sensors mounted on the sensor package and associated wiring. SBE-9pV2 = profiler to measure conductivity, temperature, and pressure. SBE 63 = optical dissolved oxygen sensor. SBE-27 = pH/ORP (redox) sensor. METS = methane sensor. SBE-5T = pump. B. Drill-mounted water sensor package sitting behind the Niskin bottles (gray), shown here on the RD2 drill. Left canister = SBE-9pV2 profiler. Middle assembly = Niskin bottle trigger mechanism. Right canister = ECM. The dissolved oxygen, pH/ORP, and methane sensors are located beneath the SBE-9pV2 profiler and are not visible in this image. Image courtesy of Marvin Lilley. (Continued below.

Figure F18 (continued).

Figure F19. Drill-mounted Niskin bottles, shown here on the RD2 drill, Expedition 357. Image courtesy of Carol Cotterill.

Figure F20. Component parts of the downhole plug system used by the RD2 and MeBo drills, Expedition 357. A. Downhole plug caps can be removed to allow full access to the borehole or enable borehole fluid sampling by an ROV through a valve in the cap. B. Two additional units of the borehole plug consisting of a modified drill rod with a ball valve (leftmost end of image); another section with the swellable packer material (rightmost end of image) to achieve a sidewall seal, closing the borehole to allow fluid equilibration following coring operations; and a nylon shoe.

Figure F21. Orientation of minicores taken for *P*-wave and MAD analyses, Expedition 357. *z*-direction is vertical; *x*- and *y*-directions are horizontal. The horizontal plane is not oriented relative to a geographic reference, so *x*- and *y*-directions are referenced only to the plane between the archive and working halves.

Figure F22. Downhole logging tools, Expedition 357.