ABSTRACT

The Miocene-aged deltaic Agbada Formation, Niger Delta, Nigeria, is composed of prograding sediments deposited on a series of basin-ward tilted normal faults, characterized by structural collapse. It consists of shallow marine and non-marine deposits overlying faulted collapsing sub-formation shale deposits. Sequence stratigraphic analysis of gamma ray wireline well logs shows that the Agbada Formation consists of at least four third order sequences. Thickness maps of the sequences and structural analysis of the sequence surfaces indicate rollover anticlinal structures reflecting the orientation of the underlying faults. Generally stratigraphic thinning of older sequences covers a wider areal extent than that of younger sequences and the sequences become thinner upward and landward. Chronostratigraphic analysis reveals the spatial variation in the location and zones of stratigraphic thinning. The stratigraphic thinning may be the result of erosion, non-deposition, or slower deposition. The spatial variation may be related to shift in fluvial deltaic deposition combined with a fall in the relative sea level.
Sequence Stratigraphy, Chronostratigraphy and Spatio-Temporal Stratigraphic Thickness Variation of the Agbada Formation, Robertkiri and Delta Fields, Niger Delta, Nigeria.

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OBJECTIVE

- The Miocene-aged deltaic Agbada Formation, Niger Delta, Nigeria, is composed of prograding sediments deposited on a series of basin-ward tilted normal faults, characterized by structural collapse.
- Thickness maps of the sequences and structural analysis of the sequence surfaces indicate rollover anticlinal structures reflecting the orientation of the underlying faults.
- Generally stratigraphic thinning of older sequences covers a wider areal extent than that of younger sequences and the sequences become thinner upward and landward.
- Chronostratigraphy reveals the spatial variation in the location and zones of stratigraphic thinning. The stratigraphic thinning may be the result of erosion, non-deposition or slower deposition.
- The spatial variation may be related to shift in fluvial deltaic deposition combined with a fall in the relative sea level.

Robertkiri Field

- The chronostratigraphic analysis and thickness map of the Robertkiri field reveals areas of stratigraphic thinning shifting from the center towards the edges as time progresses.
- Sequence 1 contains an elongated structural high extending from east to west and thinning to the north and south. The thinning is mostly localized to the flanks of the formation within the field. The structural high gets bigger from the older sequences to the younger sequences. Thinning of older sequences covers a wider areal extent than that of younger sequences.
- The thinning is mostly localized to the flanks of the formation within the field. The structural high gets bigger from the older sequences to the younger sequences. Thinning of older sequences covers a wider areal extent than that of younger sequences.

In summary, stratigraphic thinning of older sequences covers a wider areal extent than that of younger sequences and sequences become thinner upward and landward. The stratigraphic thinning may be the result of erosion, non-deposition or slower deposition.

REFERENCES