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Quaternary landscape formation in the loess plate of the Kremsfeld in the Danube region (Lower Austria)

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The study area is situated 5 km NE to the city of Krems in Lower Austria and belongs to the Danube loess region of the loess plate “Kremsfeld”. At the base of the loess

plate Tertiary rocks are present, overlain by gravels of the Guenz terrace (in the classical

sense, and by a sequence of loess and loess-like deposits. Actually, the trench

for the West Austrian gas pipeline (WAG Plus 600 – OMV) is under construction. In

the course of the works exposures of approx. 3 m depth have been excavated in the

research area. On the base of bone findings an interdisciplinary team investigated a

section of the trench close to Gobelsburg. The sequence of the profile can be described

as follows:

Below a Holocene Chernozem, calcareous loess, representing the last glacial period is

present. The loess is underlain by an interglacial redeposited paleosol, which belongs

at least to the Eemian period. Under the soil sediment a further loess layer is developed.

The sequence is continued vertically by two colluvial layers. Paleontological findings in form of bones are situated below these colluvial sediments. Starting from this point, the sedimentary sequence is changing from a terrestrial aeolian influence to a more sandy fluvial milieu. The base of the studied sequence is formed by a cemented carbonate horizon, which has been formed in a former floodplain or inside a channel bottom.

Field survey, paleontological results and sedimentary analyses allow the reconstruction of the landscape formation and environmental aspects during the sedimentation and soil forming phases.