Biozonation and Correlation of BDX-1 and BDX-2 Wells of Deep Offshore Niger Delta Using Calcareous Nannofossils*

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Search and Discovery Article #50194 (2009)
Posted July 29, 2009

*Adapted from expanded abstract prepared for AAPG International Conference and Exhibition, Cape Town, South Africa, October 26-29, 2008.

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Abstract

The need for absolute age determination and refined zonation of the deep offshore Niger Delta area has made calcareous nannofossil very useful over other fossils, though they still compliment each other. This study is aimed at subdividing the sequence within the depth intervals of the two wells into zones (Figure 1 and Figure 2). 124 and 220 ditch cutting samples for BDX-1 and BDX-2 wells respectively were analyzed for nannopalaeontology. The calcareous nannofossils species identified were used to make biostratigraphic deductions, using the standard zonation schemes (Figure 3 and Figure 4).

The zones encounter in this study are *Cyclicargolithus floridanus* zone (NN6), *Discoaster bollii* zone (NN7-NN8), *Discoaster hamatus* zone (NN9), *Minylitha convalis* zone (NN10), *Discoaster berggrenii* zone (NN11a), *Discoaster quinqueramus* zone (NN11b), *Ceratolithus spp.* zone (NN12), *Gephyrocasa spp.* zone (NN13) and it ranges from Middle Miocene to Early Pliocene. This zones were derived based on the First and Last occurrences of marker species as well as their relative abundance. Stratigraphic positioning was used to mark the top and the base of NN7and NN8 interval, since the boundary between the two can not be determined. The presence of *Ceratolithus spp.* at the upper part of BDX-2 marks the boundary of Miocene-Pliocene.

The two wells correlate with each other based on the related zones derived (Figure 5). The resulting biozonation has further helped to subdivide the Deep Offshore Niger Delta Neogene sequence into easily recognizable biostratigraphic units which will enhance oil exploration in the area.

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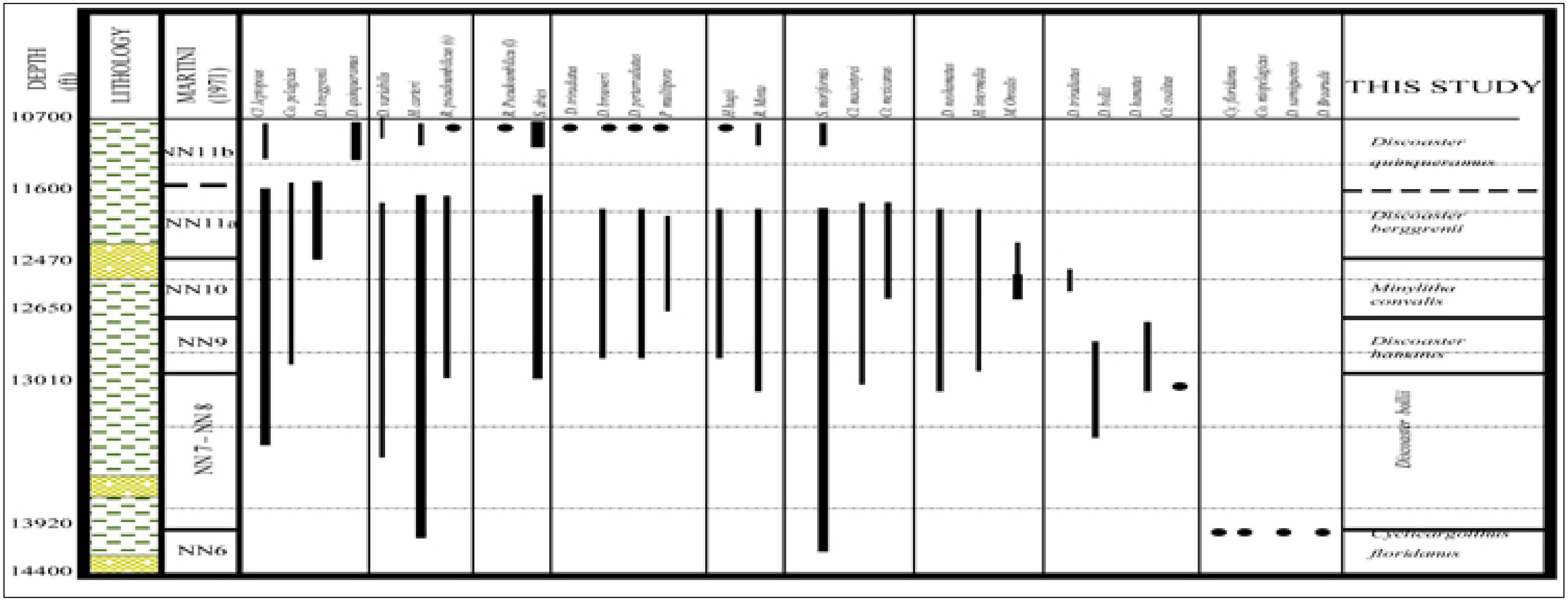

Figure 1. Nannofossil distribution of BDX-1 well.

