Mapped Sedimentary Facies on the Lucama and Kenly East 7.5-minute Quadrangles, Johnston, Wilson, and Wayne Counties, North Carolina

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INTRODUCTION

The sedimentary cover of the Lucama and Kenly East 1:24,000-scale quadrangles, located in the Raleigh 1:100,000-scale sheet, was mapped as part of the STATEMAP Geologic Mapping Program in 1996-1997. These quadrangles are in the Upper Coastal Plain of eastern North Carolina in parts of Johnston, Wilson, and Wayne Counties. Elevations range from about 90-feet above sea level in the northwestern map area to about 170-feet in a northeast-southwest orientation and represent a former shoreline location. The database collected for this mapping effort consists of 25 continuous cores, 58 power-drill holes, and 40 gravity cores. The Blue Ridge and the coastal plain are the dominant rock units in the mapped area. The Blue Ridge is represented by Late Cretaceous to Early Tertiary metamorphic and igneous rocks in the southeast and by Upper Cretaceous sedimentary rocks in the northwest. The coastal plain is represented by coastal plain sands and clays of the Cenozoic Era. The section of the coastal plain unconsolidated sediments of the Lucama and Kenly East quadrangles, including the Yorktown Formation, the Bacons Castle Formation, and the Barhamsville Member of the Upper Pliocene Bacons Castle Formation, overlies the Middle and Late Miocene sedimentary rocks of the Coastal Plain sequence. The sedimentary cover of the Lucama and Kenly East 1:24,000-scale quadrangles, located in the Raleigh 1:100,000-scale sheet, was mapped as part of the STATEMAP Geologic Mapping Program in 1996-1997. These quadrangles are in the Upper Coastal Plain of eastern North Carolina in parts of Johnston, Wilson, and Wayne Counties. Elevations range from about 90-feet above sea level in the northwestern map area to about 170-feet in a northeast-southwest orientation and represent a former shoreline location. The database collected for this mapping effort consists of 25 continuous cores, 58 power-drill holes, and 40 gravity cores. The Blue Ridge and the coastal plain are the dominant rock units in the mapped area. The Blue Ridge is represented by Late Cretaceous to Early Tertiary metamorphic and igneous rocks in the southeast and by Upper Cretaceous sedimentary rocks in the northwest. The coastal plain is represented by coastal plain sands and clays of the Cenozoic Era. The section of the coastal plain unconsolidated sediments of the Lucama and Kenly East quadrangles, including the Yorktown Formation, the Bacons Castle Formation, and the Barhamsville Member of the Upper Pliocene Bacons Castle Formation, overlies the Middle and Late Miocene sedimentary rocks of the Coastal Plain sequence.

Facies Interpretation:

- Tphms - Heavy Mineral bearing Sand:
  Conformably overlies the Upper Pliocene Yorktown Formation in core KE-C-20, and may represent an oxidized portion of that unit or possibly a regressive phase of the Bacons Castle Formation as mapped by the authors. This unit may also be the result of heaving sand encountered during coring and may not accurately reflect the environment of deposition most likely nearshore marine (personal communication, Norman Frederiksen, 2001).

- Tpcbs - Cross-bedded Sand:
  Predominantly pale yellowish orange 10YR (8/6) sands and light gray (N7) silty clayey flasers; fine- to medium-grained; well-sorted; quartz grains are subangular to subrounded. The massive sand unit is almost always structureless and was always recovered in a very wet, soupy condition. This unit may be the result of heaving sand encountered during coring and may not accurately reflect the environment of deposition most likely nearshore marine (personal communication, Norman Frederiksen, 2001).

- Tplss - Laminated Silt and Sand:
  The cross-bedded sand was deposited in a sub tidal, shoreface environment to a fluvo-estuarine environment during a general regression and may correlate with the Upper Pliocene Bacons Castle Formation of Virginia.

- Tpmss - Massive Muddy Sand:
  Predominantly moderate red 5R (4/6). Unit occurs throughout the mapped area.

- Tpcfs - Cross-bedded Flasered Sand:
  Predominantly moderate red 5R (4/6). Unit occurs throughout the mapped area.

- Tpgrv - Gravel Patches:
  Predominantly moderate red 5R (4/6). Unit occurs throughout the mapped area.

- Tpy - Silt:
  Predominantly moderate red 5R (4/6). Unit occurs throughout the mapped area.

Additional Drill Holes

- Additional Drill Holes

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