

From Data to Information

Learnings from data analysis by EBN



Geo-Drilling Events database

Webportal hosted by EBN

Planning new wells requires careful screening of the trajectory for possible geodrilling hazards. This database provides a better understanding of Geo-Drilling Events (GDE) and hazards in the Dutch subsurface. GDEs' are those events for which a significant geological component contributed to the cause of the incident. The GDE database contains information on drilling events from existing wells. This database is freely accessible for operators active in the Dutch subsurface.

Information in the database

Around 1100 GDEs' have been analysed in approximately 930 on- and offshore wells. The database consists of 3 parts:

- Generic well data
- Geo-drilling events (observations)
- Geo-drilling hazards (interpretations)

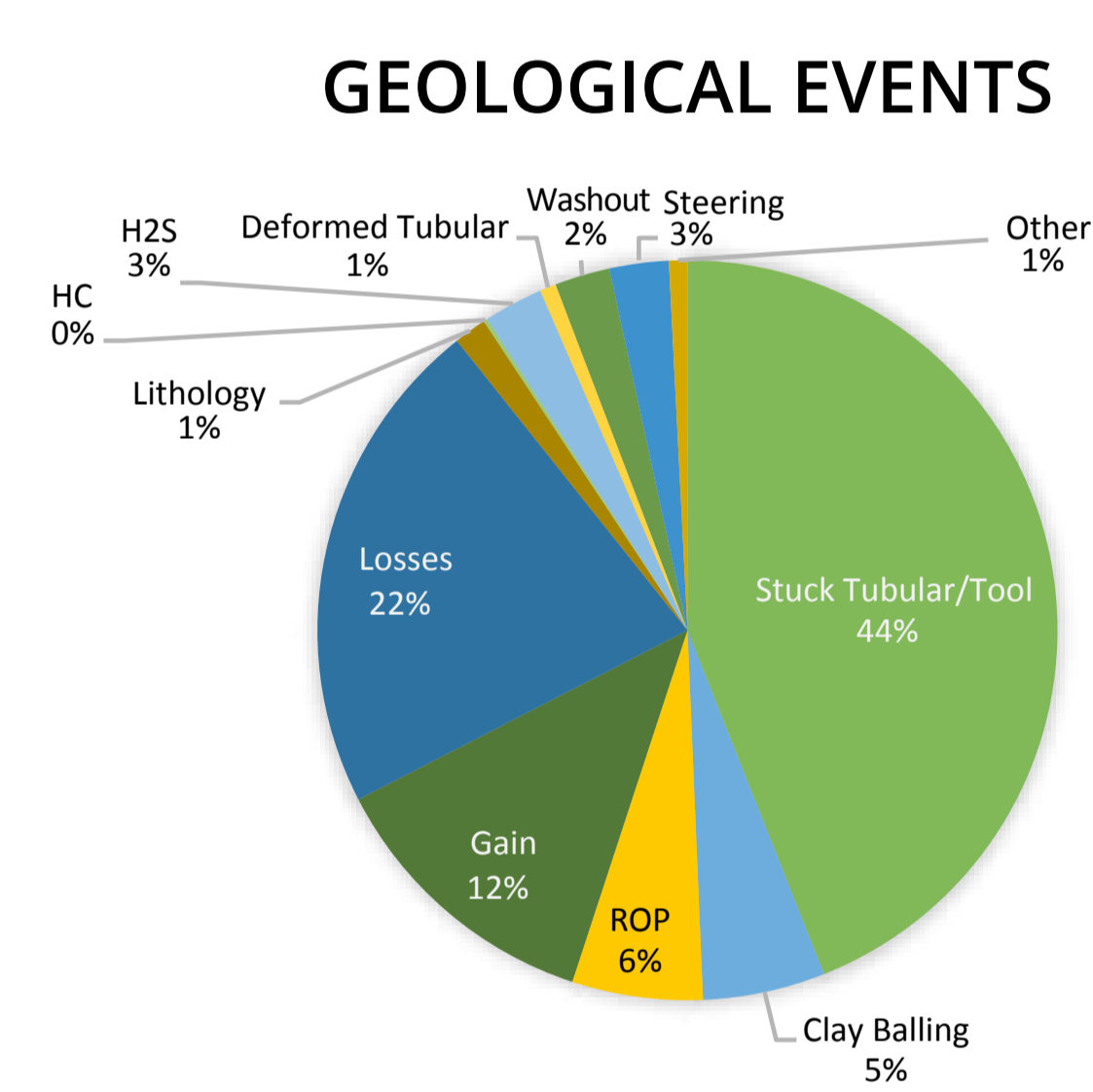


Figure 1a. Distribution of observed geological events while drilling in the Netherlands.