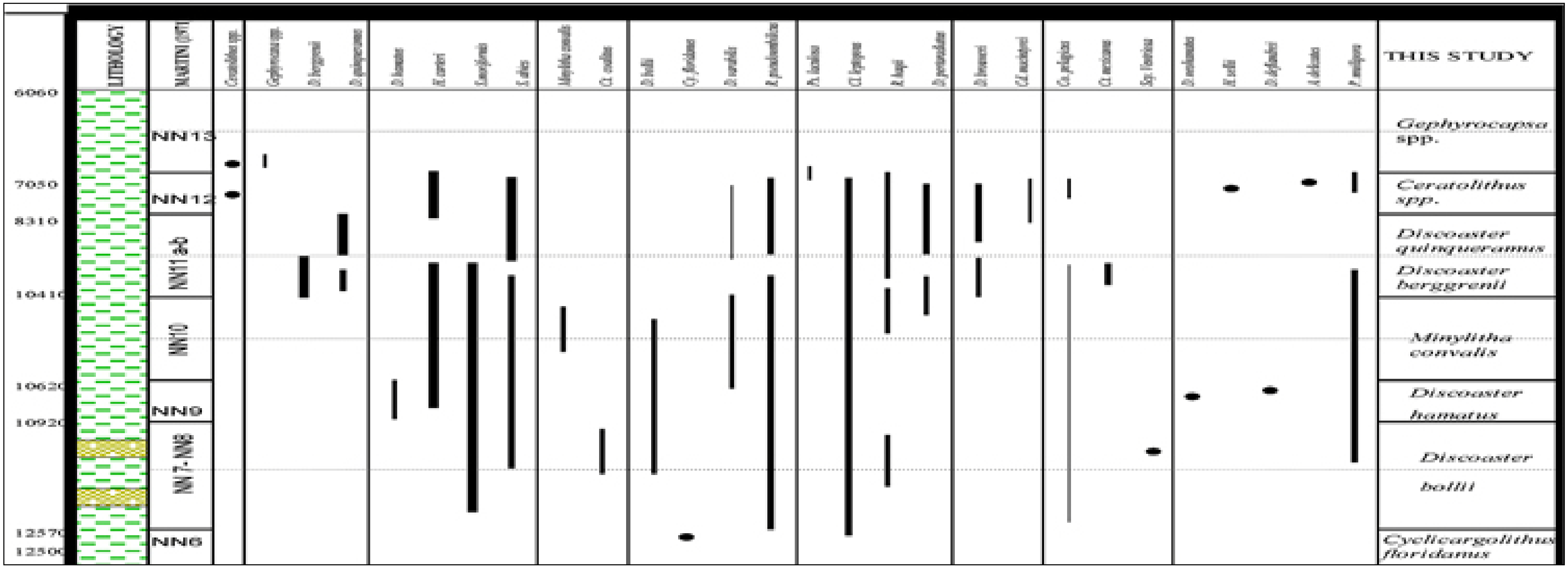

Figure 2. Nannofossil distribution of BDX-2 well.

