



Daily Drilling and Scientific Report for IODP Expedition 313 New Jersey Shallow Shelf

6th July 2009 (0000-2400, local time)

1. Location

Hole MAT-3A (Hole M0029A).

Time zone: US Eastern Time, UTC -4

Position at midnight:

Latitude: 39° 31.1705' N

Longitude: 73° 24.7925' W

2. Activity summary

Coring operations at Hole M0029A (MAT-3A).

3. Science report

This day saw a good drilling pace with a steady retrieval of full length cores. One core was only 1.59m (158R), however, all others were 3.00m or longer. We retrieved 36m of sediment in 12 cores from 584-620 mbsf. The sediment shows the superimposition of a fining upward (FU) sequence over a coarsening upward (CU) sequence.

The FU sequence (cores 155-160R, 584-602 mbsf) is comprised of tight, brownish grey silt, with very fine-grained quartz sand giving rise up section to soft, dark-grey silty clays. Accessories are diversified with a suite of mica, lignite, shell fragments, some glauconite remnants and very abundant forams. The base of the FU sequence is characterized by sparse and reworked coarse to very coarse size glauconite and quartz grains whereas the top of the observed part of the FU sequence shows abundant diatoms and bioturbation (quartz and glauconite grain-lined burrows).

The CU sequence (cores 161R-166R, 602-620 mbsf) is made up of soft, dark greenish-grey, silty and clayey, glauconite and quartz sand passing upward from moderately sorted, fine to medium grain size, to unsorted, very fine to very coarse grain size. Glauconite grains are subrounded whereas quartz grains are subangular. Glauconite content and grain size increase upward. Fauna, mica and lignite are exceptional.

The boundary between the "soft" CU and the "tight" FU sequences at 602 mbsf (core 161R) corresponds, on our reference seismic line Oc 270 529, to

the high amplitude reflector that characterizes the Lower Miocene unconformity m5.2 (Burdigalian / Aquitanian boundary?).

4. Core recovery details

Hole	M0029A
Cores recovered	155R-166R (12 runs)
Drilled length	36.6 m
Recovered length	35.63 m
Recovery	97.35 %
Depth at midnight	623.81 mbsf

5. Weather

Sea swell 1-2 ft; Light variable breeze ; strong sun with patchy cloud; 28°C.
Next 24 hours: sea swell 2-3 ft; S winds 5-10 kt; 26°C.