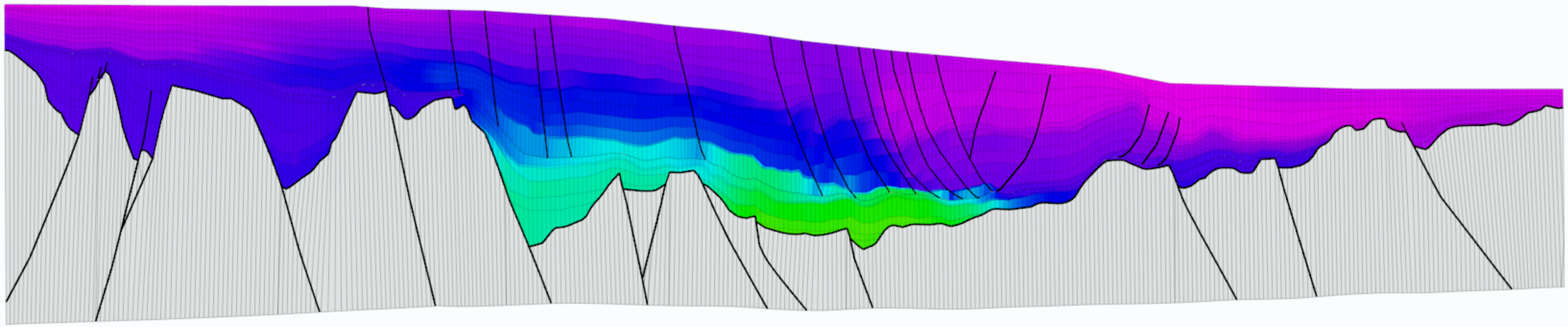
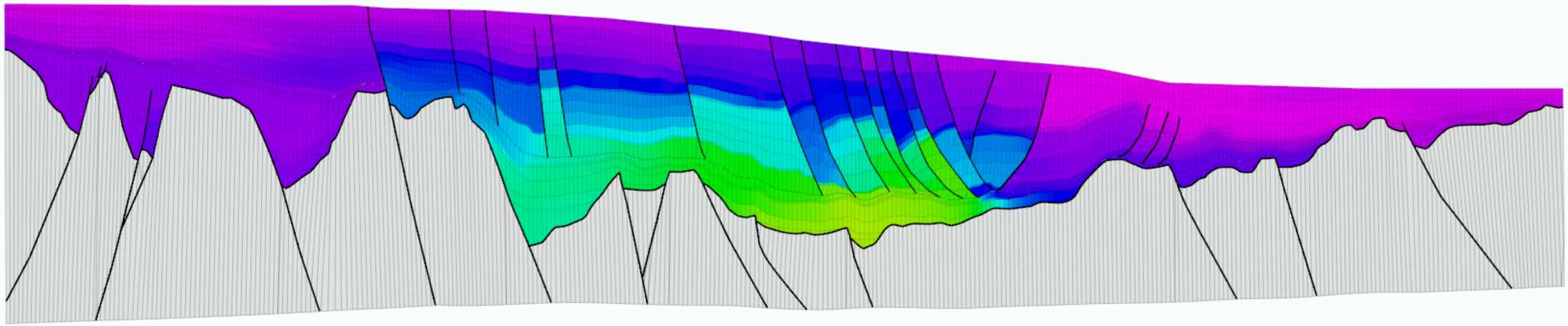
Water **OverPressure** Regime

