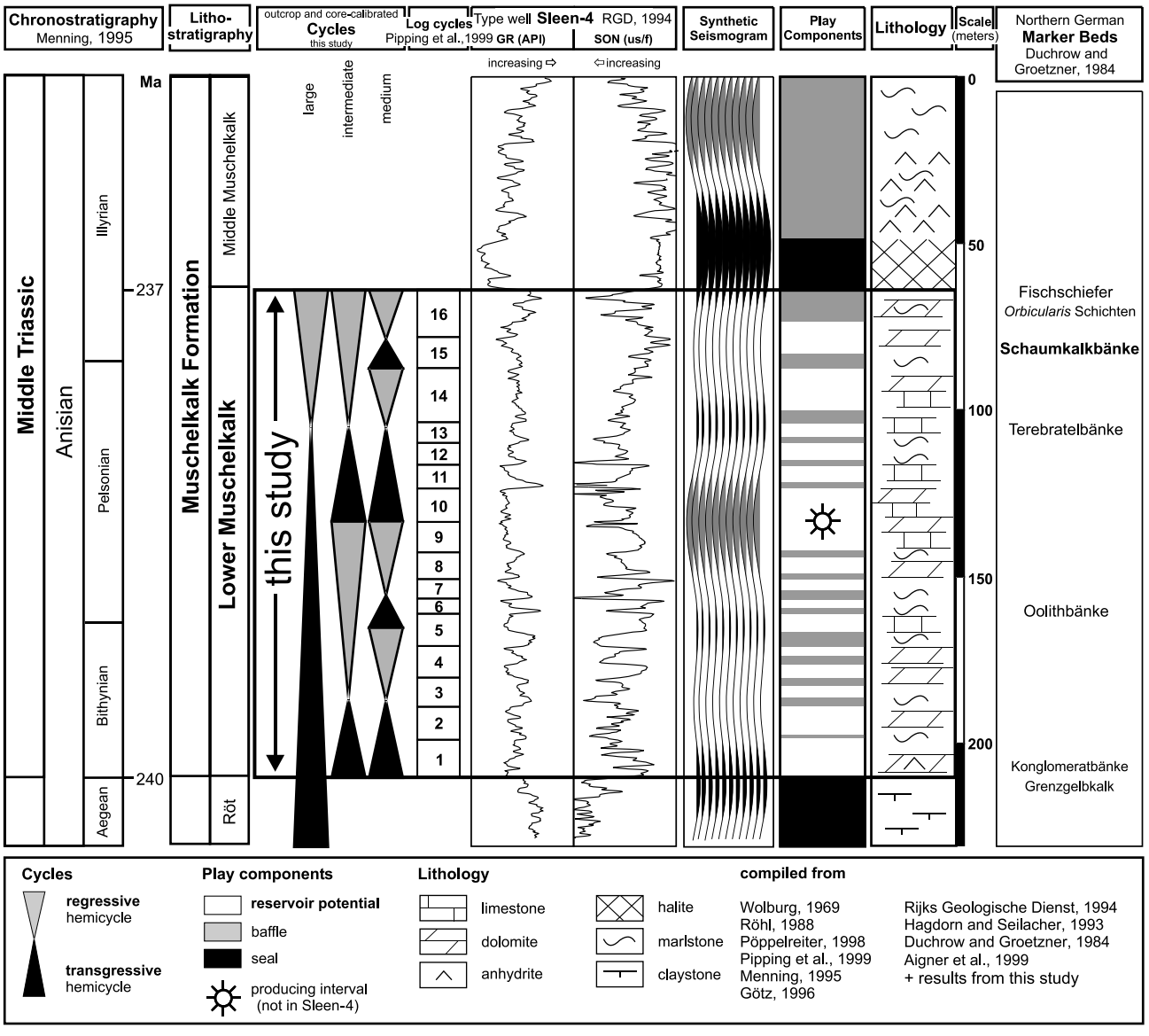

Figure 3. Integrated Lower Muschelkalk stratigraphy combing the German outcrop marker beds with the Dutch Muschelkalk type well Sleen-4 (see Figure 2 for location). The marker beds themselves pinch out toward the Dutch basin margin. Their lateral equivalent sediments and/or the correlative interval can be recognized within the subsurface.

Feist-Burkhardt, 1999; Kedzierski, 2002). Lateral equivalents of some marker beds observed in German outcrops can also be recognized in cores and wire-line logs of the subsurface (Gaertner, 1993; Geluk, 1999). The depositional cycles are of key importance in reservoir prediction (Pipping et al., 1999).

METHODS AND SOURCES OF DATA

In general, this study follows the one-dimensional (facies, reservoir properties, and vertical stacking), two-dimensional (genetic correlation), to three-dimensional (mapping) approach for carbonate reservoir characterization, as suggested by Kerans and Tinker (1997). The investigated data set includes the sedimentologic description of 10 cored wells and 3 outcrops, 16 wells with cuttings and/or sidewall samples, and good-quality wire-line logs (gamma ray, sonic, and density) from more than 170 wells (see Figure 2 for location). The generation of electrofacies types relied chiefly on the visual clustering of gamma-ray, sonic, and density logs in cored wells and was then extended to wells without core coverage but was repeatedly cross-checked with cutting or sidewall samples. Depositional cycles or sequences at any physical and temporal scale as well