Molenbeersel Formation

Unit name: Molenbeersel Formation

Hierarchical unit name: /

Type: Formation

Code: Mn

Author(s): Louwye Stephen & Deckers Jef

Alternative names: /

Origin of the name: Borehole near the village of Molenbeersel

Status: Formal

Date: 01/05/2022

How to refer: Louwye, S. & Deckers, J., 2023. The Molenbeersel Formation, 01/09/2023. National Commission for Stratigraphy Belgium. http://ncs.naturalsciences.be/lithostratigraphy/Molenbeersel-Formation

Characterizing description

The unit consists of brown-grey to grey-green, clay- and shell-bearing silt and fine-grained sand. The unit holds glauconite and lignite fragments. The central part of the formation is richest in glauconite and is also micaceous. Lignite fragments are distinctly present in the upper part.

Type section, type locality, type borehole, type CPT and/or type geophysical borehole

The type locality is Molenbeersel in the easternmost part of the Limburg province. The type section is between 369 m and 525 m depth in the Molenbeersel borehole (DOV kb18d49w-B225; GSB 049W0225). The gamma ray values in the Molenbeersel Formation interval increase from a basal gravel towards a maximum in the central part (Figure 0-1), which is richest in glauconite and shells (including Glycymeris) and is also micaceous. From this maximum, a decrease takes place in the gamma-ray values towards the top section (Figure 0-1), which coincides with an increase in lignite.

Description upper boundary

The Molenbeersel Formation is capped by the basal gravel of the Diest Formation. On borehole logs, this boundary coincides with an upwards increase in gamma-ray values (Figure 0-1).

Description lower boundary

The Molenbeersel Formation rests upon the Genk Member of the Bolderberg Formation. At the contact, some small gravel (up to 1 cm) was described. Compared to the underlying Genk Member, the unit is characterized by a markedly higher gamma-ray values (Figure 0-1).

Thickness

The Molenbeersel Formation has a thickness of c. 156 m in the Molenbeersel borehole (DOV kb18d49w-B225; GSB 049W0225; Figure 0-1).

Occurrence

The Molenbeersel Formation is restricted to the differentially subsiding Roer Valley Graben in the eastern part of the Limburg province.

Regional correlations

Deckers & Munsterman (2020) propose a correlation with the Vrijherenberg Sand of the Groote Heide Formation (Figure 0-1).

Age

No absolute or relative dating is available for the Molenbeersel Formation. Based on the geophysical correlation with the Vrijherenberg Sand, Deckers & Munsterman (2020) infer a Serravallian age (Figure 0-1).

Dataset

Data in the LIS are part of the DOV-Neogene data collection

Subset of the lower and middle Miocene: https://www.dov.vlaanderen.be/data/opdracht/2020-022192

Name	GSB name	DOV name	GSB Collections URL	DOV URL
Molenbeersel borehole	049W0225	kb18d49w-B225	http://collections.naturalsciences.be/ssh-geology-archives/arch/049w/049w0225.txt	https://www.dov.vlaanderen.be/data/boring/1985-082429

References

Deckers, J. & Munsterman, D., 2020. Middle Miocene depositional evolution of the central Roer Valley Rift System. Geological Journal, 55, 6188-6197. https://doi.org/10.1002/gj.3799

Louwye, S., Deckers, J., Verhaegen, J., Adriaens, R. & Vandenberghe N., 2020. A review of the lower and middle Miocene of northern Belgium. Geologica Belgica, 23/3-4, 137-156. https://doi.org/10.20341/gb.2020.010