17 Ma

TRANSPARENT FAULTS



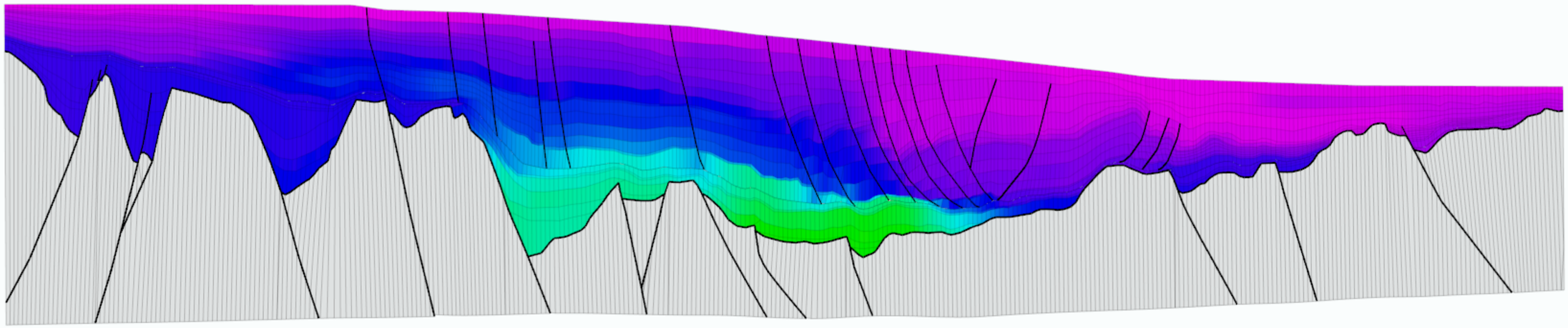
IMPERMEABLE FAULTS



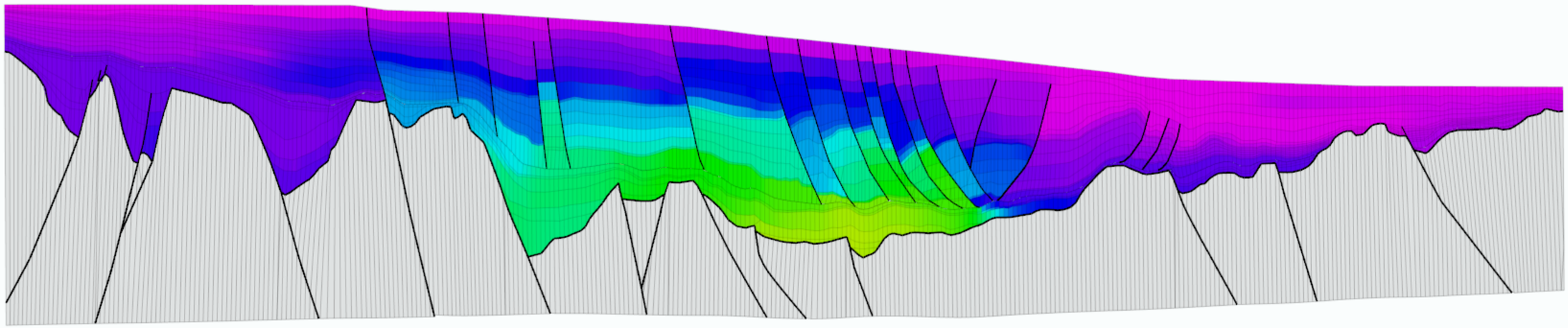
Water **OverPressure** Regime

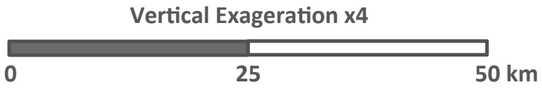
10 Ma

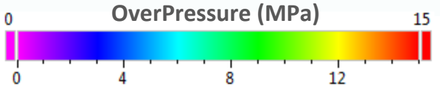
TRANSPARENT FAULTS



IMPERMEABLE FAULTS