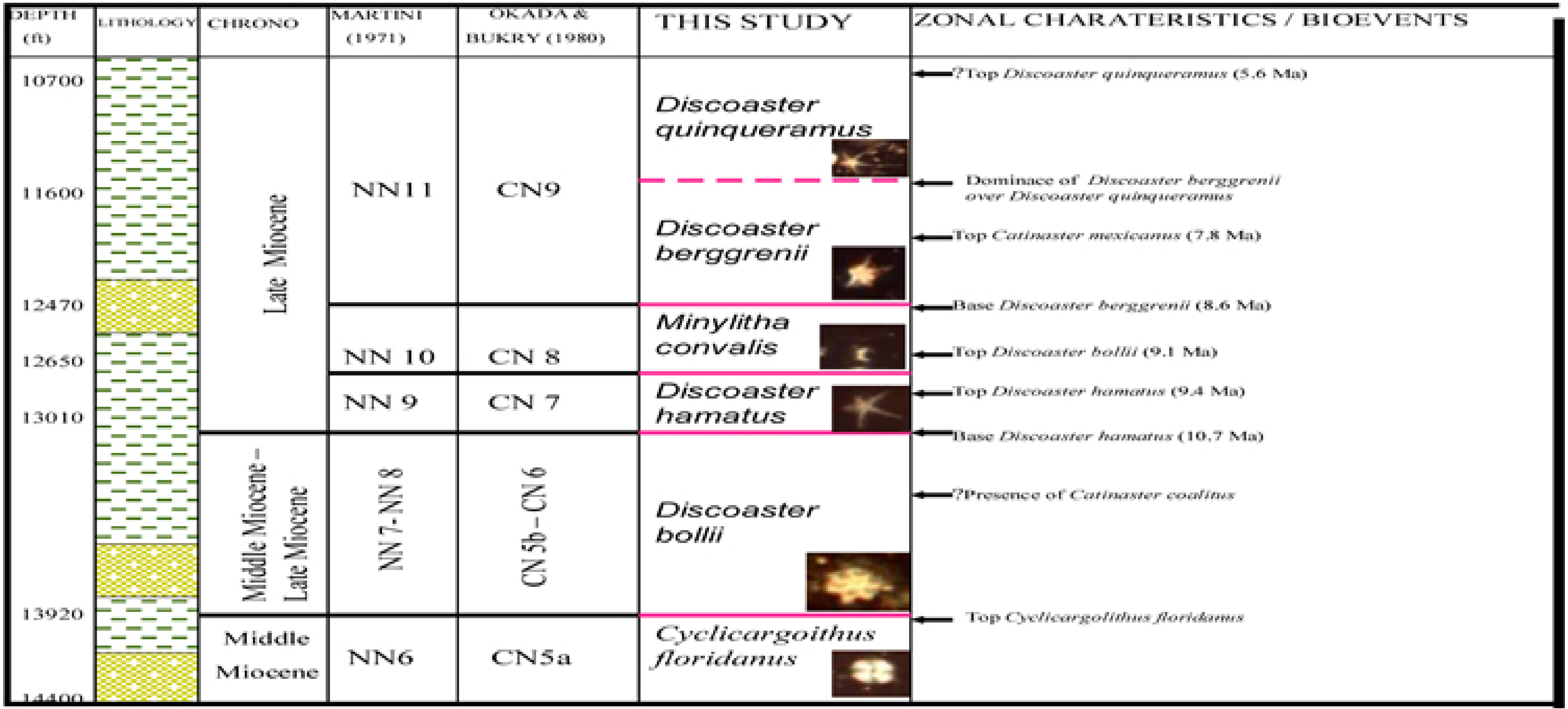

Figure 3. Biozonation of BDX-1 well.

