

Subsurface Middle Wilcox Correlation of Central Louisiana

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Correlation of Middle Wilcox stratigraphic units is shown by a set of two east-west electric-log cross sections that extend across central Louisiana (Fig.1). The Wilcox stratigraphic units are those proposed by the Shreveport Geological Society (1961). Cross sections are constructed of electric logs with a vertical scale of 1 cm = 12 m (1 in = 100 ft). The stratigraphic datum is the Tew Lake Marker.

One cross section contains 22 well logs. It shows stratigraphic correlation of Wilcox units recorded on sonic logs. The other cross section contains 71 well logs, including a modern log for the Angelina BBF No.1 corehole in Concordia Parish (Goddard, 1995) and a ten-well loop to the Carter No. 2 corehole in Sabine Parish (Glawe, 1995). This cross section illustrates correlation of Wilcox units which are portrayed by different types and vintages of electric logs.

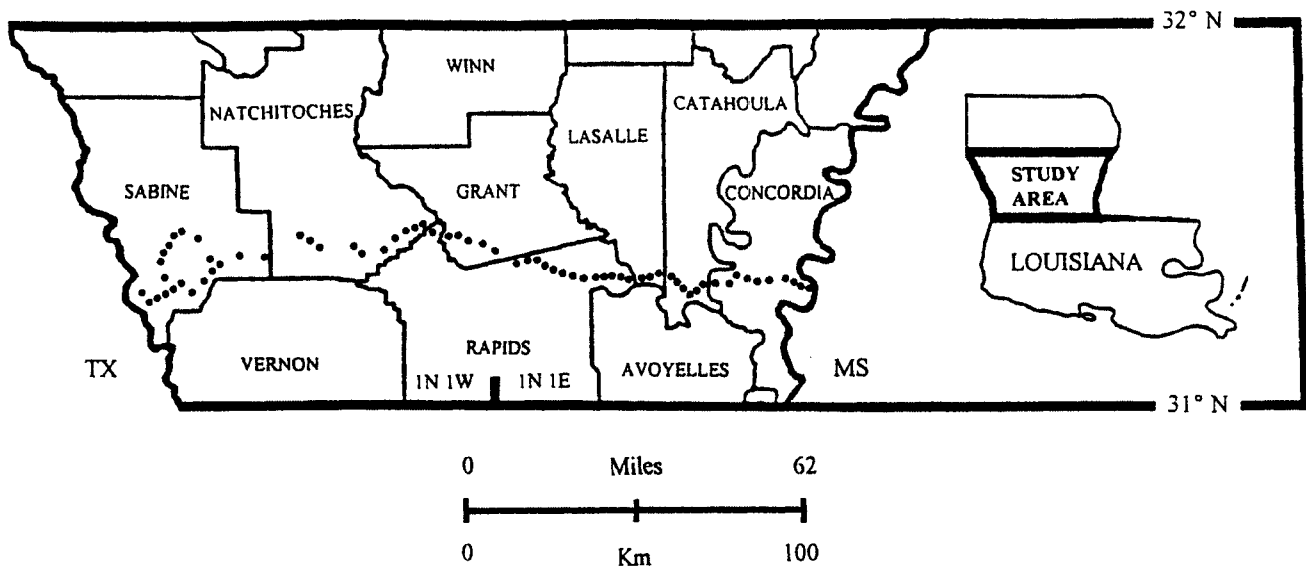
Most of the stratigraphic units (Fig. 1) are coarsening-upward sequences that range in thickness from 12 to 24 m (40 to 80 ft). Some of these sequences are capped by thin lignite beds. In certain areas, one or more stratigraphic units are cut out and replaced by channel sands that are about 30 m (100 ft) thick.

Certain Middle Wilcox stratigraphic units in central Louisiana exhibit relatively distinct and persistent features that are useful for electric-log correlation. Examples of such stratigraphic units are:

1. Big Shale-- an unusually thick (12 to 24 m or 40 to 80 ft) shale bed at the base of a coarsening-upward sequence;
2. Tew Lake Marker-- a calcareous bed about 3 m (5 to 10 ft) thick;
3. Yakey-- a 9 to 12 m (30 to 40 ft) thick, coarsening-upward sequence capped with a thin lignite bed;
4. Artman-- a 9 to 18 m (30 to 60 ft) thick, coarsening-upward sequence that is finer grained at the very top; and
5. Campbell-- a 9 to 15 m (30 to 50 ft) thick, coarsening-upward sequence commonly capped with two thin lignite beds.

References

- Glawe, L.N., 1995, Paleoenvironments and sequences of subsurface Paleocene Wilcox in Sabine Parish, Louisiana: Gulf Coast Association of Geological Societies Transactions, v. 45, p. 219-227.
- Goddard, D.A., 1995, ed., Deltaic reservoir characterization: Geological, Petrophysical and Engineering applications: LSU Basin Research Institute Technical Report No. 95-2, 124 p.
- Shreveport Geological Society, 1961, Oil and gas producing zones in the Wilcox (Eocene) of central Louisiana: Shreveport Geological Society, 23 p.



Paleocene Wilcox Stratigraphic units, markers, and abbreviations (after Shreveport Geological Society, 1961):

Big Shale (BS)
 A-1
 E-2
 Tew Lake Marker (TLM)
 Tew Lake Sand (TLS)
 Miller (MIL)
 Yakey (YAK)
 C-5/Turner (C-5/1)
 Artman (ART)
 Nichols (NIC)
 Wilds
 Campbell (CBL)
 Baker (BK) includes Armstrong
 Parker/Long Slough (PLS)
 E-5
 C-7 includes Beltzhoover (BH)
 Minter (MIN) includes Bee Brake
 Bayou Twisty (BTW)
 Deville (DV)
 Hudson (HUD)
 Little Shale (Lsh)

Figure 1: Correlation of Middle Wilcox stratigraphic units is shown by a set of two east-west electric-log cross sections that extend across central Louisiana.