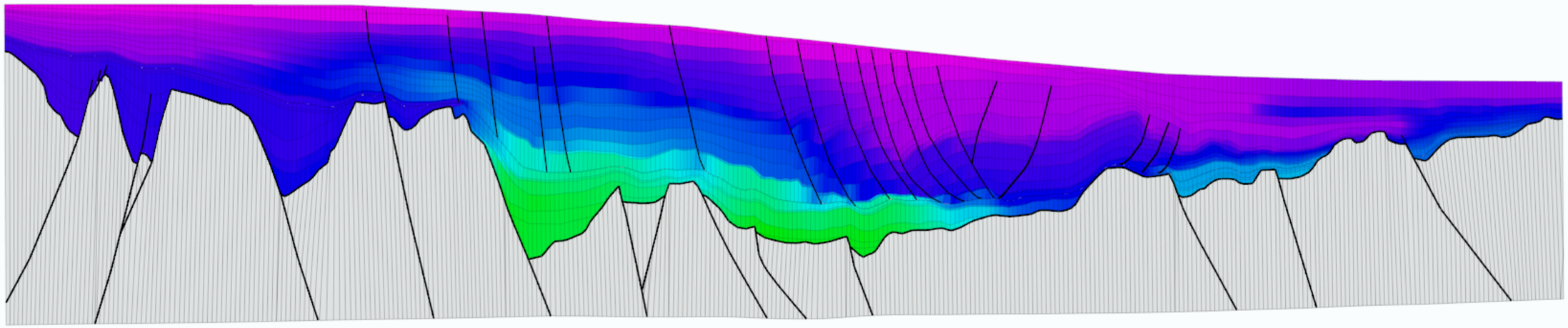




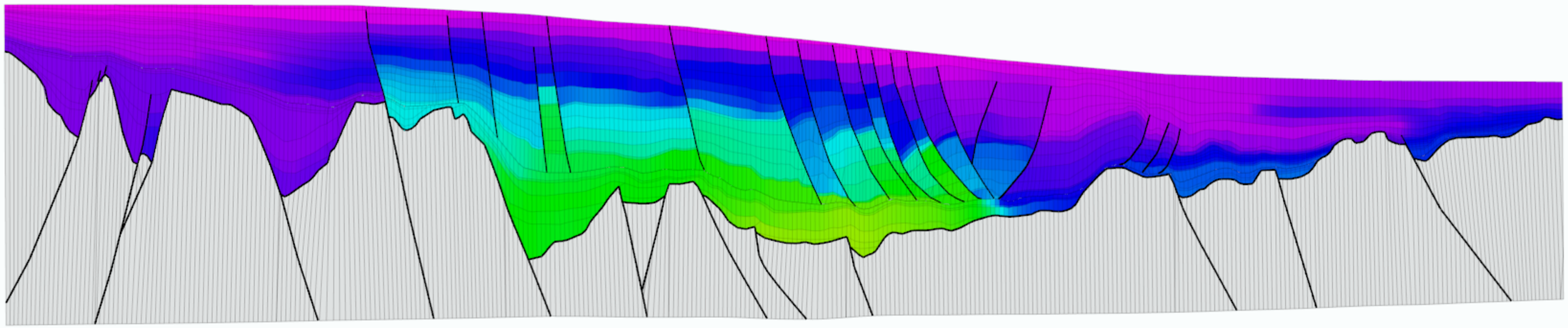
Water **OverPressure** Regime

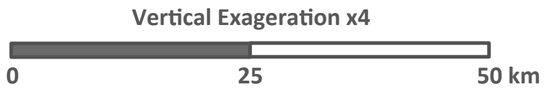
8 Ma

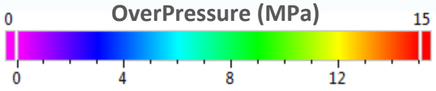
TRANSPARENT FAULTS



IMPERMEABLE FAULTS



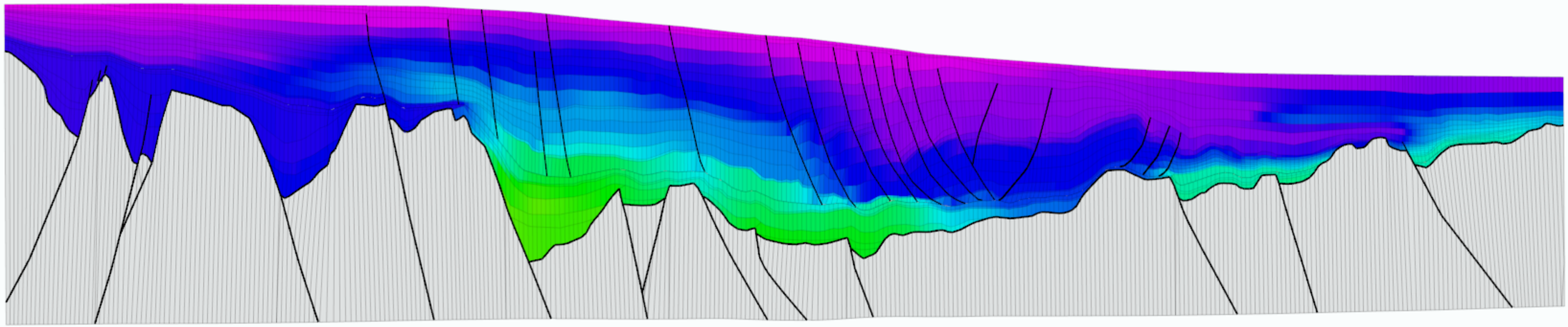




