Figure F1. A. Olympus DeltaX portable X-ray fluorescence analyzer (pXRF) in its storage holster. B. General purpose lead-shielded sample mount. C. Lead shielded sliding core mount. D. Barcode reader for core ID. E. Dell laptop driver computer.

Figure F2. Calibration curves for elements quantitatively analyzed via pXRF during IODP Expedition 366. The plotted data are for the geological reference samples listed in Table T1.

Figure F3. Correlation curves for Si, Al, and Mg using the Olympus DeltaX pXRF system, showing general, if poor, linear relationships, despite considerable X-ray absorption at these wavelengths of these elements.

Figure F4. ICP-AES calibration curves for the Ca (396.847 nm) and Mg (280.271 nm) spectral lines, showing evidence for detector saturation (i.e., nonlinear changes in signal intensities at high concentration levels). These were generated during spreadsheet data calibration, based on results from the recently retired Leeman Labs ICP-AES on IODP Expedition 366.

Figure F5. pXRF vs. ICP-AES data comparisons of Expedition 366 samples for those elements where their quantitative analysis capabilities overlap. ICP-AES data were collected on sample solutions made from powders ignited for LOI determination; pXRF data were collected directly on the ignited powders.