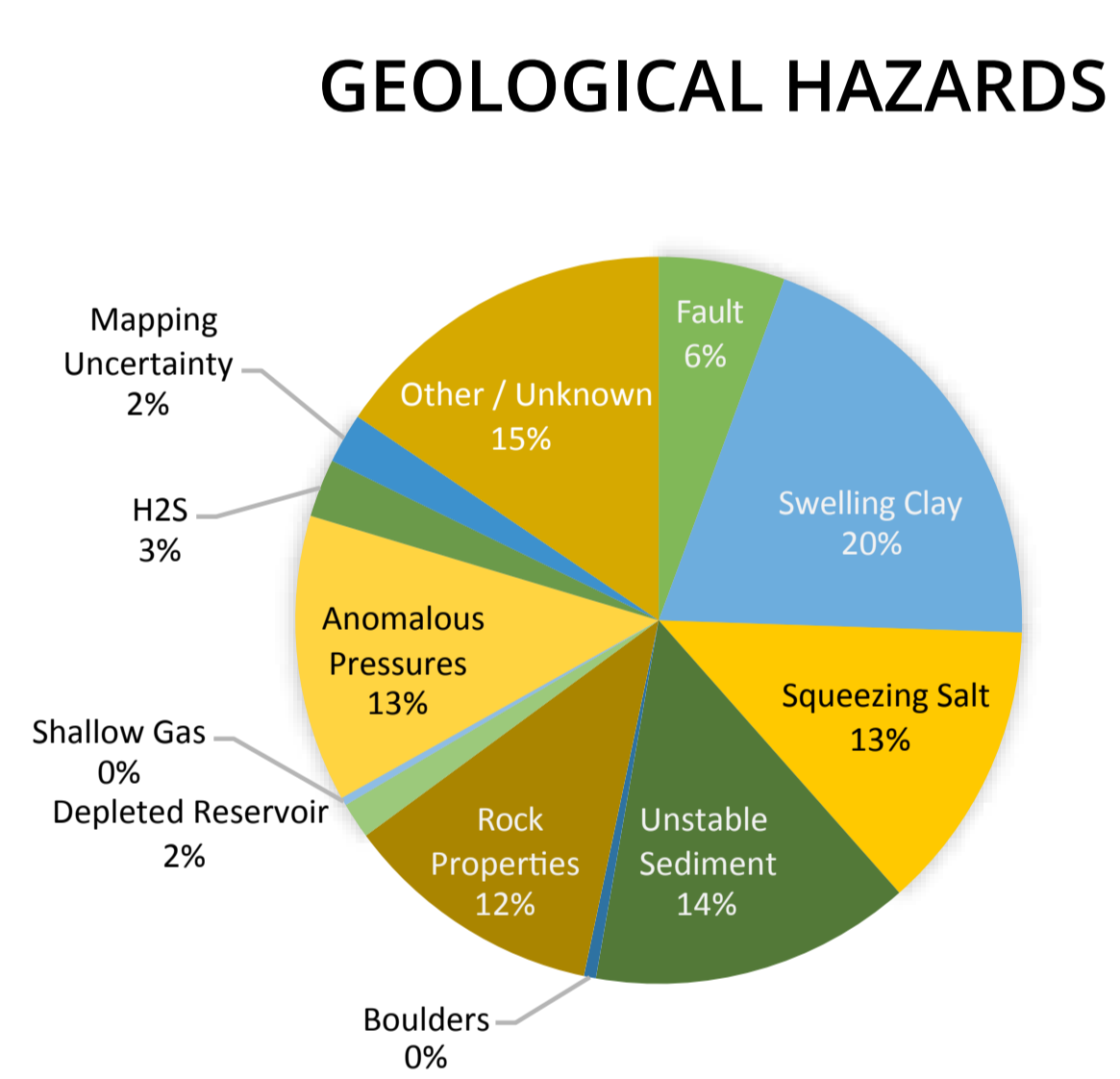


Figure 1b. Distribution of interpreted geological hazards while drilling in the Netherlands.