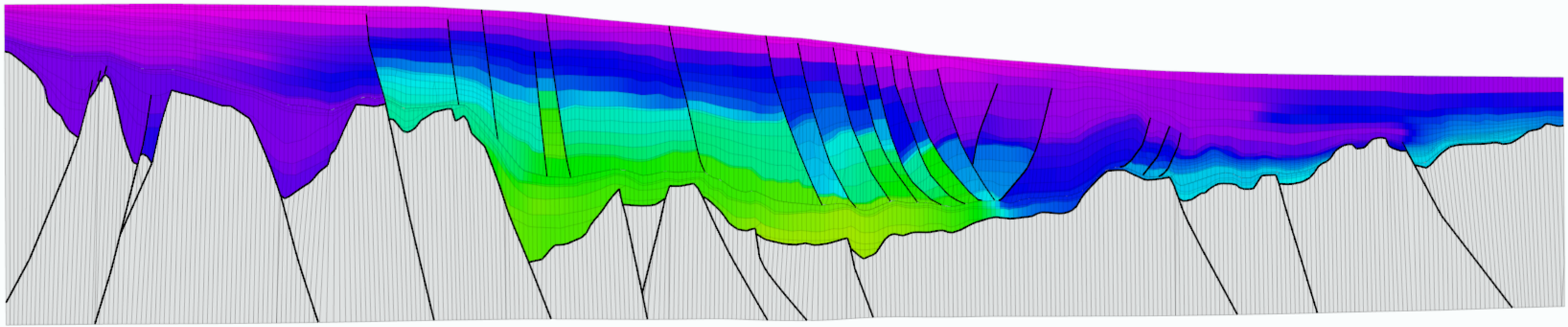
Water **OverPressure** Regime

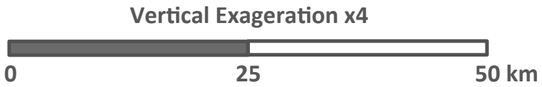
6.5 Ma

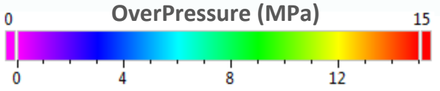
TRANSPARENT FAULTS



IMPERMEABLE FAULTS



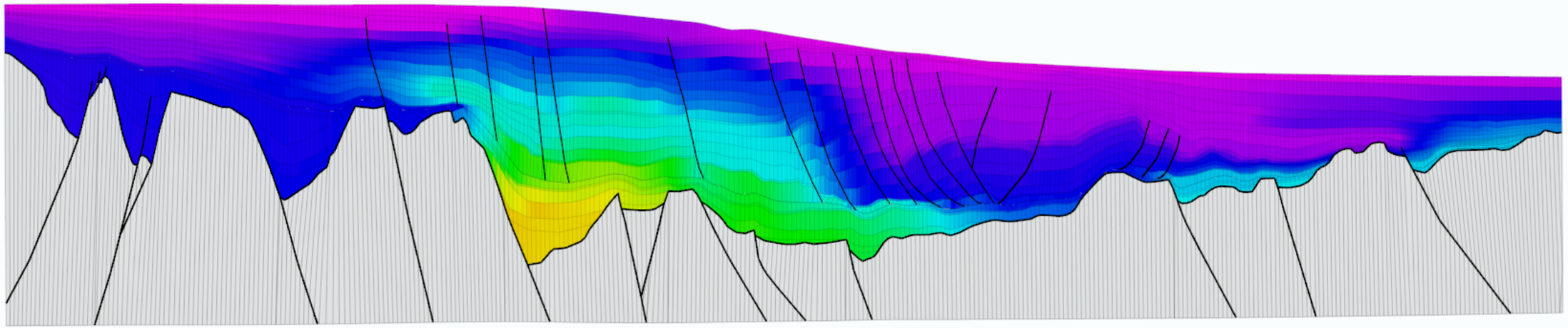




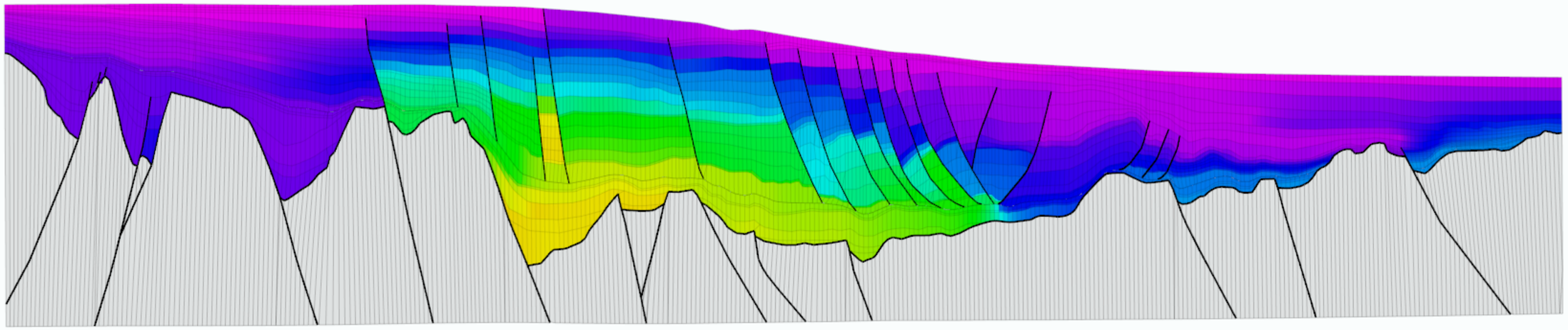
