February 28, 2005

IODP EXPEDITION 305:
OCEAN CORE COMPLEX FORMATION, ATLANTIS MASSIF
WEEK 7 REPORT

OPERATIONS

During the past week, rotary coring advanced Hole U1309D from 1339.2 to 1415.5 mbsf with 75% recovery. The hole was left clean and clear to TD. Average ROP was 1.5 to 2.8 m/hr. A 20-bbl mud sweep was circulated after each 10 m of advance. Last core on deck was at 1015 hr, 23 February. Two successful logging runs (Triple combo and FMS) were completed to TD in Hole U1309D. The sonic tool failed during the first FMS run and was removed from the tool string. A VSP was attempted, but tool failure and excessive heave which led to premature termination of the planned logging program resulted in only one station recording useful data. A towed magnetometer survey was completed as we initiated our transit to Ponta Delgada. The week ends in transit, with a scheduled ETA of 0700 hr, 2 March.

INITIAL SCIENTIFIC RESULTS

We ended coring in Hole U1309D on Wednesday 23 February, 9 am, reaching the final depth of 1415.5 mbsf. The last recovered cores (Cores U1309D-279R to -295R, average recovery 75%) are dominantly medium- to coarse-grained, isotropic gabbros and olivine gabbros. One short interval of diabase, containing plagioclase phenocrysts and gabbroic xenoliths, was recovered in Core U1309D-287R (~1378 mbsf). A sulfide- and oxide-bearing gabbro maintains a sharp, subvertical contact through ~25 cm of Core U1309D-293R.

Gabbros and olivine gabbros are overall moderately altered. A peak of alteration, locally as high as 90%, related to an increase of amphibole-bearing veins, is present around 1380 mbsf. Deformation is rare, limited to local, weak magmatic foliations and cataclastic zones.

Analyses of discrete shipboard samples ended on Saturday, 26 February. The last geochemical and physical properties measurements data are consistent with the data acquired during the previous weeks. Paleomagnetic stable inclinations continue to indicate a reverse polarity magnetic field, slightly steeper at the bottom of the hole (below ~950 mbsf).

Expedition 305 operations ended with a series of downhole logging runs. Two logging runs were completed, with data recovered from the bottom of the hole from Triple Combo and FMS. The sonic and VSP tool failed, and no acoustic/seismic velocity data could be acquired below ~ 800 mbsf. Because of increasing heave, we had to stop logging operations, while attempting another VSP run using the single component seismometer, on Friday 25 February in the afternoon.

LABORATORY STATUS

The last core on deck for Hole U1309D was at 1015 hrs on February 23. Logging was completed on February 25 with two VSP runs and the deployment of the GI Seismic Gun. A Marine Mammal watch was posted for the VSPs as per policy. No marine mammals were sighted during the watch period. The shipboard laboratories are finishing up the processing of cores and samples. The labs close on Monday for cleaning.

HSE

A fire and lifeboat drill was held on Monday for all the ships crew.