

01.20 Geological Map 1 : 25,000 (Historical GK25) (Edition 2017)

Overview

For the North German Plain made up of loose rock, and thus also for the entire State of Brandenburg including Berlin, the Geological Map at a scale of 1 : 25,000 (GK25) is a map of the geological (rock) formations exposed at the surface with a depth of representation of the geological conditions up to 2 m below the surface. It is the basic map for all geological issues and all derived maps that build on it (LBGR 2017).

From 1874 to 1939, the Prussian Geological State Institute carried out the first complete geological survey of the area of the present State of Brandenburg, including the sheets of the GK25 that relate to Berlin. 230 sheets were recorded geologically, and until around 1924 geologically-agronomically, and were published beginning in 1875 in installments of 3 to 9 sheets each. The area of the present State of Berlin was mapped in the years 1875 to 1883. Further revisions, usually the second edition, appeared in the years 1899 to 1937.

This set of maps, some of which are more than 100 years old, is still highly significant for use in the areas of geoscientific analysis as well as nature and soil protection. This is due on the one hand to the fact that a current set of maps is not available at a scale of 1 : 25,000. While the Geological Outline of Berlin at a scale of 1 : 50,000 is more up to date, it does not nearly measure up to the Historical GK25 with respect to detail (Limberg 1995, Lippstreu 2003).

Moreover, as the region was not very urbanised at the time, the maps allow structures and sites – mostly Holocene, i.e. postglacial – to be read off that were removed in the course of the subsequent urban development. Pools and wetlands from bog and half-bog formations or dunes were reshaped, cleared or filled. The information from the GK25 provides indications of structures that no longer exist, and this knowledge might be of interest for future projects of rewetting peatlands, restoring pools or renaturalising soils influenced by groundwater. Relationships in the landscape become apparent that in some cases have been invisible in the cityscape for decades.

Statistical Base

The analogue sheets of the Prussian geological map in their respective last edition formed the basis. The scanned originals are also available in digital form on the [Internet](#).

3344 Marwitz I Behrendt/Dulk (1878) II Schmidt (1938)	3345 Henningsdorf I Behrendt/Lauffer (1880) II Keilhack (1921)	3346 Schönerlinde I Lauffer/Keilhack (1882) II Schmierer (1937)	3347 Bernau I Lauffer (1885)	3348 Werneuchen I Wahnschaffe (1882)
3444 Rohrbeck I Behrendt (1878)	3445 Spandow/ Charlottenburg I Behrendt (1880) II Keilhack (1910)	3446 Berlin/ Berlin-Nord I Behrendt (1882) II Dietz (1937)	3447 Friedrichsfelde I Behrendt/Wahnschaffe/ Keilhack (1882) II Dietz (1937)	3448 Altlandsberg I Wahnschaffe (1882)
3544 Fahrland I Behrendt/Lauffer (1882)	3545 Teltow I Behrendt (1878) II Keilhack (1910)	3546 Tempelhof/ Berlin-Süd I Behrendt (1882) II Dietz (1932)	3547 Köpenick I Wahnschaffe (1883) II Dietz/Kaunhoven (1937)	3548 Rüdersdorf I Wahnschaffe (1882) II Zimmermann (1899) III Zimmermann (1913) IV Keilhack (1922)
3644 Potsdam I Behrendt/Lauffer (1882)	3645 Groß-Beeren I Behrendt/Lauffer (1882)	3646 Lichtenrade I Behrendt/Dulk (1878)	3647 Königs- Wusterhausen I Behrendt/Lauffer (1878)	3648 Alt-Hartmannsdorf I Dulk (1883)

Fig. 1: Sheet overview of the Geological Map 1 : 25,000 for the Berlin area with sheet number, sheet name, author, edition and year of publication

Methodology

Supported with ERDF funds the set of high-resolution maps was converted into digital form from 2009 till 2013 on the initiative of the Brandenburg State Office for Mining, Geology and Raw Materials (*Landesamt für Bergbau, Geologie und Rohstoffe Brandenburg, LBGR*) in order to make it available for modern working methods.