Water **OverPressure** Regime

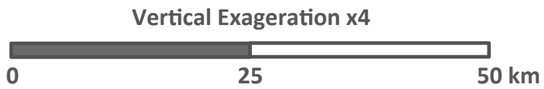
3 Ma

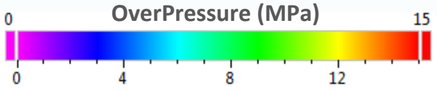
TRANSPARENT FAULTS



IMPERMEABLE FAULTS



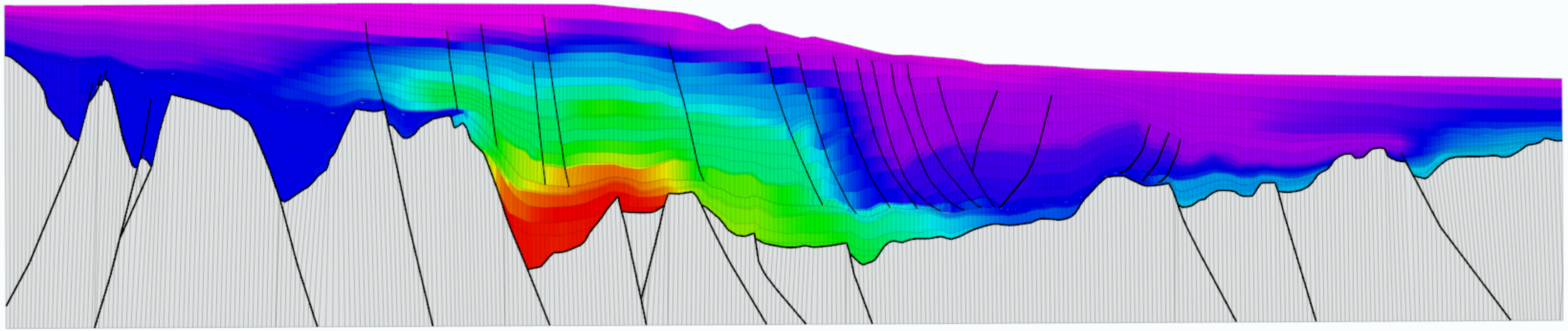




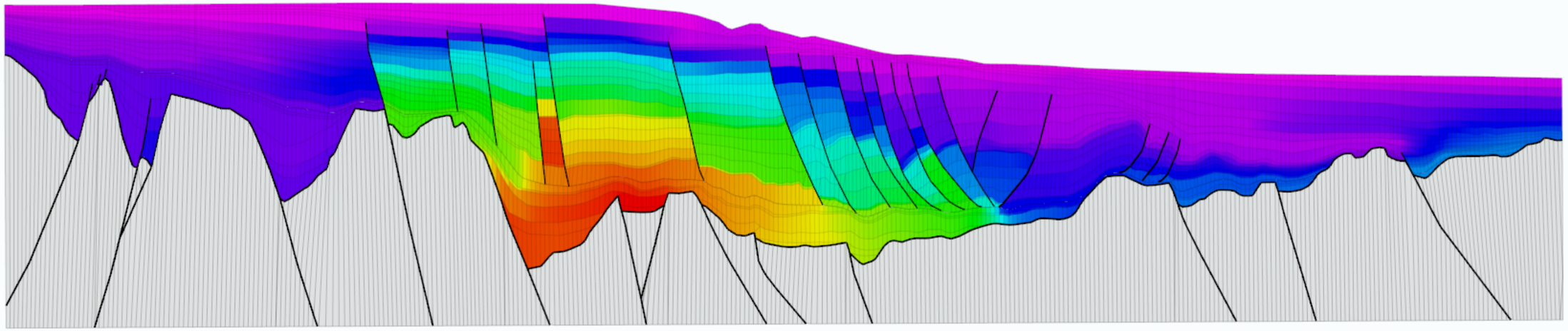
Water **OverPressure** Regime

0 Ma

