

The Stratigraphy of the Choptank and St. Marys Formations in Southern Delaware and Eastern Maryland : Sorting Lithostratigraphy and Chronostratigraphy

Paul J. Martin

University of Delaware, Department of Geosciences

The Miocene strata of the St. Marys and Choptank formations were examined in outcrops and the subsurface of eastern Maryland and western Delaware as part of an ongoing investigation into the ages and environments of the units as well as the nature of their contact. The current research determined the lithofacies within these formations at two outcrops in eastern Maryland and one corehole drilled for this project in western Delaware, as well as data gathered from existing coreholes drilled by the United States Geologic Survey and Delaware Geologic Survey. Paleoenvironments are being identified through analysis of lithofacies and foraminifera and the age framework through foraminifera and strontium isotope stratigraphy at these and other sites in the region. Lithostratigraphic correlations indicate that the units extend continuously from eastern Maryland through the subsurface of southern Delaware and tend to thicken down-dip to the south and east. Bio- and chronostratigraphic work currently underway aims to address whether the trend is due to erosional processes at an unconformity between the formations or variable sedimentation. The work will also determine sequence stratigraphic relationships within the units and fit them into the context of the regional framework. Current chronostratigraphic work also will examine the extent of the diachronous nature of the formations as they trend down-dip.