Provincie Noord-Brabant

Geological models in practice

Erik Heskes | Province of Noord-Brabant | 10-04-2025

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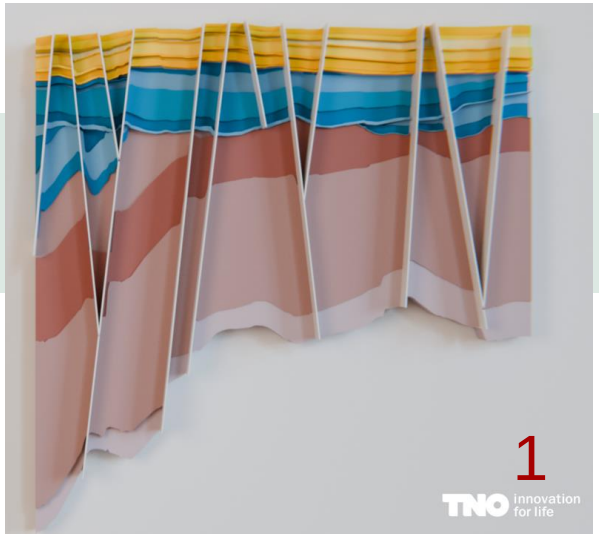
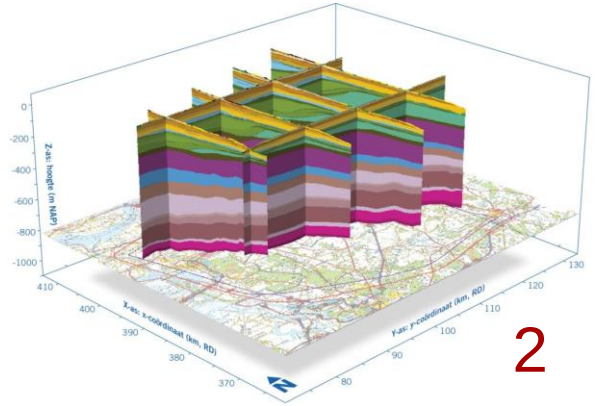
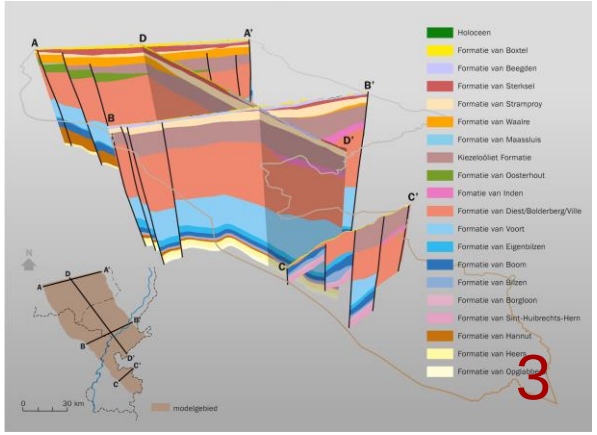
H3O-Models in the border region of the southern part of The Netherlands (NL / B / D)







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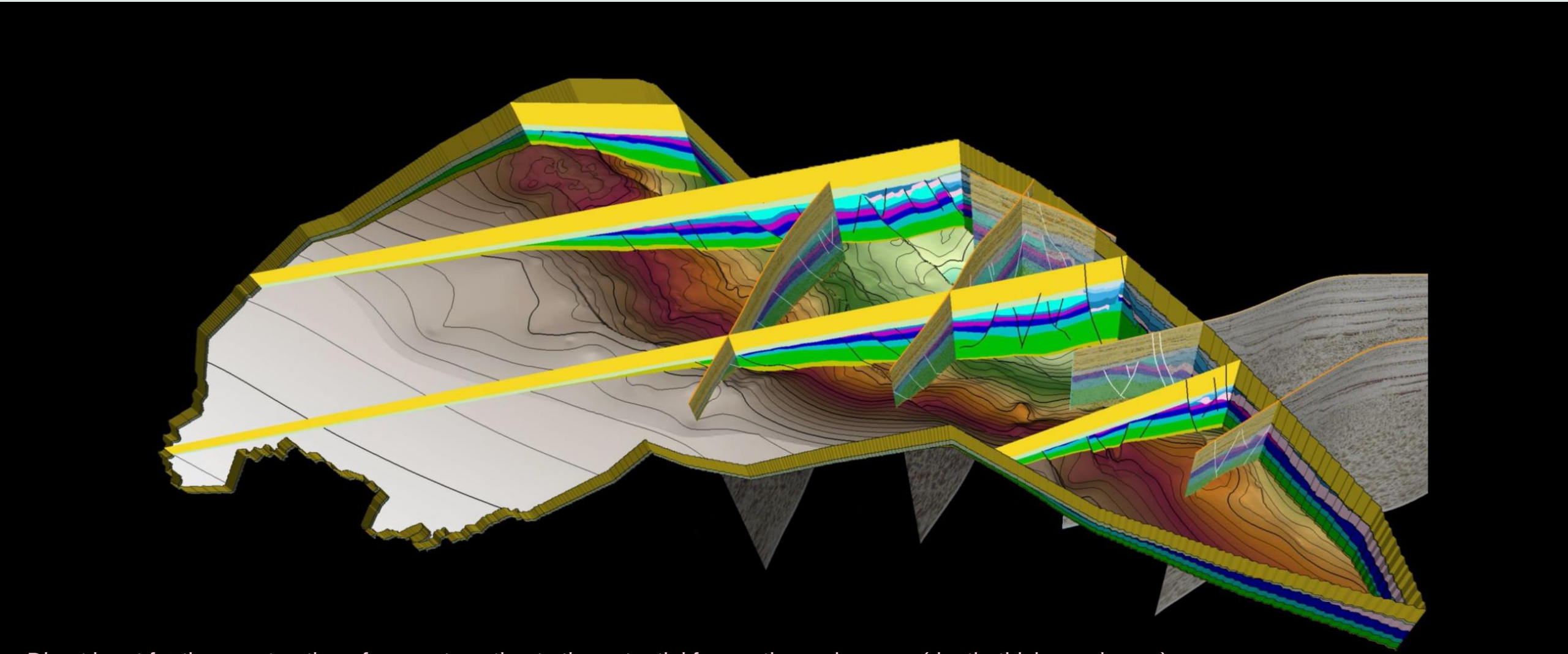
H3O Deep South NL (2021-2024)



Direct input for the construction of a map to estimate the potential for geothermal energy (depth, thickness layers)

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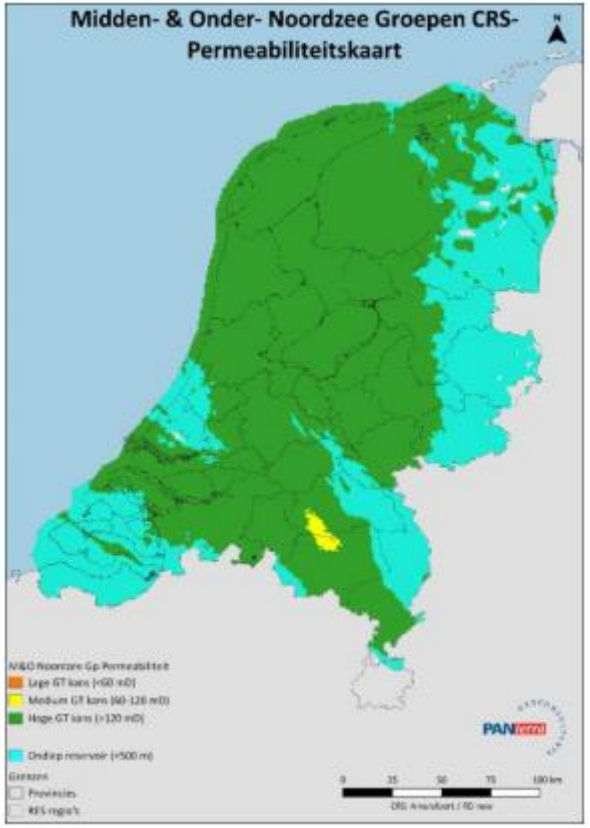
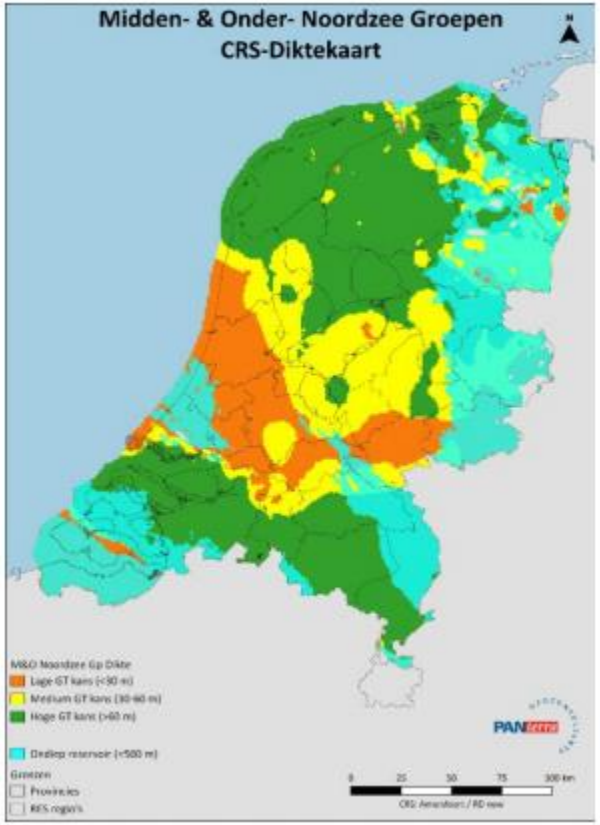
Example: Potential for Shallow Geothermal Purposes (WARM)

