



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

9th 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

Today, both a good drilling rate and high recovery were maintained. We recovered 10 cores and 28m of sediment between 675 and 706 mbsf (cores 189 to 198R). Core 192R came up with the exceptional recovery of 3.52 m in strongly expanding silty clays and mud. The recovered sediments show three main packages bounded by unconformities.

- Dark, brownish-grey micaceous clayey silt and silty clay with shell fragments, diatoms and scattered very fine grain-size quartz grains (189-192R, 675-684 mbsf). This package is capped by glauconite sand above the **m5.45** unconformity.

- Dark, brownish-grey, glauconitic sandy silt with 5%, fine-grained glauconite clasts, abundant diatoms and forams interlaminated with a glauconitic sandy silt with 30% medium to coarse-grained glauconite aggregates and sparse coarse-size, subangular quartz grains (192-196R, 684-700 mbsf). The sharp facies change from glauconitic coarse sandy silt to silty clay (693 mbsf, core 194R), giving rise up section to a thoroughly bioturbated horizon (687 mbsf, core 192R) may correspond to the **m5.47** unconformity.

- Dark, greenish-grey, coarsening upward, fine to medium grained glauconite sand (>40% glauconite) with 1-2% of subangular quartz grains of very coarse to granule grain-size (196-198R, 700-706m). This package is bounded above by a sharp change in facies from sand to silt, that fits with a high amplitude seismic reflection on the oc270 529 seismic line, and is bounded below by tight sand to sandstone, that is a candidate to correspond to the **m.5.6** unconformity.

These thin sediment packages and their bounding unconformities represent a period of c.1.5Ma, at approximately 20Ma BP. They characterize a period of relative sediment starvation, which may have separated the onset of formation of two major prograding clinoform bodies that compose the Early Miocene New Jersey margin.

4. Core recovery details

Hole	M0029A
Cores recovered	189R to 198R (10 runs)
Drilled length	30.5m
Recovery length	28.14m
Recovery	92.26%
Depth at midnight	709.21 mbsf

5. Weather

Sea swell 4-6 ft; NE 10 – 15 gusting to 25 kts; sunny intervals becoming overcast by late afternoon; 19°C.

Next 24 hours: sea swell 4-6 ft subsiding to 2-4 ft; NE winds 15-20 kt diminishing 10-15 kt; 22°C.