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Line 19 runs southwest–northeast from the Zeeland High towards the Peel-Maasbommel Complex. It crosses a small portion of the Oosterhout Platform and the Roer Valley Graben (RVG). The RVG is bounded by the Feldbiss Fault Zone (Veldhoven Fault) to the west and the Peelrand Fault Zone to the east.

The part of the Zeeland High covered by Carboniferous strata is referred to as the Campine Block. It displays a relatively complete, tilted and faulted Limburg Group, which is unconformably overlain by the Upper Cretaceous Chalk Group. The absence of Triassic and Jurassic strata on this high, while present within the RVG, is attributed to significant uplift and erosion during the main Late Jurassic to Early Cretaceous rifting phases, prior to Late Cretaceous deposition. Compared with Lines 17–18, which lie further north, Line 19 shows that both the Permo-Triassic succession and the Jurassic Altena Group (Sleen and Aalborg formations) are present on the Zeeland High. This suggests that the Oosterhout Platform experienced less uplift prior to the deposition of the Upper Cretaceous Chalk Group.

The Chalk Group is overlain by a thick sequence of the North Sea Supergroup. On the rift shoulders, the Chalk Group was deposited during and after the Campanian (Sub-Hercynian) tectonic inversion and is relatively thick. The Carboniferous sequence is also present within the RVG, but it is deeply buried. Due to limited seismic resolution at these depths, reliable interpretation is not possible. Although the Permo-Triassic succession is not further subdivided in this section, recent work by Cecchetti et al. (2024) has presented a more detailed differentiation of the Permo-Triassic interval along this line. In the RVG, the top of the Permo-Triassic appears as a high-reflectivity interval, interpreted as the heterogeneous Muschelkalk Formation.

Unlike the highs to the south and north, the RVG contains a thick Jurassic succession, which is unconformably overlain by a thin Chalk interval. Most of the Chalk Group was eroded during the Late Cretaceous (Sub-Hercynian) tectonic inversion, and the remaining thin succession represents post-inversion units such as the Maastricht and Houthem formations. On the Peel-Maasbommel Complex, forming the eastern rift shoulder of the RVG, a similar syn-inversion Chalk Group sequence is present, although it is significantly thicker. This may indicate deposition within a larger depocentre located north of the RVG inversion axis.