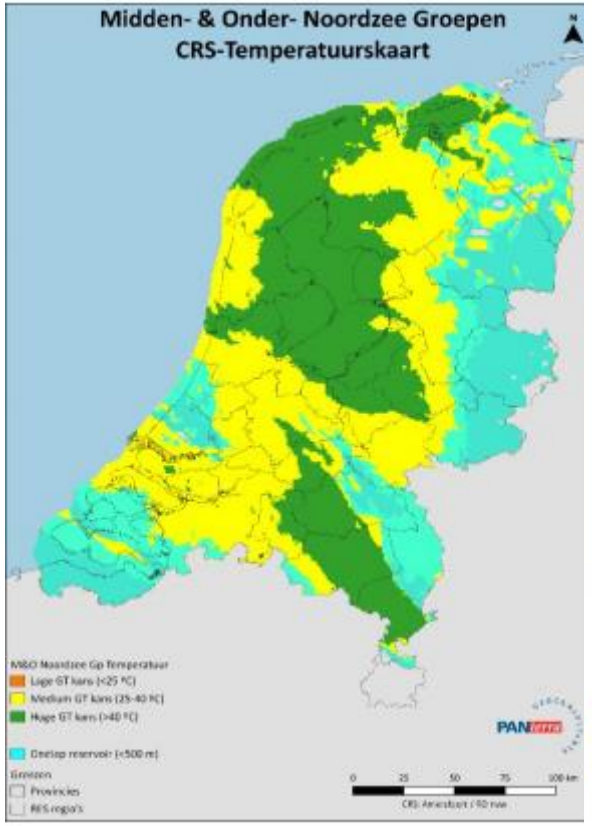
Permeability ✓



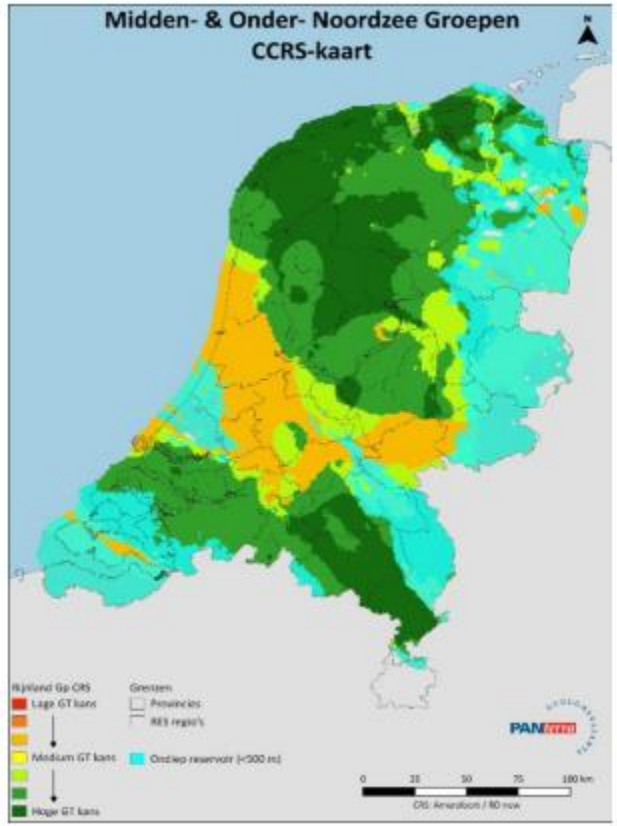
Thickness ✓



Temperature ✓✓



Potential for geothermal use ✓



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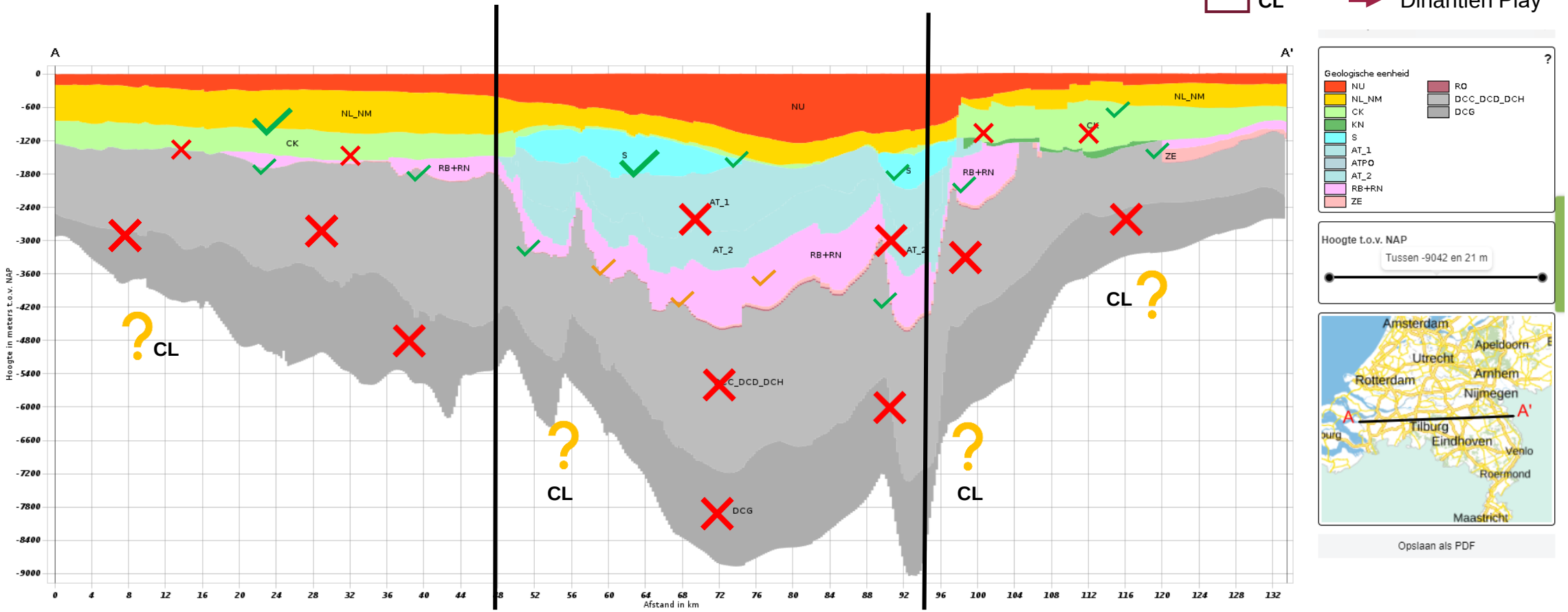
Potential of Formations for Geothermic use

NU
NL_NM → “Paleogeen Play”
CK
KN → “Onder Krijt Play”
S → “Jura Play”
AT_1
ATPO
AT_2
RB+RN → “Trias Play”
ZE
RO → “Rodliegend Play”
DCC_DCD_DCH
DCG
CL → “Dinantien Play”