The geodata were taken over for a section of Berlin and its surroundings, and the presentation was adapted to the Berlin requirements. Berlin and its surroundings are represented in 15 aggregated legend groups and colours. For this purpose, some of the 124 legend units in the area were grouped differently by colour, and the colouring was partly changed with respect to that of the Brandenburg State Office for Mining, Geology and Raw Materials (LBGR).

Map Description

The geological structure of Berlin is described in the map Geological Outline ([Environmental Atlas Map 01.17](#)). It includes detailed descriptions of the geological and geomorphological situation.

For the detailed descriptions of the individual historical geological map sheets, please refer to the explanatory volumes of the respective maps.

For the analysis of the present Historical GK25, it is to be noted that the map represents the state of knowledge of the respective year of publication and thus does not always reflect the current state of geological exploration and mapping. This also applies to the geological classification and nomenclature, which is now partly obsolete.

Moreover, note that the map reflects more differentiated structures than the aggregated colours would make it appear. The large number of legend units did not allow all units to be distinguished by colour. All differentiated legend units were preserved in the map and can be displayed using the data display (cf. [Table 1 \(xlsx\)](#)).

Tab. 1: Legend units of the GK25 in the Berlin section

Literature

- [1] **Assmann, P. 1961:**
Geologische Karte von Berlin [Geological map of Berlin] 1 : 10,000, Sheet 425. Published by: The Senator for Construction and Housing; Berlin.
- [2] **Berendt, G. & Dames, W. 1885:**
Geologische Übersichtskarte der Umgegend von Berlin [Geological overview map of the surroundings of Berlin] 1 : 100,000. Published by: Prussian Geological State Institute; Berlin.
- [3] **LBGR (Landesamt für Bergbau, Geologie und Rohstoffe Brandenburg [Brandenburg State Office for Mining, Geology and Raw Materials]) 2017:**
GK25 Geological Map 1 : 25,000.
Internet:
<http://www.lbgr.brandenburg.de/sixcms/detail.php/622447>
(accessed on: June 22, 2017)
- [4] **Limberg A. 1995:**
State of the geological land survey in Berlin with results of the geological maps last published, 1 : 10,000, Sheet 425 and 426. Brandenburgische Geowiss. Beitr., 2, 1, pp. 39-49, Kleinmachnow.
Download:
https://www.geobasis-bb.de/geodaten/lbgr/pdf/1_95_Limberg_39-49.pdf
(accessed on: June 22, 2017)
- [5] **Lippstreu, L. 2003:**
Die geologische Karte von Preußen im Maßstab 1 : 25 000 jetzt auch auf CD. [The geological map of Prussia at a scale of 1 : 25,000 now also available on CD.]
Download:
https://www.geobasis-bb.de/geodaten/lbgr/pdf/1-2_03_Landesamt_Lippstreu_195-197.pdf
(accessed on: June 22, 2017)
- [6] **Wolff, W. 1925:**
Geologische Übersichtskarte der Umgegend von Berlin [Geological overview map of the surroundings of Berlin] 1 : 100,000. Published by: Prussian Geological State Institute; Berlin.
- [7] **Stackebrandt, W. & Franke, D. (eds.):**
Geologie von Brandenburg [Geology of Brandenburg]. - Schweizerbart, 805 pp., Stuttgart.
- [8] **Limberg, A. & Sonntag, A.:**
Geologische Übersichtskarte 1 : 100.000 mit Beiheft [Geological overview map 1 : 100,000 with booklet]. – 30 pp., SenStadtUm in cooperation with the Brandenburg State Office for Mining, Geology and Raw Materials and the Brandenburg State Office of Surveying and Geo-Basic Data Information.

Maps

- [9] **SenStadtUm (Senate Department for Urban Development and the Environment Berlin) (ed.) 2011:**
Geoportal Berlin / Geological Map 1874-1937.
Internet:
http://fbinter.stadt-berlin.de/fb/index.jsp?loginkey=zoomStart&mapId=geo_18-19@senstadt
(accessed on: June 22, 2017)



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