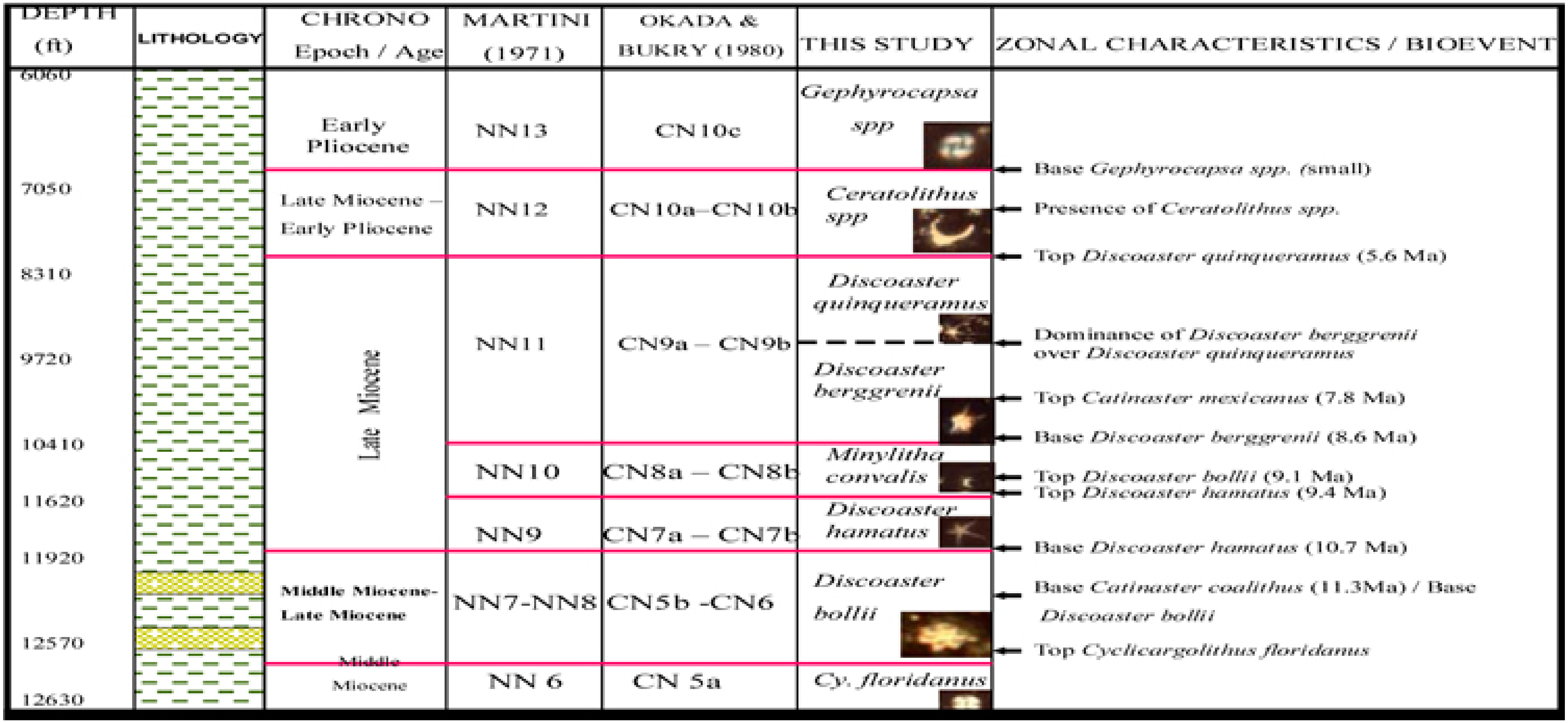

Figure 4. Biozonation of BDX -2 well.

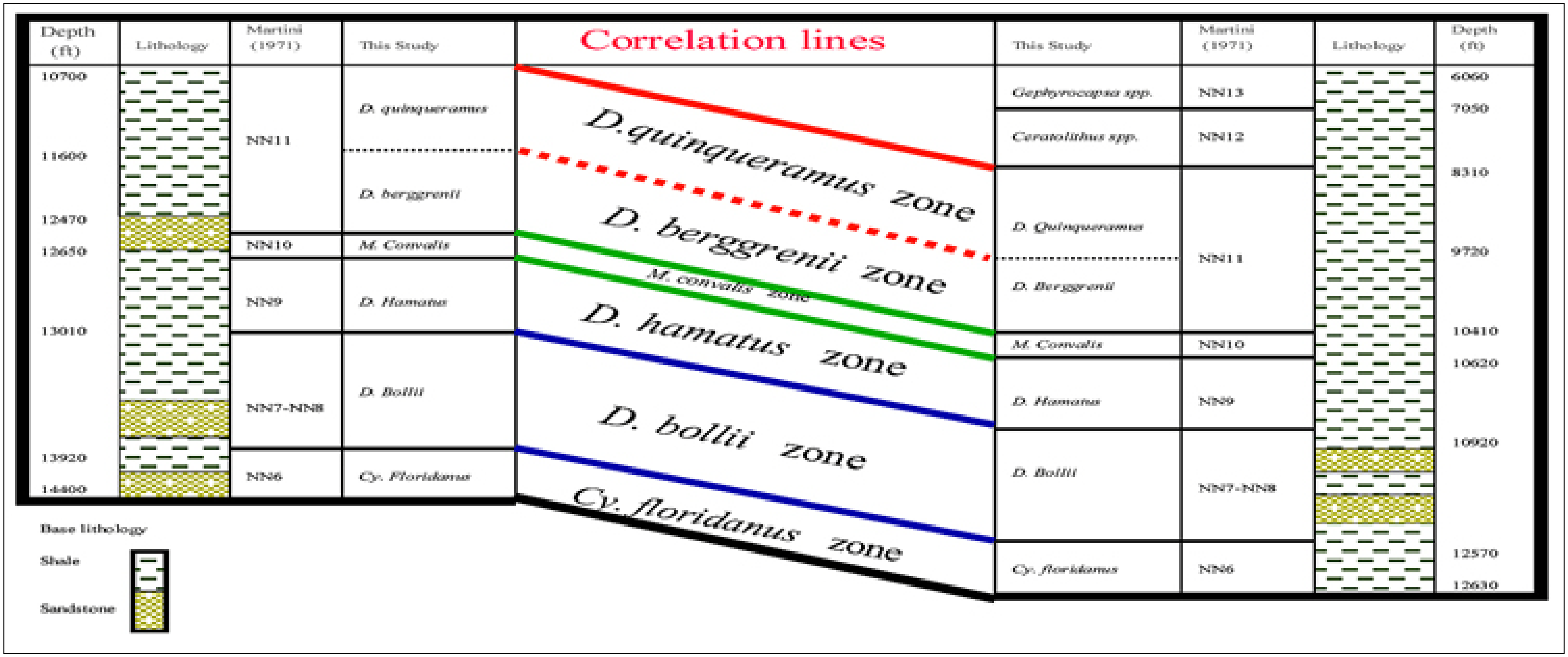

Figure 5. Correlation table for BDX-1 and BDX-2 wells.

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