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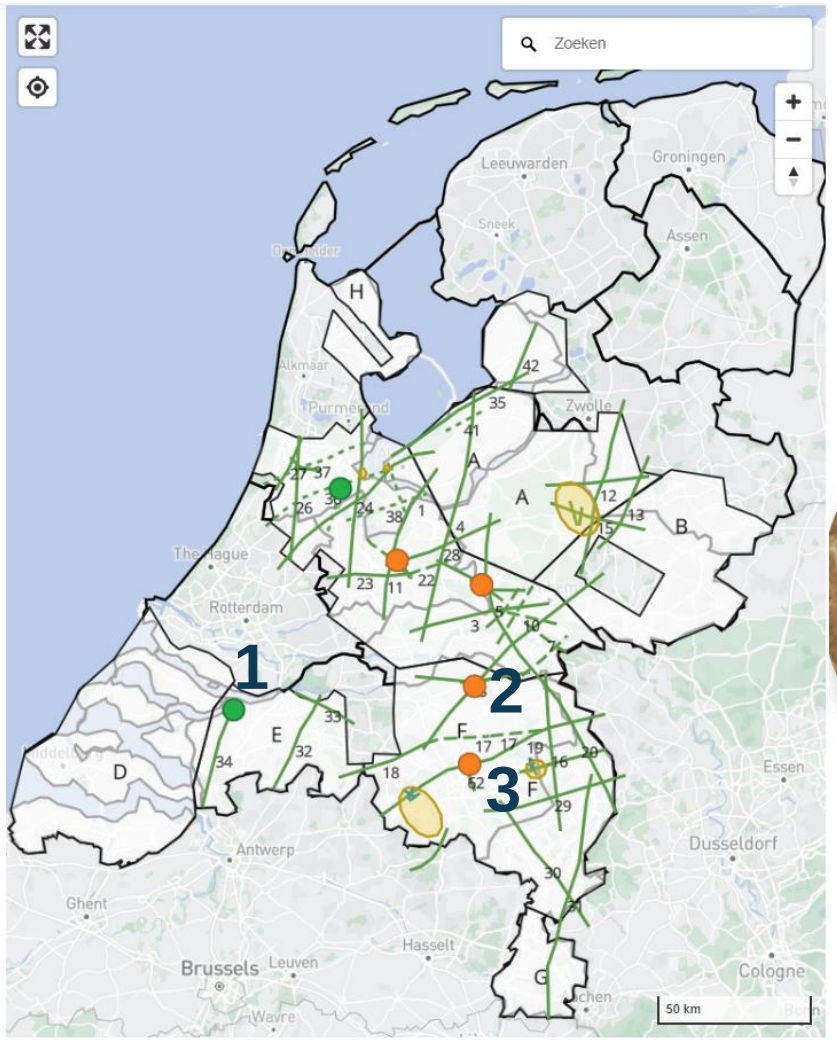
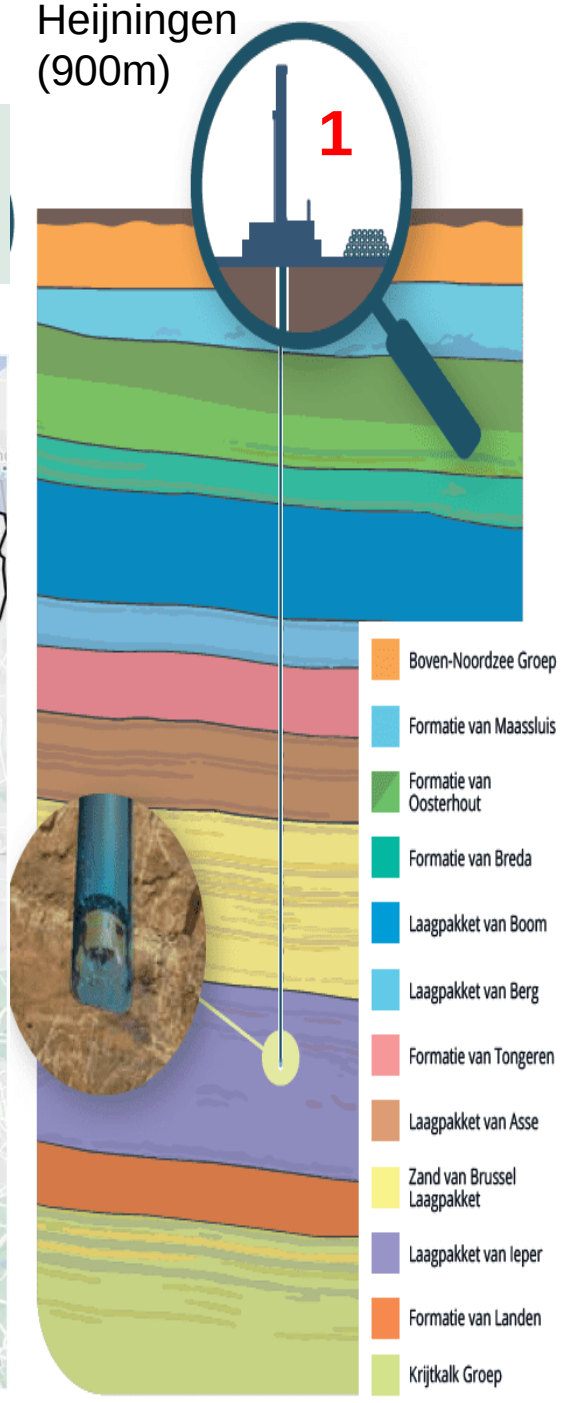
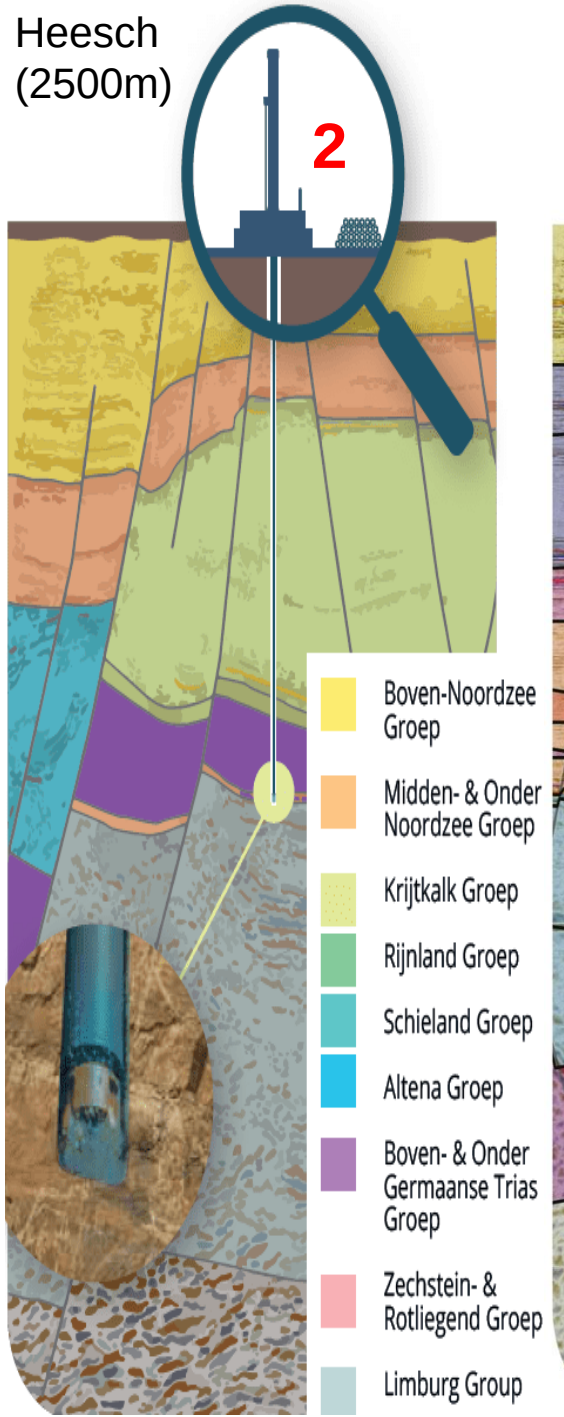
Scientific drillings for geothermal purposes



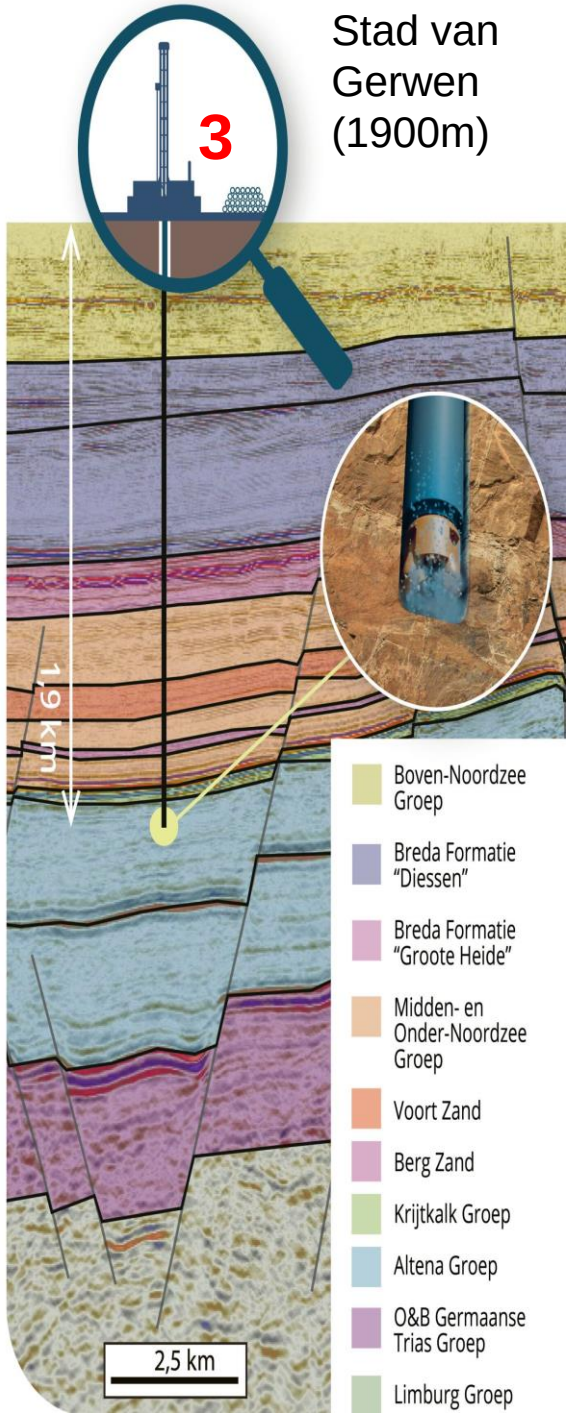
Heijningen (900m)



Heesch (2500m)



Stad van Gerwen (1900m)



