



**Daily Drilling and Scientific Report for IODP Expedition 325,  
Great Barrier Reef Environmental Change**

**5<sup>th</sup> March 2010 (0000-2400, local time)**

**1. Location**

HYD\_01C Site 8 (M0039A) and HYD\_02A Site 10 (M0040A)

Time zone: Brisbane Australia Time, UTC +10

Position at midnight (drill string):

Latitude: 19° 47.77716 S

Longitude: 150° 28.885 E

**2. Activity summary**

The vessel completed coring operations at M0039A and transited to the HYD\_02A transect where operations commenced at site 10, hole M0040A.

**3. Science report**

Core 10R (100% recovery) advanced to 14 mbsf. Continuous sequences of massive coral framestones (massive and branching *Acropora*, *Pocillopora* sp.) and microbialites were observed. In Core 11R the same lithology was observed but only 30 cm was recovered due to a broken and jammed core lifter impeding coring. Another 50 cm of coral framestone was recovered in Core 12R. Core 13R got jammed (pebbles between the core and the liner?) recovering predominantly carbonate sediments. Core 14R continued to 18.6 mbsf and again advanced the first 1 m rapidly, suggesting a sandy layer/cavity between about 17.1 and 18.1 mbsf, before encountering a hard deposit down to 18.6 mbsf. Cored lithologies confirmed this, with medium unlithified sands at the top of the core and about 50 cm of continuous massive coral (Faviid) and microbialite framestones at the base of the section.

Cores 15R, 16R, 17R and 18R advanced to 23.9 mbsf and recovered framestones composed of corals (massive Favids, *Acropora* sp, branching *Acropora* and *Tubipora* sp), coralline algal crusts and thick microbialite with some lithified internal bioclastic sediments. Core 17R was mainly broken and disturbed framestone whilst the section cored in 18R may have slipped out of the barrel on recovery, as only broken fragments of corals and microbialites were recovered from the core catcher. Core 19R advanced to the 25.4 mbsf with no recovery. Grainstone and gravels were recovered from Core 20R. Core 21R advanced to 28.4 mbsf, and also recovered grainstone. Coring at this hole was then terminated.

Core 1R from hole M0040A was on deck at 22:50 and consisted of fine lime mud containing planktonic and benthic foraminifera. Recovery was 100%. Core 2R recovered lime gravel and carbonate mud.

#### 4. Core recovery details

Hole	M0039A	M0040A
LAT water depth	107.04	126.01
Cores recovered	12	2
Drilled length	15.4m	3m
Recovered length	5.15m	2.09m
Recovery	33.44%	69.67%
Depth at midnight	18.13mbsf	3mbsf

#### 5. Weather

Sea state: Smooth (2) becoming slight (3) with swell of <1 m; wind direction SE force 1 – 2 becoming W to WNW force 2 (<6 knots) by mid afternoon; partly cloudy; 30°C.

Next 24 hrs: Sea state slight with swell of 0.70m; wind direction S/SE 5 - 10 knots; isolated showers.