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**IODP site 1256: petrological and  
textural variations down-core**

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An intact core from IODP (Integrated Ocean Drilling Program) site 1256, located in the eastern equatorial Pacific (Cocos Plate), was collected on three different legs (legs 206, 309, and 312). This is the fourth deepest hole that IODP has drilled since 1968, and is the first hole to reach the uppermost portion of in situ gabbroic oceanic layer 3. The purpose of this study is to examine down-hole petrological and textural trends, including variations in hydrothermal alteration products.

Fifty thin sections were cut at specific depths down-core and point counts of primary and secondary minerals were done on all samples. Some systematic trends can be inferred from the modal analyses concerning the dominant minerals and alteration products. Trends include a change from possible smectites to chlorite at 1050 mbsf, concentrations of quartz at varying depths, and changes in opaque oxides at 1230 mbsf. Preliminary electron microprobe analysis was done on six representative thin sections to identify some unknown minerals, including amphiboles, opaque oxides, and possible clay minerals, suggested by previous work that showed clays to be present in the upper part of the core. Back-scattered electron images were also collected in order to determine the mineralogy and texture of the fine-grained groundmass present in most of the upper core. Results to date have shown the presence of minimal sulphides, orthopyroxene and olivine, an abundance of clays, and the amphiboles were determined to be hornblende and actinolite.

Point-counts and electron microprobe analyses from a core collected from the Kane Fracture Zone on the Mid-Atlantic Ridge will be used to supplement data obtained from the site 1256 core, in particular whether the observed variations in textural and alteration minerals are unusual. Results from both cores will assist in understanding spatial variations in igneous and hydrothermal processes at mid-ocean ridges.