

## CLAY MINERALOGY OF MIOCENE MUDSTONES OF THE MOLASSE ZONE, LOWER AUSTRIA

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The Lower Austrian Molasse Basin has been a subject of investigation for 150 years. Apart from surface rocks and outcrops, data from several drill cores from wells provide insight into the genesis and evolution of these Miocene deposits.

In a joint project of OMV and the University of Vienna which aims at a revision of the local stratigraphy, we propose a new zonation based on clay mineralogy, heavy minerals, carbonate content, XRD and XRF data, whole rock chemistry, calcareous nannoplankton and dinoflagellate cysts.

Based on stratigraphic signals, which we could correlate through the basin, we propose the name **Traisen Formation**, formerly Oncophora/Rzehakia Beds, for the uppermost Ottnangian sand-dominated sediments in the south, and **Zellerndorf Formation** for the pelitic sediments in the north. Sediments overlying this Carbonate Minimum Interval belong to the Karpatian **Laa Formation**. We propose the working term **Robulus Schlier** for the fine grained sediments below the calcite poor Traisen Formation. The lower boundary of the pelitic Schlier-succession is marked by the **Bioturbated Sandstones**. The informal term **Basal External Sands** is used for the underlying quartz and K-feldspar rich, but mica poor sands.

The results of the qualitative and quantitative evaluation of clay minerals in five wells correlate well with the proposed formation boundaries. In wells Schaubing and Streithofen 1 the sediments of the Robulus Schlier succession exhibit distinctly lower kaolinite contents than the overlying Traisen Formation. Very reduced smectite and increased kaolinite content distinguish the Basal External Sands from Robulus Schlier in wells Streithofen 1 and Altenmarkt im Thale 1. High Smectite peaks in the Zellerndorf Formation can be explained by volcanic ash input.