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Biostratigraphic correlation of Miocene drillings in the Vienna Basin (Austria) - Integrated Neogene stratigraphy of the largest onshore petroleum province in Central Europe (Vienna Basin, Austria)

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Numerous boreholes of the OMV oil company penetrate the northern Vienna Basin (VB) and several detailed analyses have been conducted on these drilling for years. Despite the effort of decades, the distribution and correlation of Neogene sediments throughout the basin remained ambiguous, due to the complex fault system of the VB. To resolve remaining issues of the Neogene deposits of the area OMV initiated detailed integrative stratigraphic analyses, combining biostratigraphical, lithological, modern 3D seismic- and geophysical data.

Paleontological analysis with main focus on micropaleontology, especially foraminifers, of 46 wells (more than 650 samples) of the northern Vienna Basin have been conducted and help to create a well resolved stratigraphic north – south cross-section of the Neogene units. Of particular interest were lower and middle Miocene (Ottangian, Karpatian, Badenian and Sarmatian) units. Hardly known and described were the patchy lower Badenian deposits and the much more complex, than previously expected, middle Badenian units. Foraminiferal analysis revealed about 50.000 specimens belonging to 228 species and an allocation to local ecozones, biostratigraphic zonations and ecological reconstructions were established.

Additionally, 50 samples have been analyzed for calcareous nannoplankton which showed extreme reworking throughout all successions.

Some samples displayed the underlying Mesozoic limestones and cutting samples of one well brought insights into the Cenozoic underlying Rhenodanubian Flysch units of the Vienna Basin This huge and stratigraphic long ranging set of data did not just reveal major sedimentation gaps during the formation of the modern pull-apart basin, but also provided the opportunity to create a framework for a modern sequence stratigraphy re-assessment of the Vienna Basin.

Furthermore, a formalization of widely used formations in literature will be established in later steps of this project.

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