Hydrocarbon Show database

Webportal hosted by EBN (available in 2019)

The Hydrocarbon Show (HCS) database provides a systematic overview of hydrocarbon shows based on: mudlog data, well test data and (sidewall-)core data. This information is compiled per stratigraphic interval in key wells drilled in the Dutch subsurface. The analysis uses a detailed classification scheme to describe all types of oil and gas shows and includes estimates of the confidence level of interpretation. This information is used for exploration purposes and to assist in well planning, including geothermal wells.

Information in the database

The database currently contains 2200 wells of which approximately 700 on- and offshore wells have been analyzed in a detailed manner.

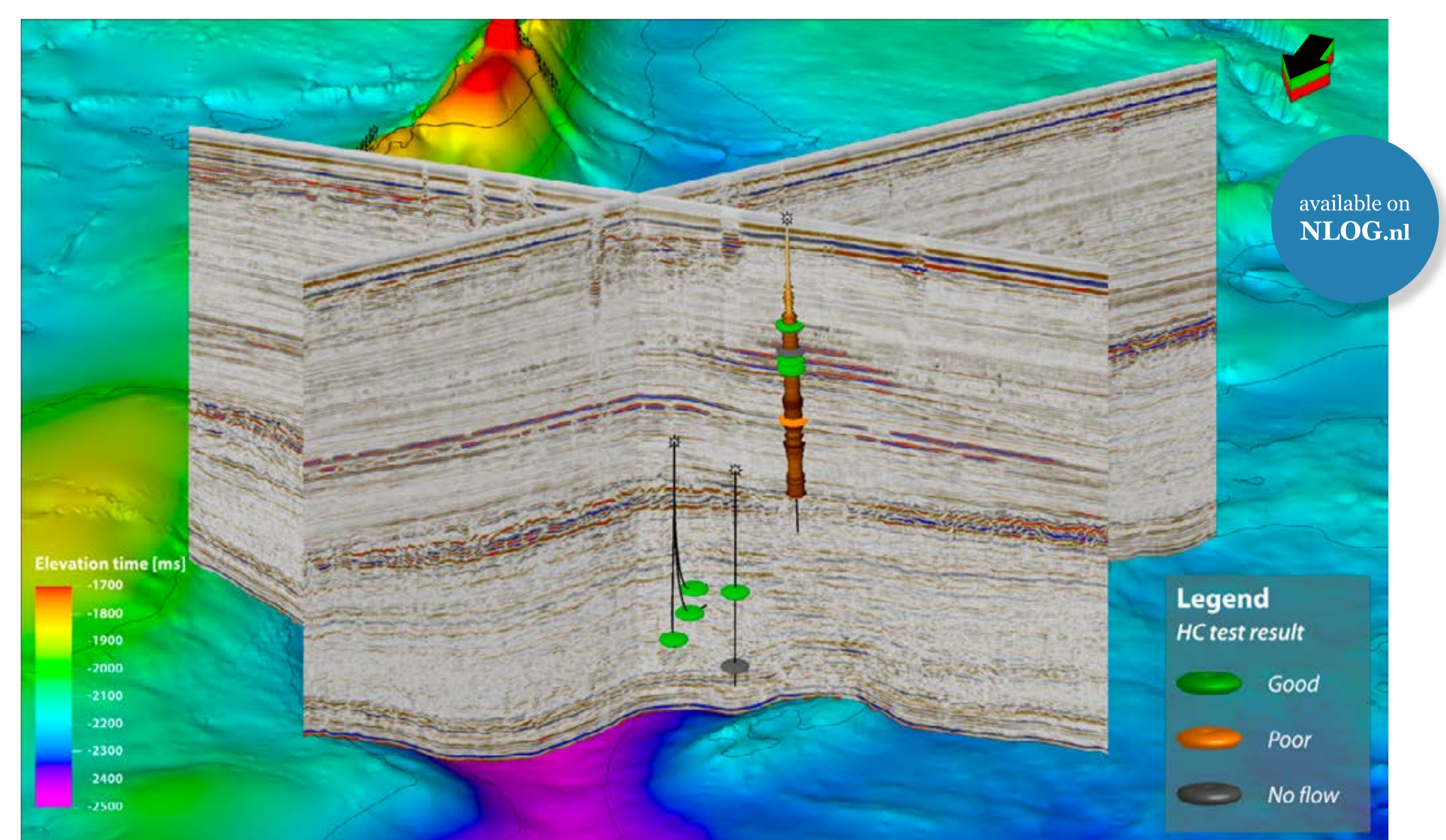


Figure 3. Integrated visualization of HC show test data with seismic- and well log data (gamma ray). Displayed surface is the Base North Sea Group.