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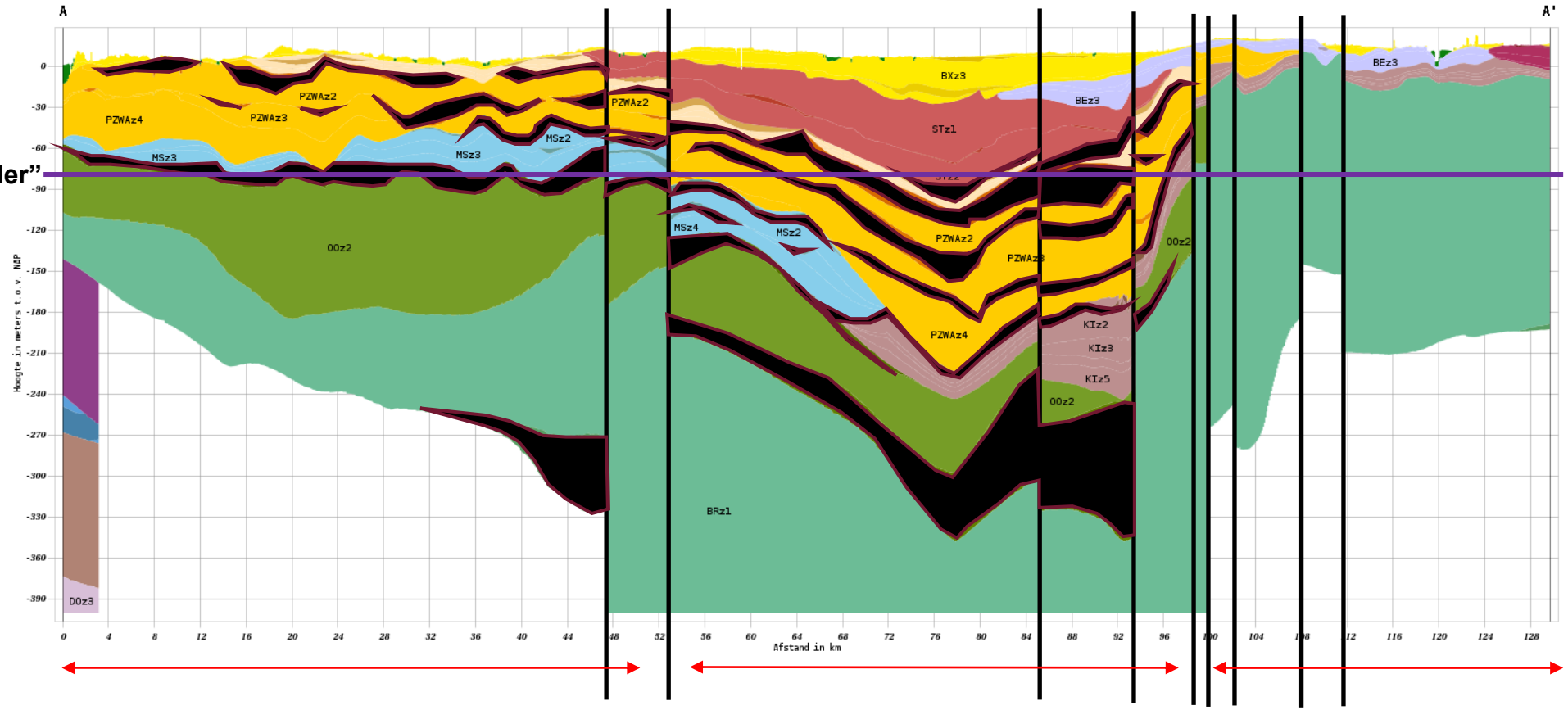
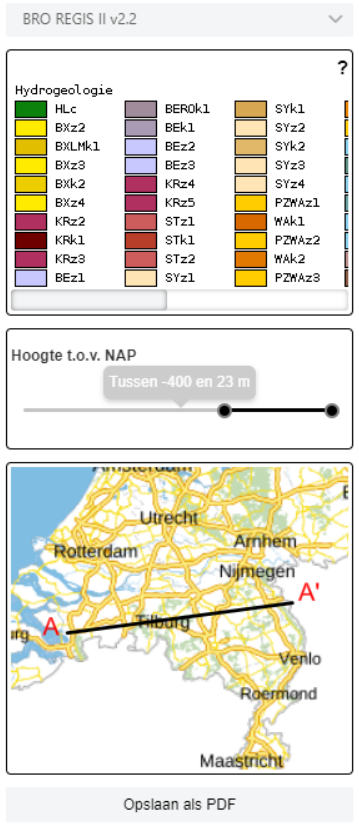
Cross section W-E: REGIS (Geohydrological Model) – Southern part NL

“80m border”





WEST-BRABANT | **ROER VALLEY GRABEN** | **PEELHORST / VENLO GRABEN**

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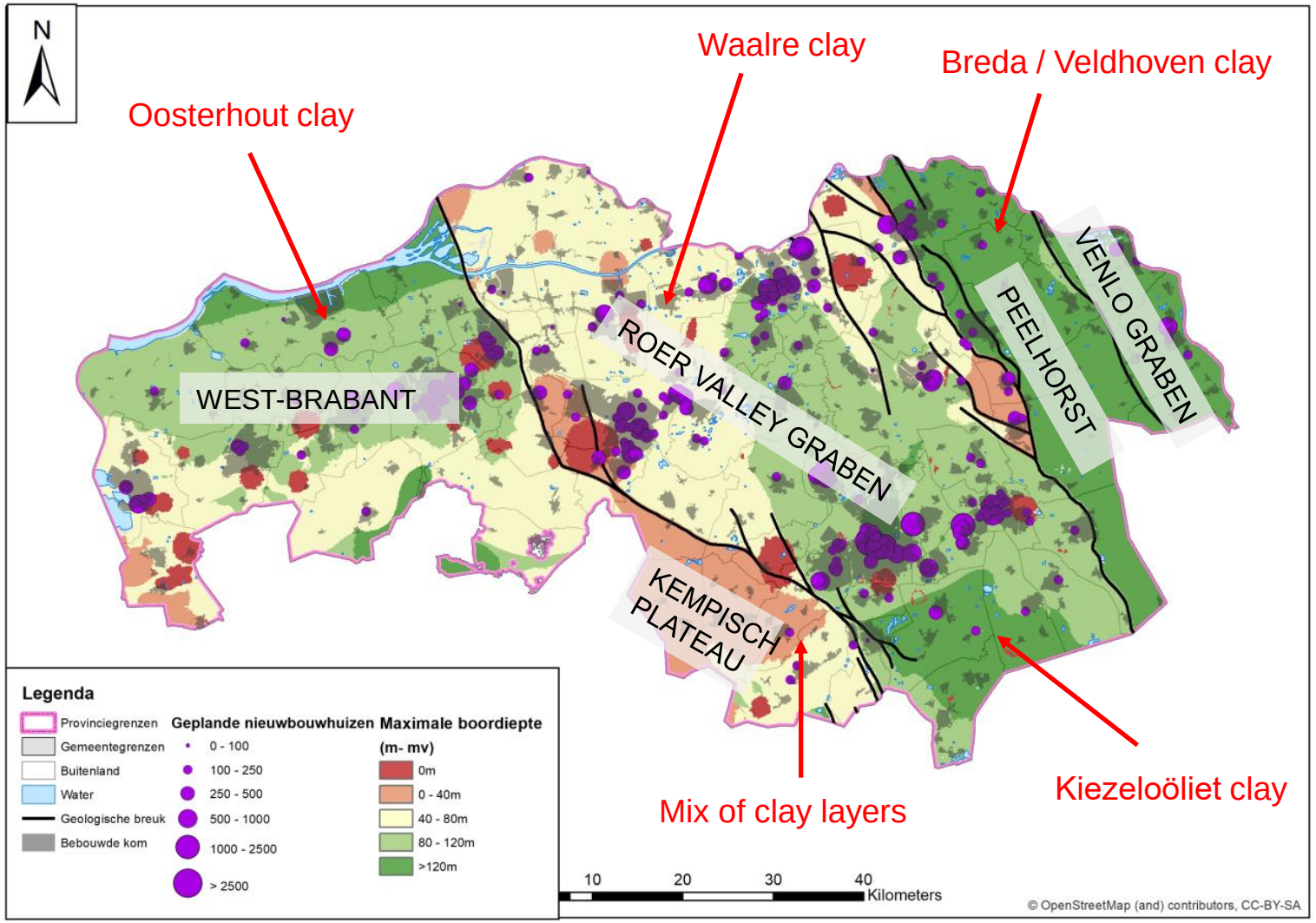
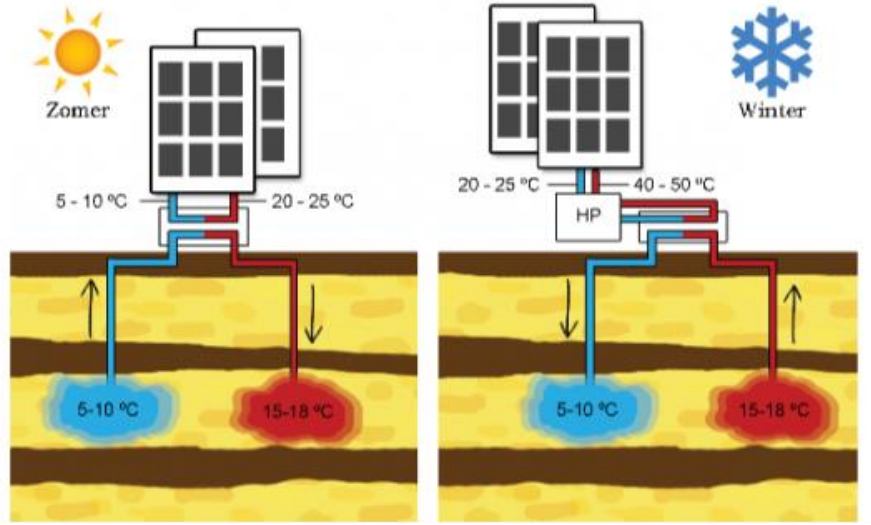
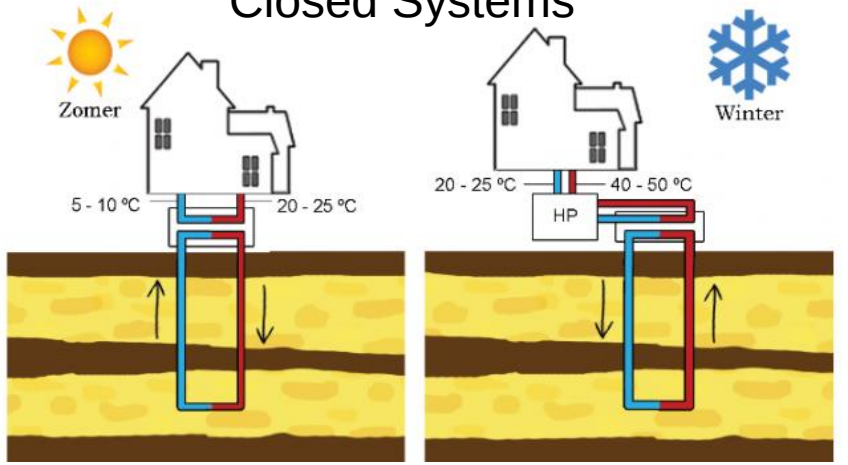
Depth Restriction Map - Construcion of Soil Energy Systems



