



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

8th March 2010 (0000-2400, local time)

1. Location

HYD_02A Site 2 (M0042A)

Time zone: Brisbane Australia Time, UTC +10

Position at midnight (drill string):

Latitude: 19° 50.6388 S

Longitude: 150° 26.8818 E

2. Activity summary

Coring operations continued until the target depth of 46.4mbsf was achieved. Logging operations then commenced, and continued for the remainder of the day.

3. Science report

Core 19R consisted of broken *Halimeda* grainstone and coral fragments with about 30 cm of carbonate gravels and advanced to 28.0mbsf. Cores 20R, 21R and 22R recovered carbonate gravels and broken pieces of corals and grainstones with abundant benthic foraminifera. Core 21R showed clear evidence of moldic porosity with fine branching coral fragments and *Halimeda*(?) almost completely dissolved out. Core 23R advanced to 35.2mbsf and recovered a 36 cm continuous section of white, vuggy limestones in addition to some loose carbonate gravels. Several pieces of broken white rudstones composed of 1-2 cm coralline algal nodules (rhodoliths) were observed in the core catcher. Many of the nodule cores are composed of branching coral fragments (ie. *Porites*, *Pocillopora*). Cores 24R and 25R recovered a similar lithology to a depth of about 38.7mbsf, but in this case several 40-60 cm continuous sequences. However, during 25R the drill bit dropped rapidly over the last 70 cm indicating unlithified sands and/or cavities. Core 26R confirmed this observation with white, unlithified carbonate sands dominated by large oval benthic forams preserved in the core catcher along with loose coralline algae nodules, advancing down to about 40.2mbsf. These observations indicate a change in lithology at about 38mbsf. Cores 27R and 28R advanced to 44.4mbsf and recovered several 15-20 cm sections of *Halimeda*? (mainly molds) and benthic foraminifera dominated grainstones/rudstones. A thin encrusting *Montipora/Porites* was observed on a broken surface in the core catcher material of 28R. Core 29R continued to 46.4mbsf and recovered unlithified fine carbonate sands.

4. Core recovery details

Hole	M0042A
LAT water depth	50.78m
Cores recovered	11
Drilled length	19.9m
Recovered length	4.72m
Recovery	23.72%
Depth at midnight	46.4mbsf (final depth)

5. Weather

Sea state: slight (3) becoming moderate (4) by mid afternoon with swell of <2 m; wind direction SE becoming ESE by midnight, force 3 increasing to 6 (22-27 knots) by evening; partly cloudy; 30°C.

Next 24 hrs: Sea state moderate with swell of 1.7m; wind direction SE 15/20 knots; scattered showers and isolated thunderstorms.