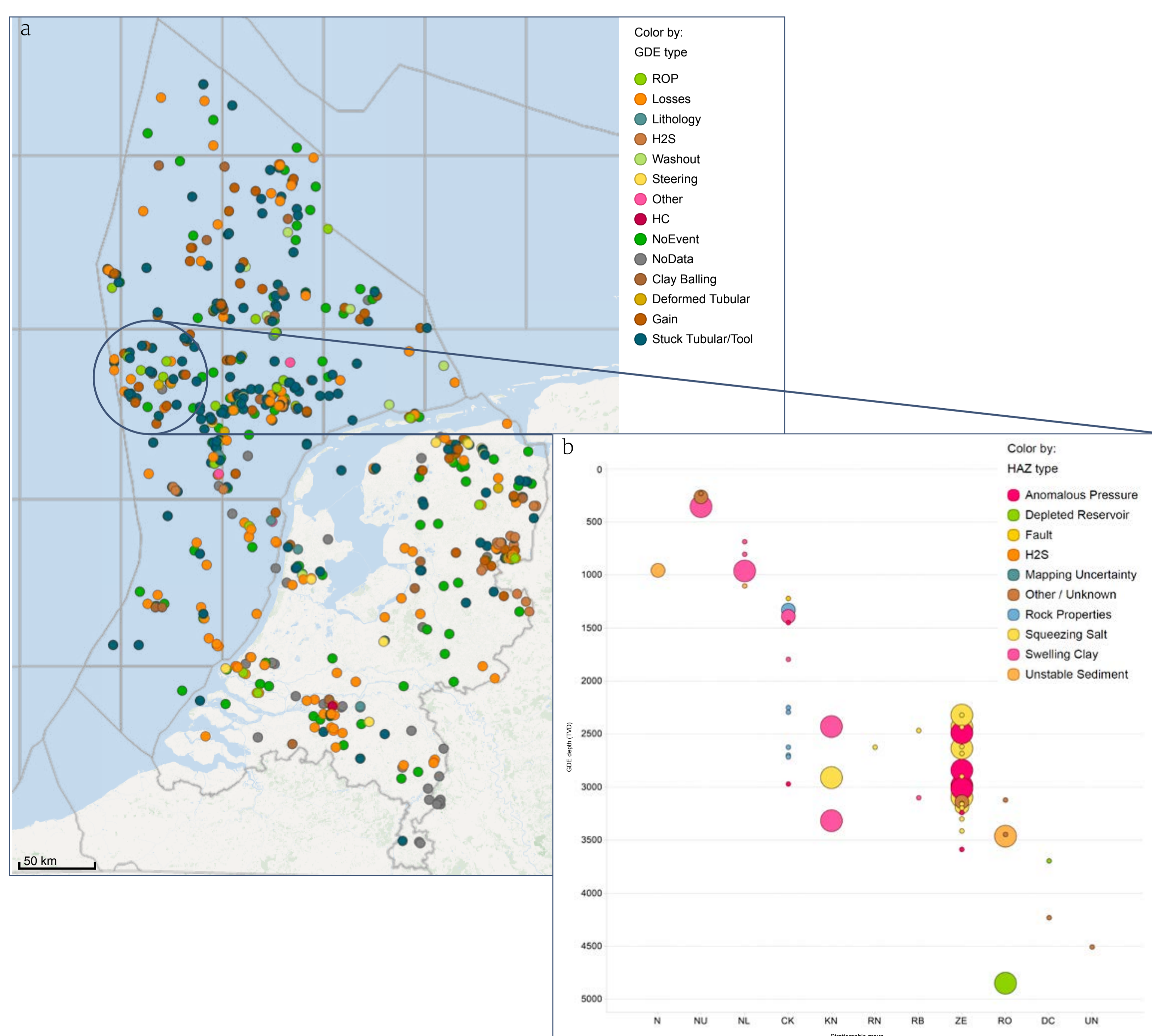


Figure 2a. Map view of the GDE database in the spotfire analysis tool. The observed GDE types are indicated as coloured spheres for which additional information is available, b. Regional selection of GDEs' plotted by their interpreted hazard type. The size of the spheres is indicative of the severity of the GDE, whereas ordering by stratigraphic interval allows the user to link certain hazard types to particular stratigraphic intervals.

