

November 29, 2004

**IODP EXPEDITION 304:
OCEAN CORE COMPLEX FORMATION, ATLANTIS MASSIF
WEEK 2 REPORT**

OPERATIONS

TRANSIT TO SITE U1309 (Prospectus Site AMFW-01A): The transit was uneventful with the ship averaging 11.1 knots over the 939 nmi distance. The vessel arrived at location (based on global positioning system [GPS] coordinates) and launched a beacon at 0830 hrs on 24 November 2004.

OPERATIONS: After arriving at the first site, U1309 (Prospectus Site AMFW-01A), we assembled the BHA, measured, and drifted the pipe and ran the pipe to just above the seafloor. Operations began with a VIT camera bottom survey to locate suitable locations to spud the pilot hole and to install the Hard Rock Re-entry System (HRRS). The survey was completed in less than 2 hr and an appropriate area was selected for drilling (devoid of large boulders or rubble). A water sample and temperature measurement were collected with the water sampler/temperature probe (WSTP) from just above the mudline for microbiology. The first hole (Hole 1309A) was a punch core with the RCB coring assembly to capture the surface sediments. Rotary coring commenced in Hole U1309B at 0050 hrs on 25 November 2004. Weight on bit started at 4000 lbs with a rotation of 30 RPM, which has gradually increased to 12,000 lbs at 55 RPM as the BHA drilled into the hard formation. Penetration rates started at under 1 m/hr, but have increased to over 2 m/hr with the increased weight on bit and increased RPM. The drill string is currently being compensated by the passive heave compensator. A brief test of the active system was conducted at the start of coring operations, but the large vessel heave (4-5 m) has proved too large for the active heave compensator. Previous experience limits the use of the active heave compensator to ~2.5 m maximum heave.

SITE U1309 INITIAL SCIENTIFIC RESULTS

Upon arrival at site U1309 (Prospectus Site AMFW-01A, 30° 10.108'N, 42° 07.110'W) on November 24, a brief camera survey was completed that confirmed our initial choice of site. We successfully recovered ~2 m of unlithified microfossil ooze at Hole U1309A. Hole U1309B spud in at the same location and hard rock drilling commenced. In the 60 m drilled to date, a sequence that includes diabase, gabbro, and serpentinitized peridotite has been recovered. Locally, intrusive contacts and zones of fault rock are recognized. Recovery rates are very good (~35%) despite challenging weather conditions that continue at present.

LABORATORY STATUS

WSTP was deployed above the mudline prior to drilling. Water in the coil went to microbiology with a split to chemistry, overflow water went to chemistry for refrigeration and storage for postcruise research with an aliquot acidified and another poisoned. Contamination tracers (PFT and microspheres) are in use on an on-demand basis.

The DIS was not operating properly and occupied a good deal of time from our technical staff prior to coring. An intermittent connector or broken wire somewhere is plausible explanation for now. A new iteration of the MST upload software failed in

practice, bringing a previous version of the software back into use. Later a corrupted SAVE module was replaced but problems persist.

Test images were imported to populate the new image data management program demonstrating that it will be ready for the first microphotographs. Scanned images are available to the scientists on the ship web site. The scientists have been patient with our new core description process, waiting for the entry of all the parameters needed in the database to generate the new scanned core image background for the core description sheet.

The ALO's are handling Curation and considering the possibility of sending the first site data to IODP for endorsement.

The weather remains warm, wet and rough.

HSE

The ship crew has been removing survival suits from the cabins for inspection and inventory this week. Saturday, 27 November, the first boat drill was conducted. Ship personnel pointed out the features on a life jacket, presented a description for lowering a lifeboat, and gave instruction on the importance of using the lifeboat seat belt and all taking seasick medication. If an emergency, lifeboats are to be launched on the Captains order.