



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

16th February 2010 (0000-2400, local time)

1. Location

Site HYD_01C Site 6 (Site M0031).

Time zone: Brisbane Australia Time, UTC +10

Position at midnight:

Latitude: 19° 40.73013 S

Longitude: 150° 14.37997 E

2. Activity summary

A final core was run at M0031A, taking the hole to a depth of 43 mbsf before the decision was made to conduct a through-pipe gamma log prior to moving to M0032A and beginning coring operations.

3. Science report

Core 17R in M0031A advanced to 43 mbsf and recovered bioclastic carbonate sediments, fragments of broken and abraded corals and bivalves (*Tridacna*) and grey limestone clasts. Some of the coral fragments appear to be diagenetically altered.

Coring began at M0032A in about 90 m of water depth and spudded into hard limestone clearly viewed on the down hole camera. The first core 1R was on deck at 12:00. This run was only 1.8 m and recovered material was ca. 50cm. This contained several branching *Montipora* and core catcher materials composed of algal sand and crusts. Some of live algae were attached onto the crusts. Core 2R did not recover any material, yet core 3R captured massive coral pieces some of which coated by coralline algae. Massive coral fragments were also included. Core 4R reached 10.3 mbsf and recovered lime pebbles with sand and gravels. Lower sections consisted of very fine clay size material that may have been produced as a result of coring operations. Core 5R was a 1 m run, and was able to be divided into two lithological units. The upper level consisted of coral grainstone, whereas the lower part was fine clay material, as was observed in the previous core. Core 6 was on deck at 19:35 and consisted of coral framestone. A two metre run was attempted to obtain core 7R, resulting in recovery of a 30 cm long massive *Acropora* (sp. *palifera/cuneata*)! This indicates very shallow high-energy environments when this coral grew. Core 8R ran 1.2m and recovered 25 cm, obtaining 20 % recovery. The lower part of this core contained framestone composed of massive corals. Core 9R recovered massive *Acropora* sp. in the core catcher.

Since coring runs have become shorter, the core recovery statistics have improved.

4. Core recovery details

Hole	M0031A	M0032A
Cores recovered	1	10
Drilled length	3m	17.8 m
Recovered length	0.44m	3.7 m
Recovery	14.6%	20.79 %
Depth at midnight		17.8 mbsf

5. Weather

Sea state: slight (3) with swell of 0.5 – 1.25m; wind direction N to NE force 2 becoming 3 (7-10 kts); Overcast and cloudy in the morning becoming sunny; intermittent showers; 30°C.

Next 24 hrs: Sea state moderate with swell of ~1.2m; wind direction NE 10-15kt; showers and isolated thunderstorms.