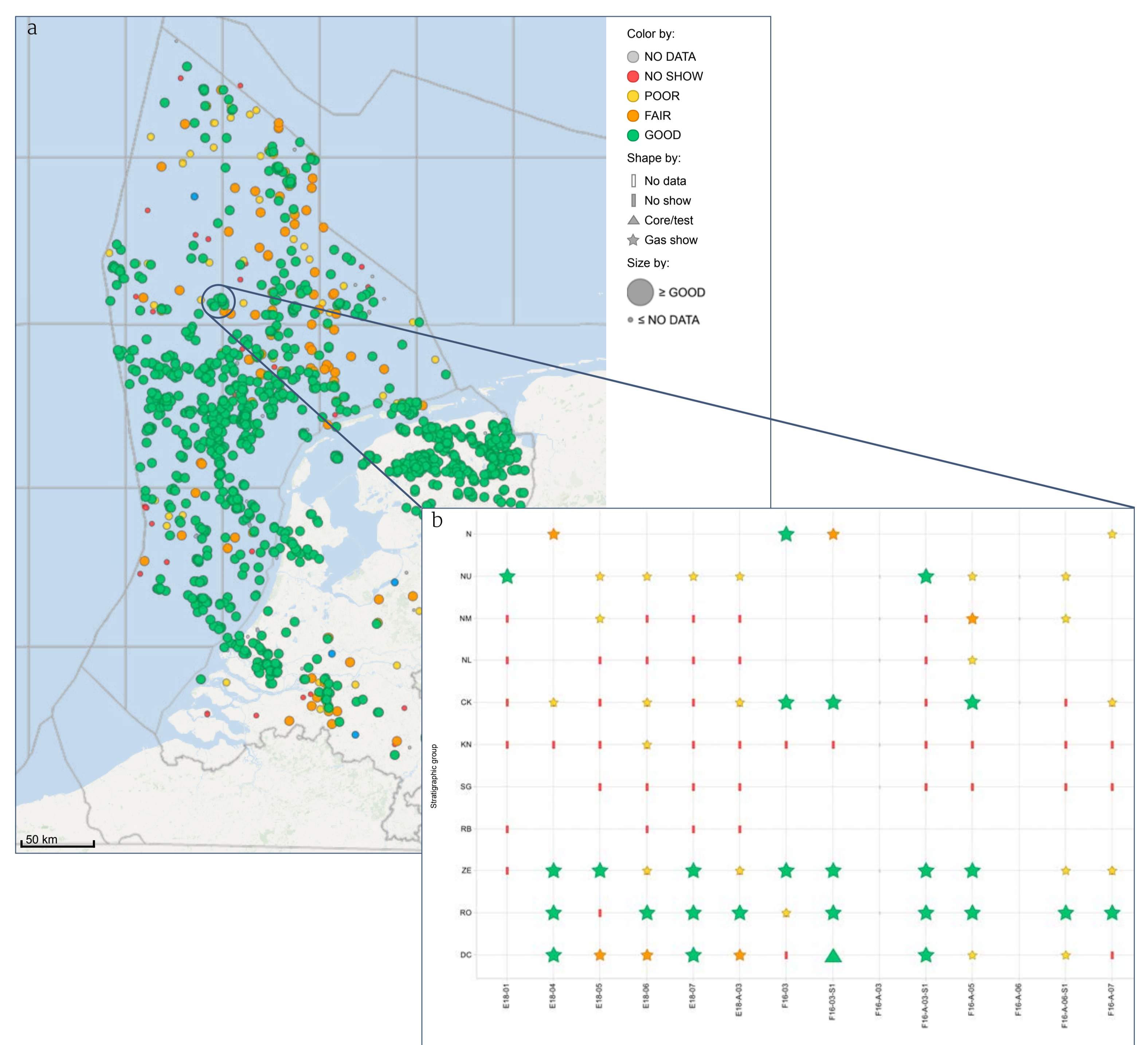


Figure 4a. Map view of the HCS database in the analysis tool. Each stratigraphic interval is classified and the quality of obtained HC shows is indicated by the coloured spheres, b. Regional selection of wells with encountered HC shows per stratigraphic group.