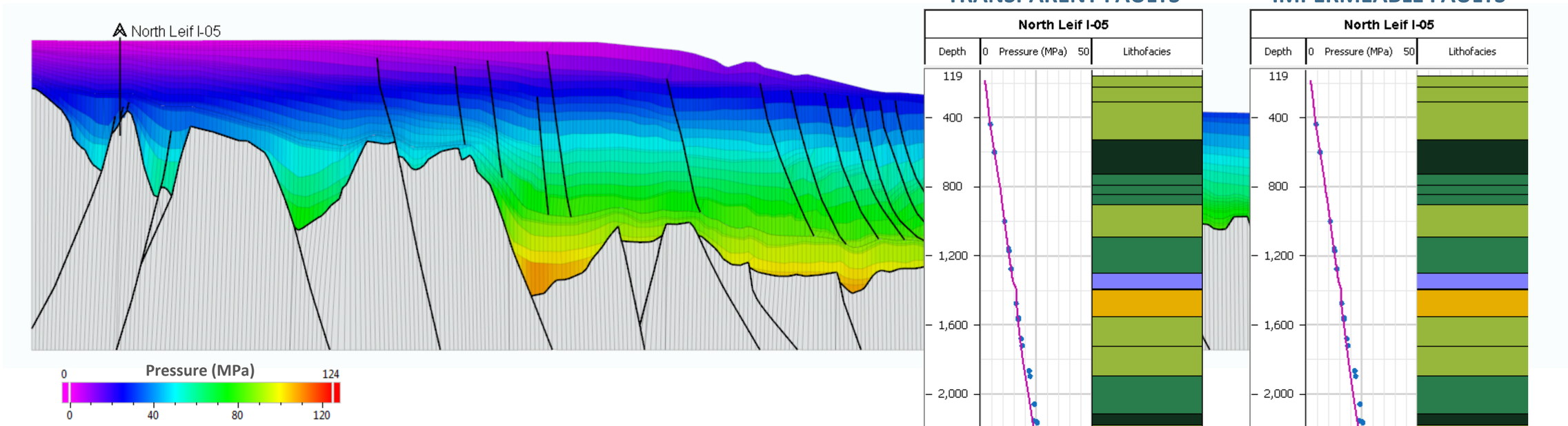
TRANSPARENT FAULTS



IMPERMEABLE FAULTS



Water Pressure Calibration



TRANSPARENT FAULTS

IMPERMEABLE FAULTS

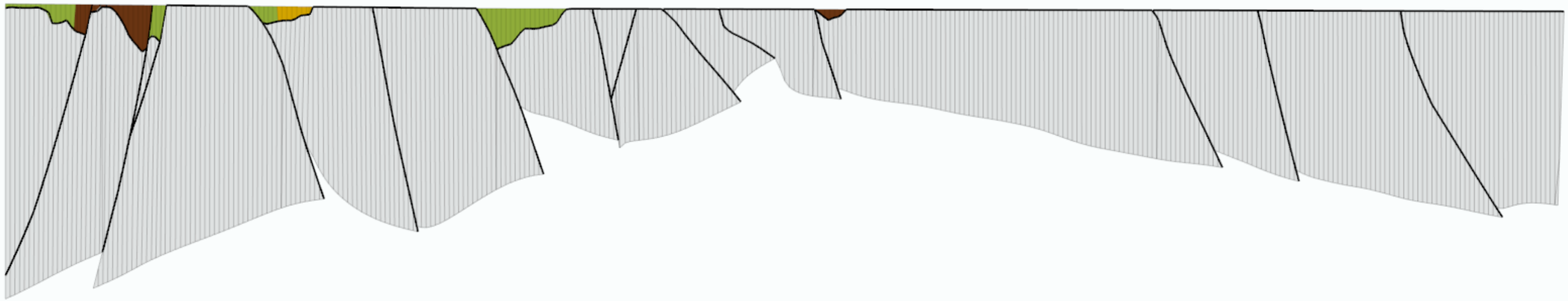
- Calibration is **good** and almost **identical** for both scenarios.