Annexes

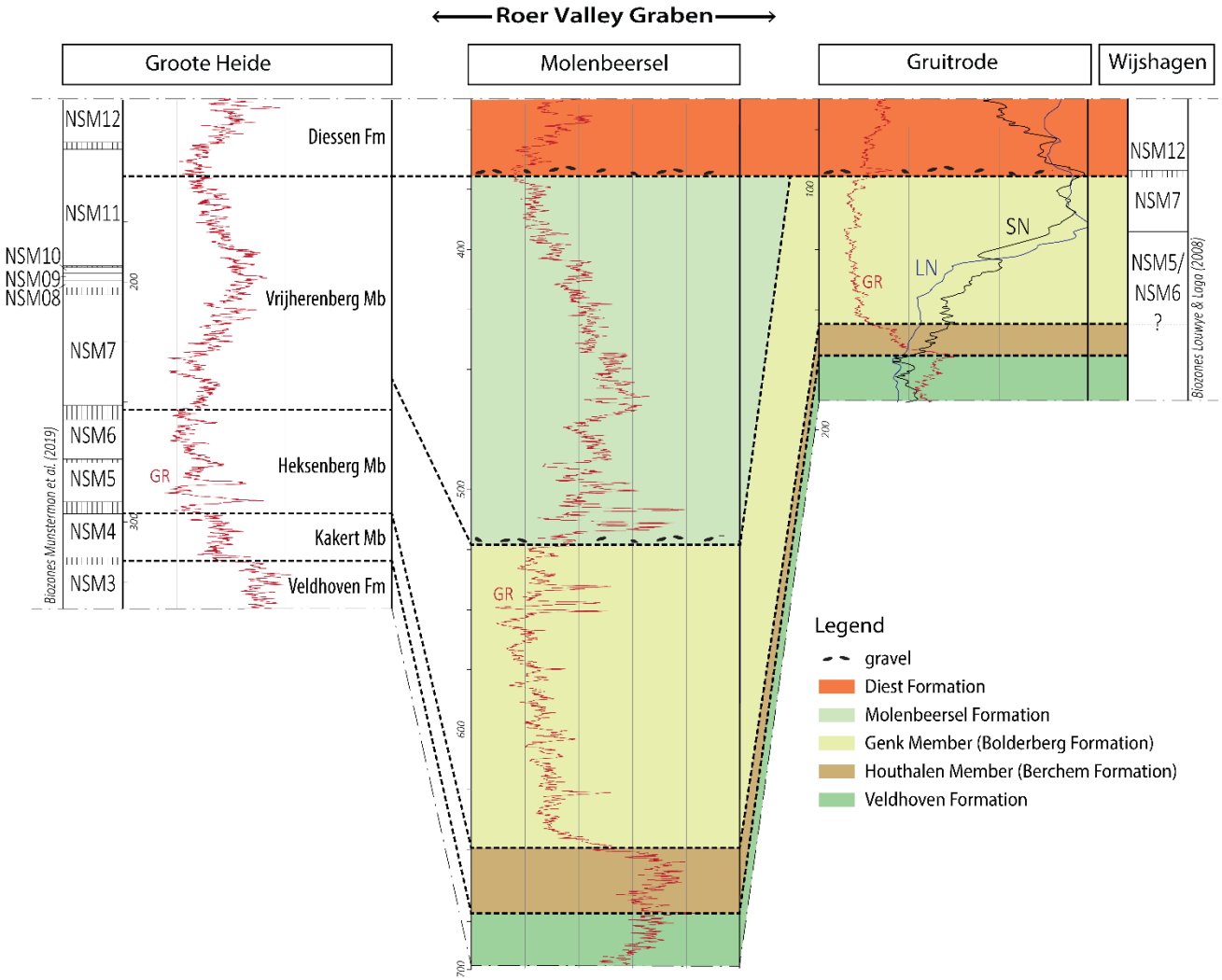

Figure 0-1. The Molenbeersel Formation in the Molenbeersel borehole in the Roer Valley Graben and its correlation with the Vrijherenberg Member of the Groote Heide Formation in the Groote Heide borehole in the Netherlands. Also the correlation with the Gruitrode/Wijshagen boreholes in the Campine area, where the Molenbeersel Formation is absent, is shown. The panel is flattened on the base of the Diest Formation. See Deckers & Munsterman (2020) for further information.