Open Systems



Closed Systems



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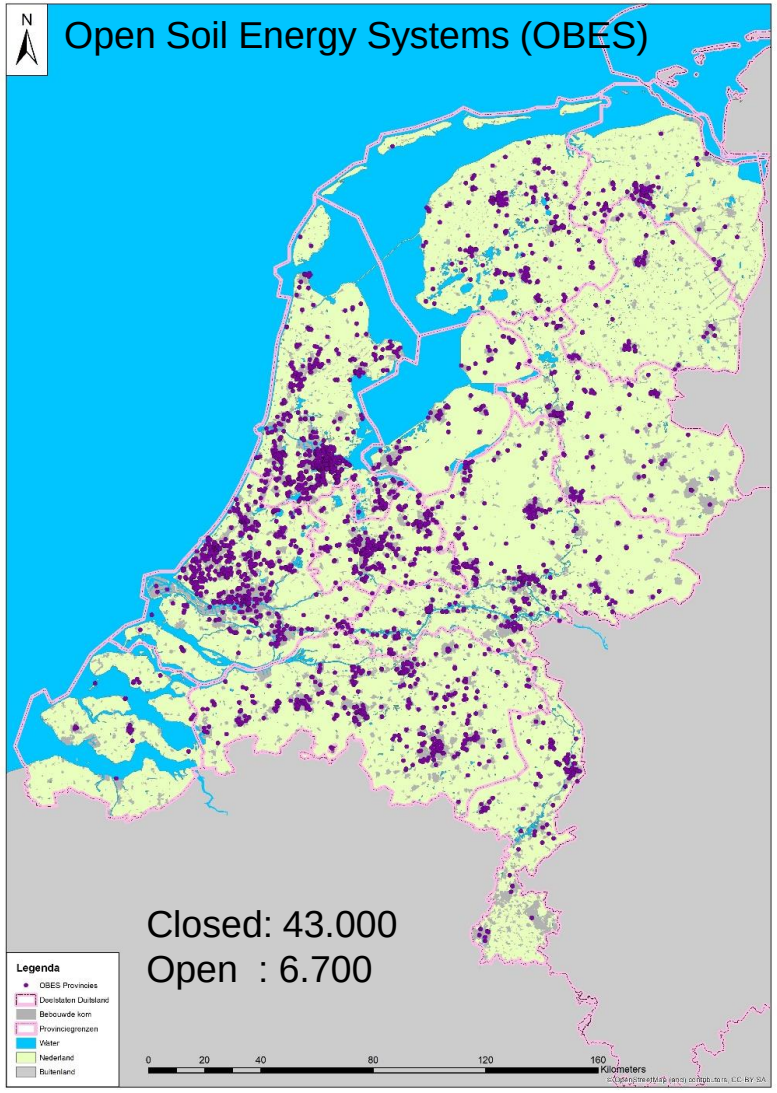
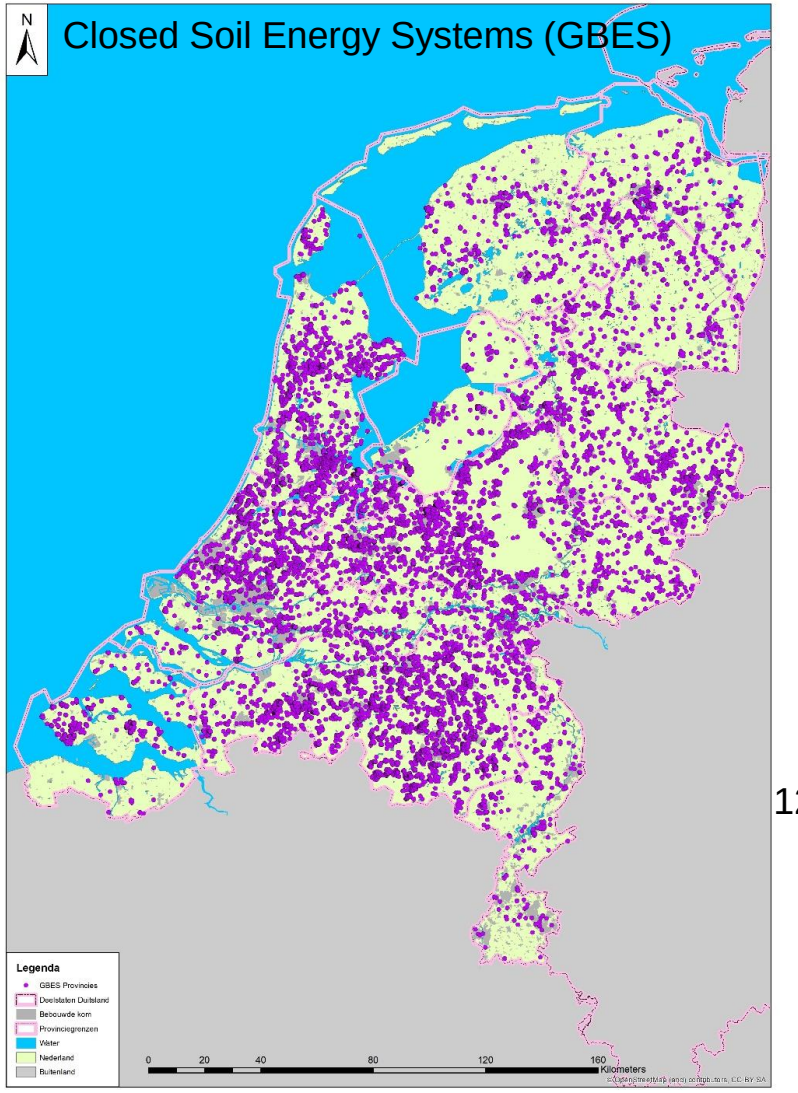
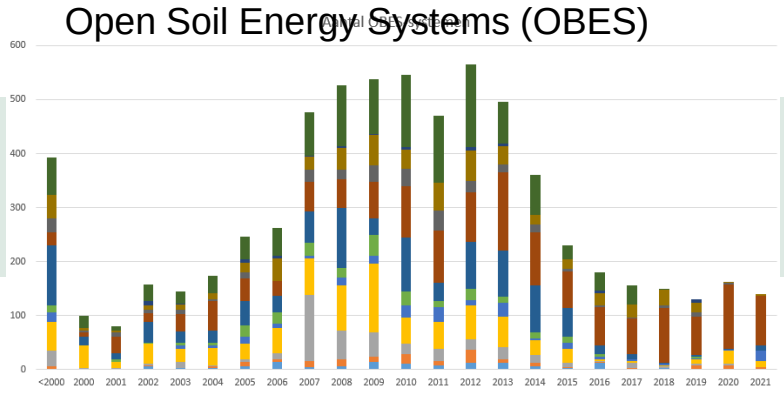
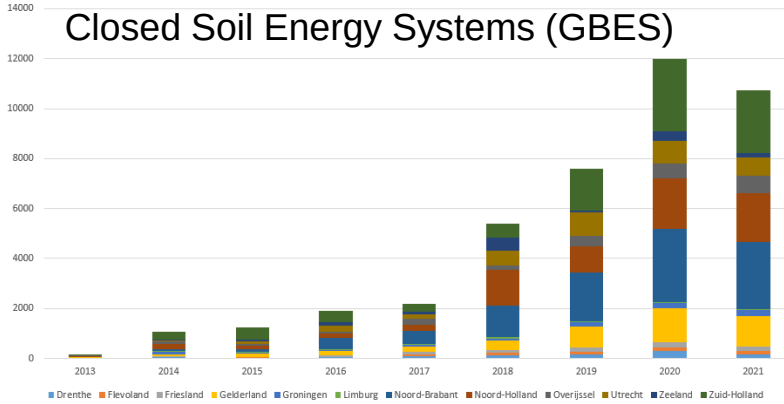
Soil Energy Systems (Closed and Open)

