

Olen Gravel Bed (Hallaar Member)

Unit name: Olen Gravel Bed

Hierarchical unit name: Hallaar Member

Type: Bed

Code: KIOI

Author(s): Verhaegen Jasper & Vandenberghe Noël

Alternative names: formerly part of the at the time not yet subdivided Kasterlee Formation sensu De Meuter and Laga (1976) and Laga et al. (2001).

Origin of the name: This gravel bed was first described in the 1972 temporary outcrop for construction of the Olen sluice along the Albert Canal (Louwye et al., 2007)

Status: Formal

Date: 01/05/2022

How to refer: Verhaegen, J. & Vandenberghe, N., 2023. The Olen Gravel Bed, 01/09/2023. National Commission for Stratigraphy Belgium. <http://ncs.naturalsciences.be/lithostratigraphy/Olen-Gravel-Bed>

Characterizing description

The Olen Gravel Bed is a disperse gravel which occurs at the base of the Kasterlee Formation in the type area of the Hallaar Member, from Olen down to the hills of Heist-op-den-Berg and Beerzel. The gravel was first observed during the construction works for an additional sluice on the Albert Canal at Olen, in 1972. It was briefly mentioned in Louwye et al. (2007) as “the presence of coarser quartz grains, occasional round stones and even a silicified shell fragment”. It was later also identified to the south in the Beerzel and Heist-op-den-Berg Hills and described in detail by Verhaegen et al. (2014). The gravel occurs diffusely in the sediment of the Hallaar Member and can be best recognized by sieving a sample over a 1 mm screen. Flattened and elongated flint pebbles with a length up to 4 cm occur. The pebbles have a characteristic spotted patina. Many coarse (> 1 mm) quartz grains occur, which are mostly angular but larger rounded grains are present as well. A third component are white powdery fragments of weathered silex, which are markedly larger (> 1 cm) in the Olen outcrop. Lastly, iron crust fragments up to 1.5 cm with rounded edges occur as well.

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

The proposed type section of the lower three members of the Kasterlee Formation, including the Hallaar Member and Olen Gravel Bed, is the sunken lane atop the hill of Heist-op-den-Berg (DOV TO-20140919 and TO-20190617). The type section is described in detail in Verhaegen et al. (2014) and Verhaegen et al. (2020).

Description upper boundary

The Olen Gravel Bed occurs diffusely in the lower part of the Hallaar Member and gradually disappears towards the top of this member.

Description lower boundary

The Olen Gravel Bed occurs diffusely in the lower part of the Hallaar Member and is underlain by the coarse green glauconite rich sand of the Diest Formation.

Thickness

The Olen Gravel Bed occurs diffusely in the lower part of the Hallaar Member, which has a thickness of about 3 m in the type area, and gradually disappears towards the top of this member.

Occurrence

The Olen Gravel Bed occurs in the type area of the Hallaar Member, which is located in the southern reach of the Kasterlee Formation occurrence area, from Olen to the hills of Heist-op-den-Berg and Beerzel. North of this area, a distinct gravel is no longer present yet the boundary between the Kasterlee Formation and Diest Formation may still be delineated by the occurrence of a coarse (> 500 µm) fraction of quartz grains.

Regional correlations

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Age

No age data are available for the Hallaar Member which contains the Olen Gravel Bed, yet it is underlain by the late Tortonian to Messinian Campine Diest Sand and overlain by the Heist-op-den-Berg Member in which dinoflagellate cyst biozone DN10 of late Tortonian to Messinian Miocene age was identified.

Dataset

Data in the LIS are part of the [DOV-Neogene data collection](#), including links to the GSB-collection data sheets.

Subset of the Kasterlee Formation: <https://www.dov.vlaanderen.be/data/opdracht/2020-021580>

Subset of the Heist-op-den-Berg type section: <https://www.dov.vlaanderen.be/data/opdracht/2020-022424>

References

De Meuter, F. & Laga, P., 1976. Lithostratigraphy and biostratigraphy based on benthonic Foraminifera of the Neogene deposits of northern Belgium. *Bulletin van de Belgische Vereniging voor Geologie*, 85/4, 133–152.

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Laga, P., Louwye, S. & Geets, S., 2001. Paleogene and Neogene lithostratigraphic units (Belgium). In Bultynck, P. & Dejonghe, L., (eds), *Guide to a revised lithostratigraphic scale of Belgium*. *Geologica Belgica*, 4/1-2, 135–152. <https://doi.org/10.20341/gb.2014.050>

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