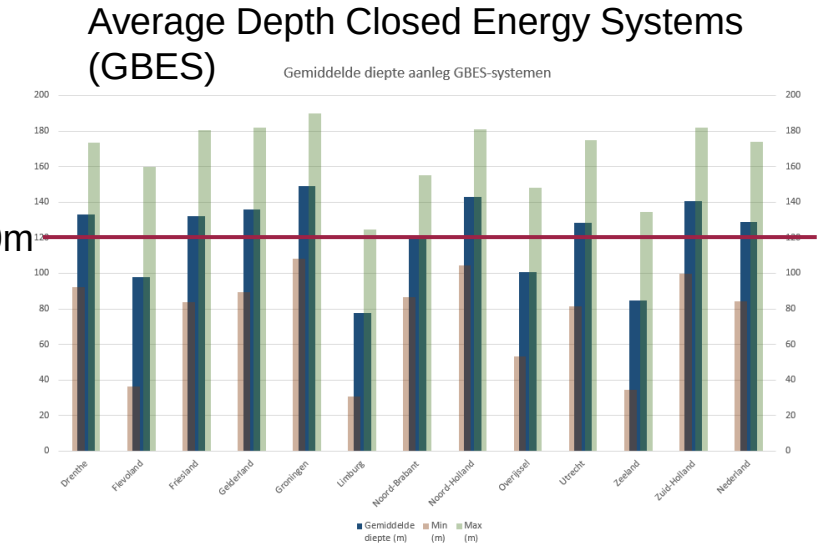




120m







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Use of geological models

Best spots for (heat) storage or the extraction of drinking water / infiltration

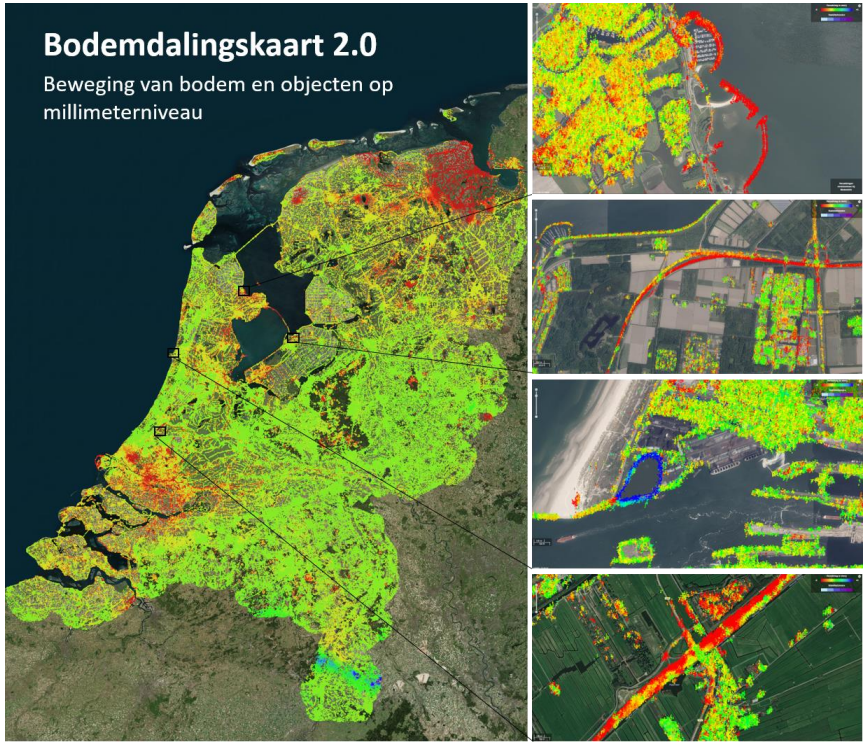
Estimate the potential for geothermal energy

In the planning phase for the construction of tunnels and roads

Shallow geological models (GeoTOP) for spatial planning and civil engineering

Potential threats (fault zones)

Potential threats (subsidence)



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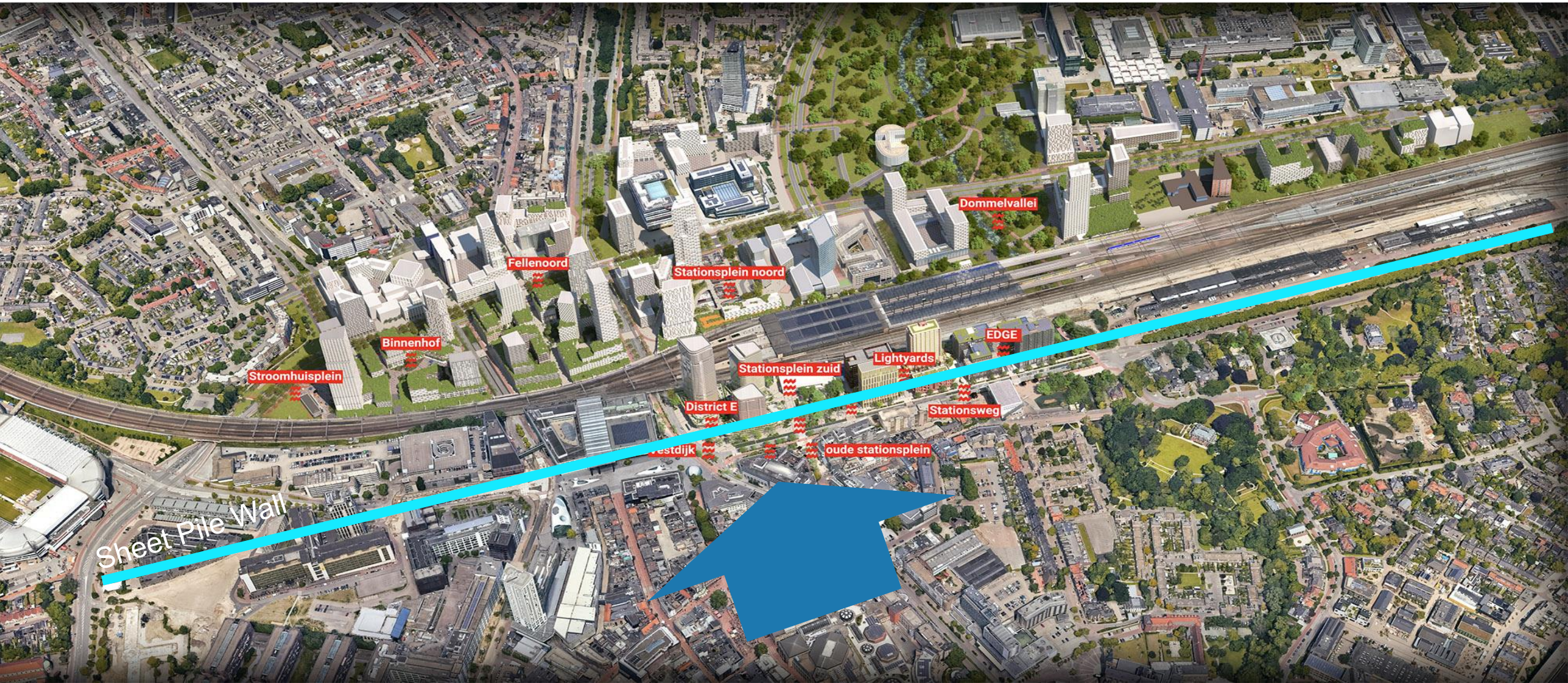
Spatial planning – KnoopXL Eindhoven (NL) – City center



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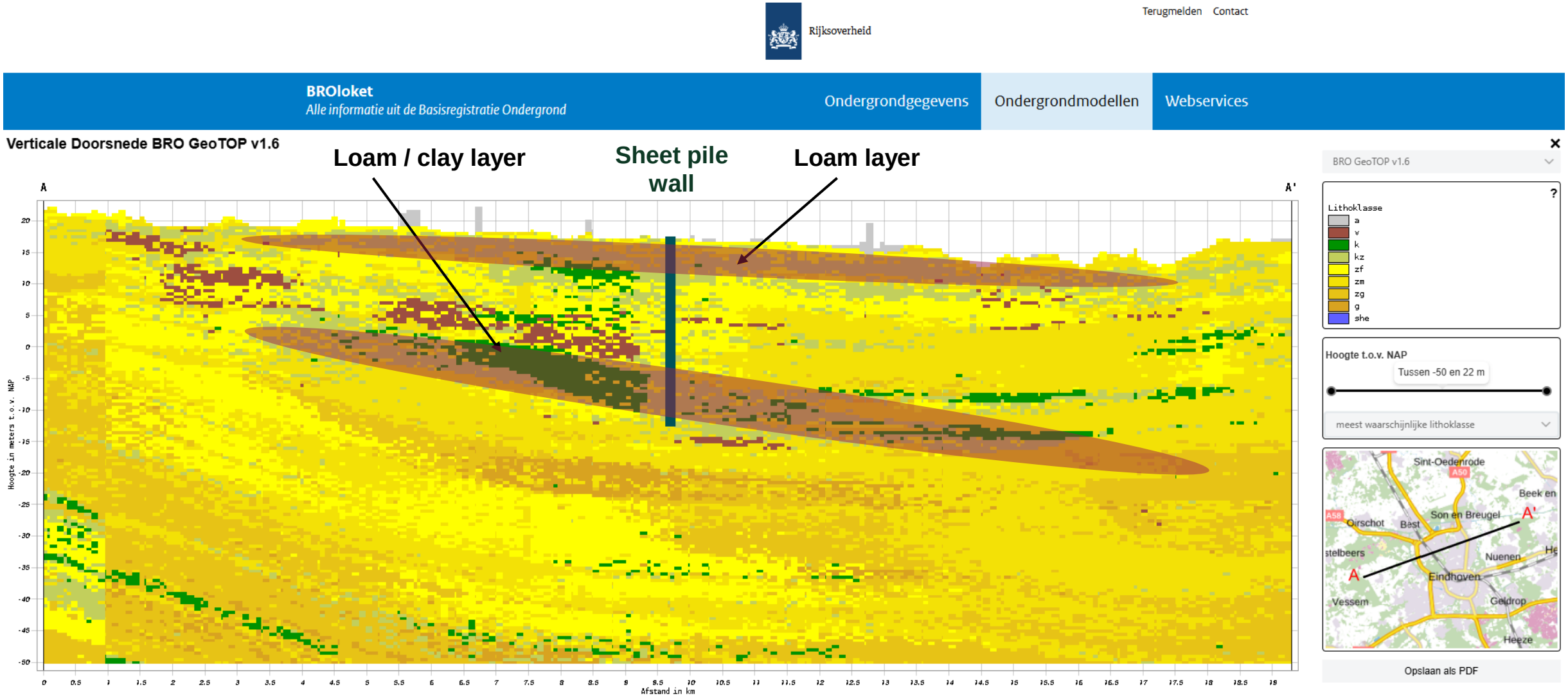
Lithology near Eindhoven (GEOTOP)



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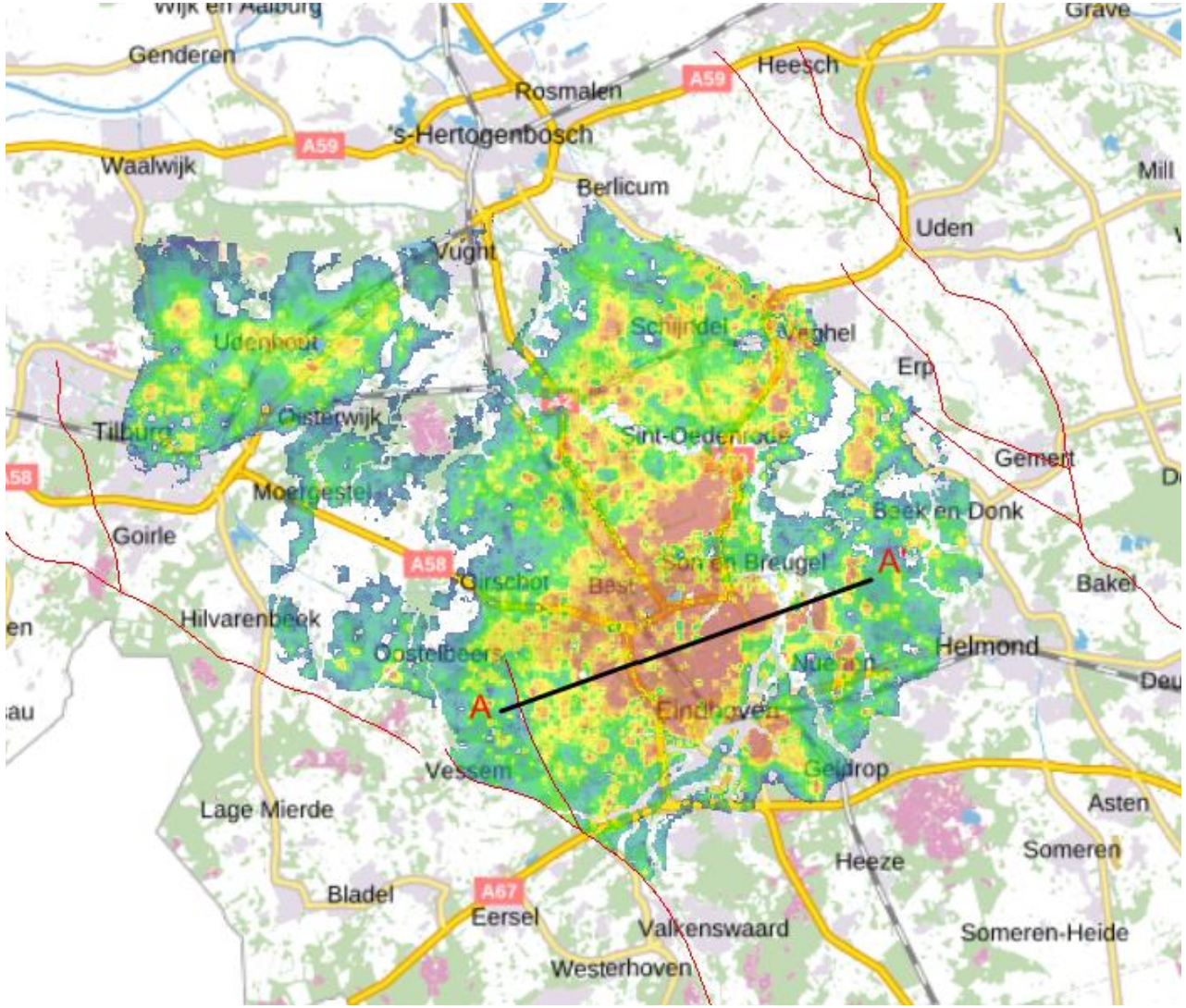
Thickness loamy layer - region Eindhoven (Liempde)



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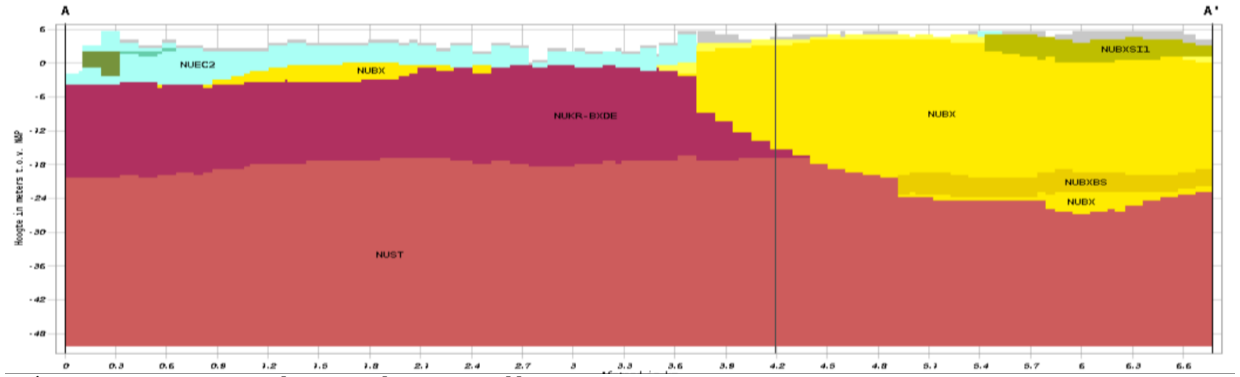
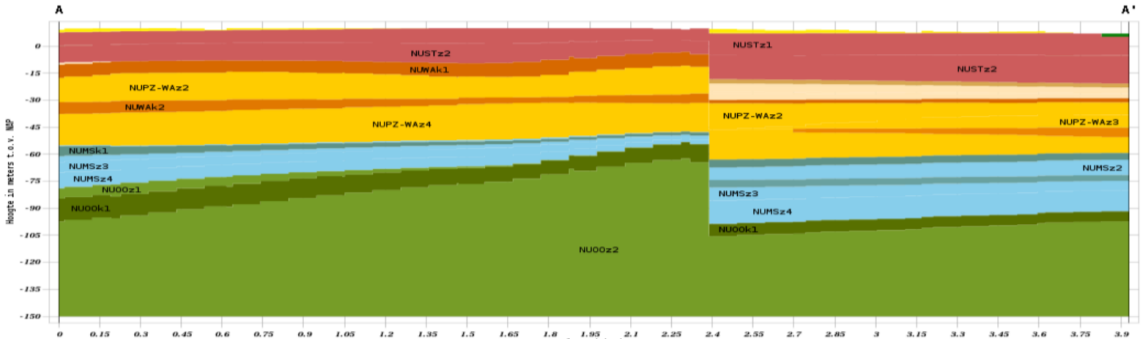
Spatial planning and civil engineering (infrastructure)



‘s-Hertogenbosch – rail zone

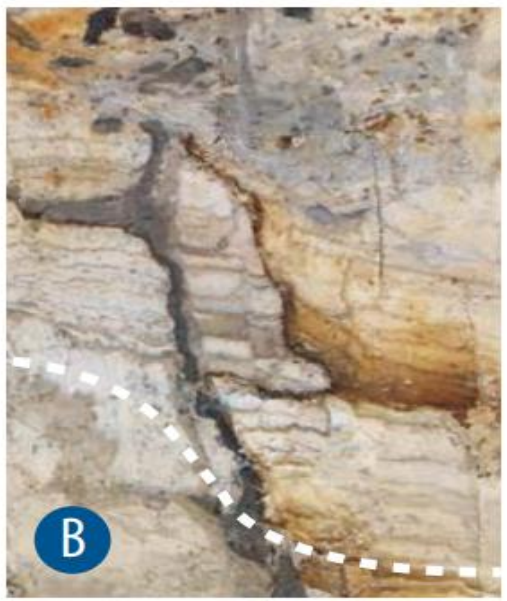


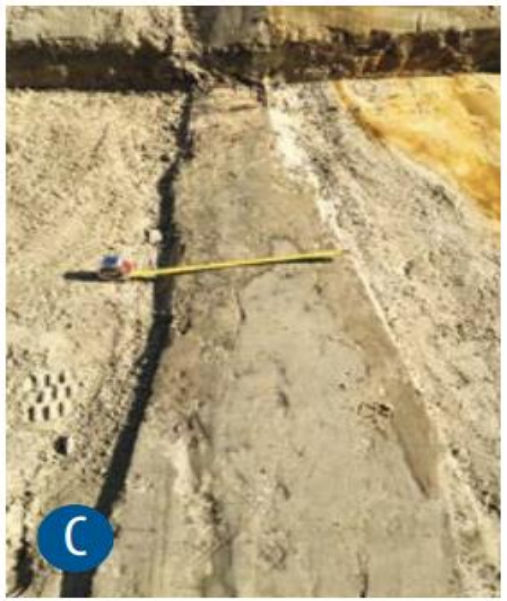
Rijen – Railway crossing near a major fault

Peelhorst
(hoge kant)

Peelrandbreuk
("verticale barrière")

Centrale Slenk
(lage kant)





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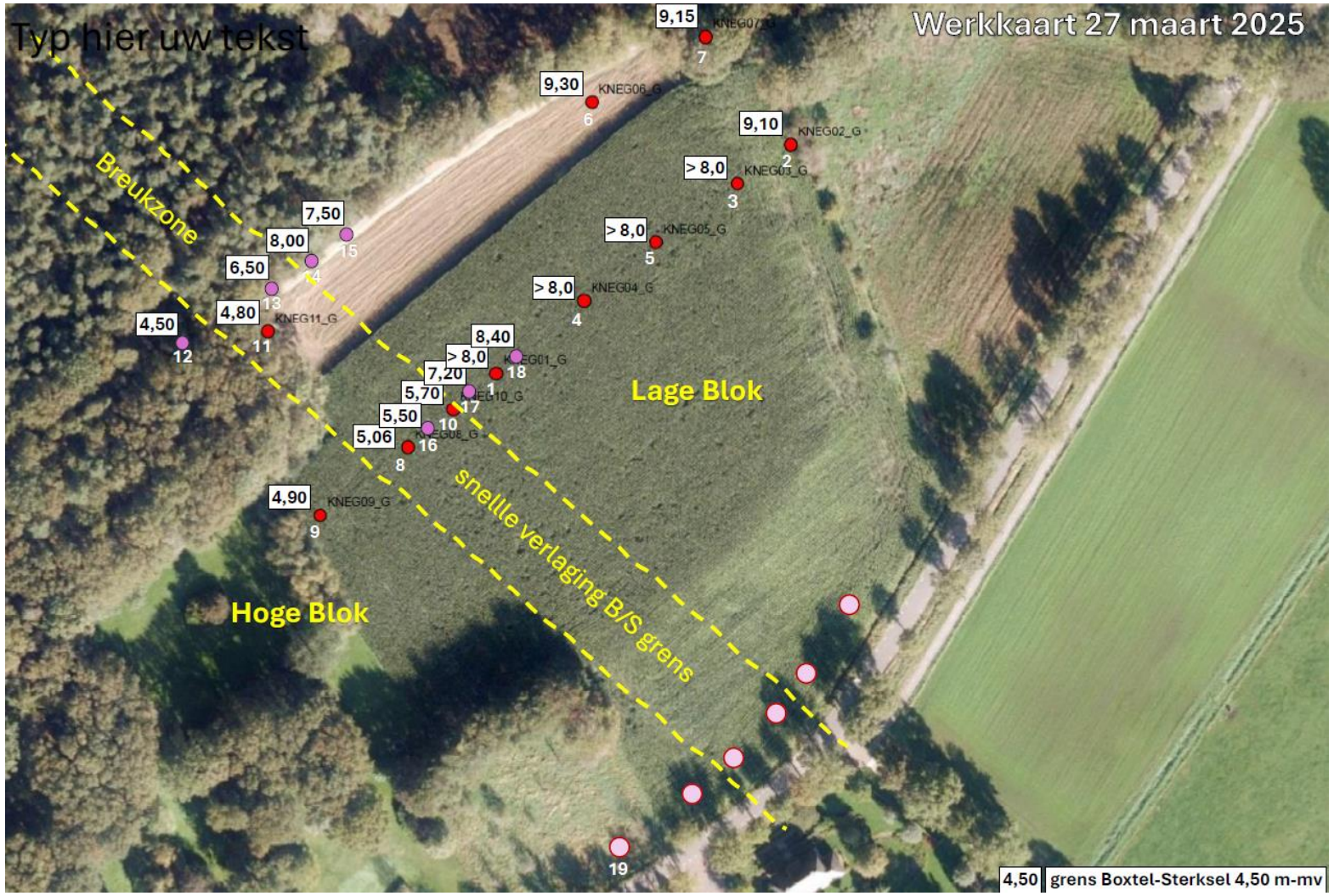
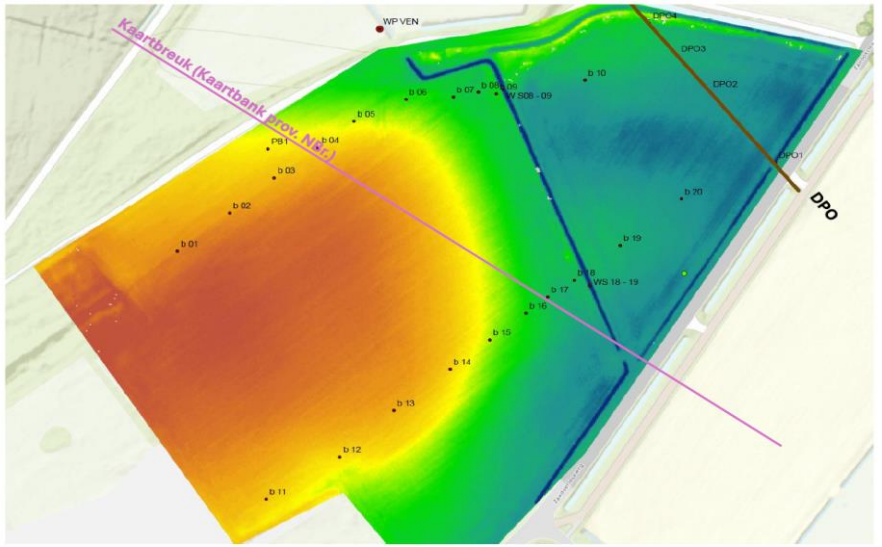
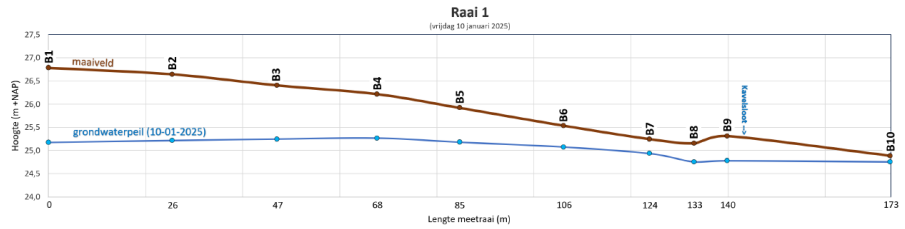
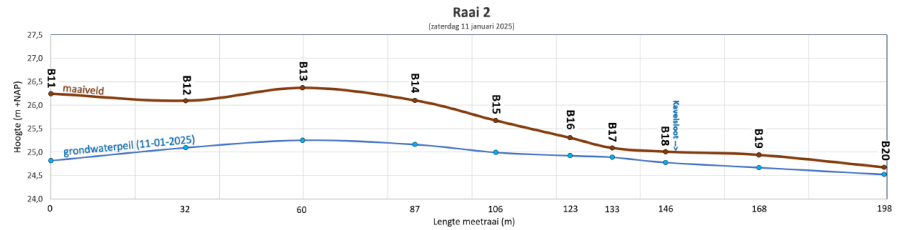
New planned residential area near a fault zone (Veldhoven fault) - Knegsel









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Fault zone – quick change in lithology