- Without any additional information from the distal area, or on the fault behavior, both scenarios are valid.

HYDROCARBON MIGRATION

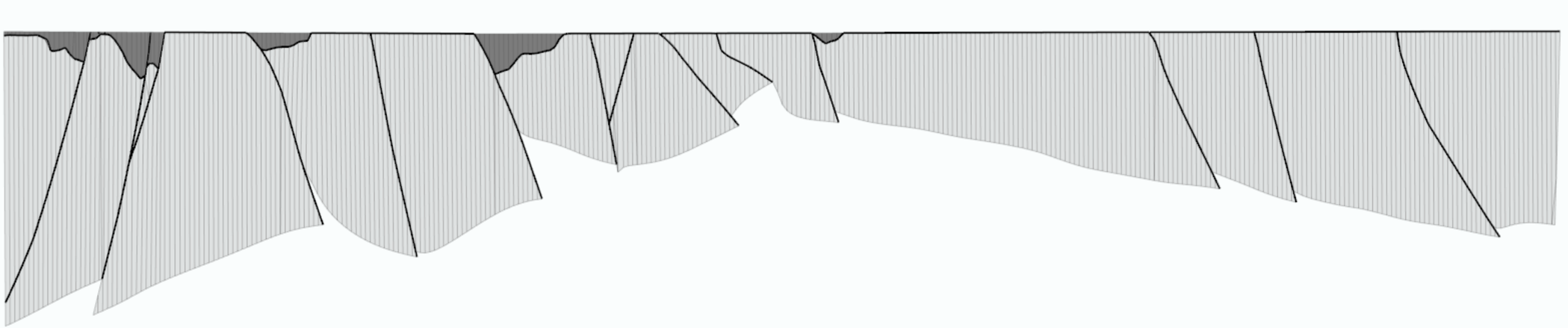
Hydrocarbon **Saturation**

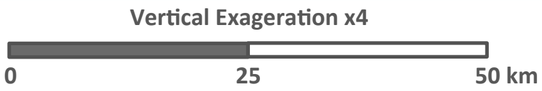
127 Ma

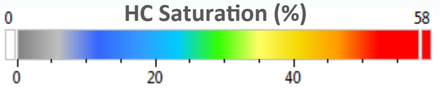
LITHOLOGY



TRANSPARENT FAULTS



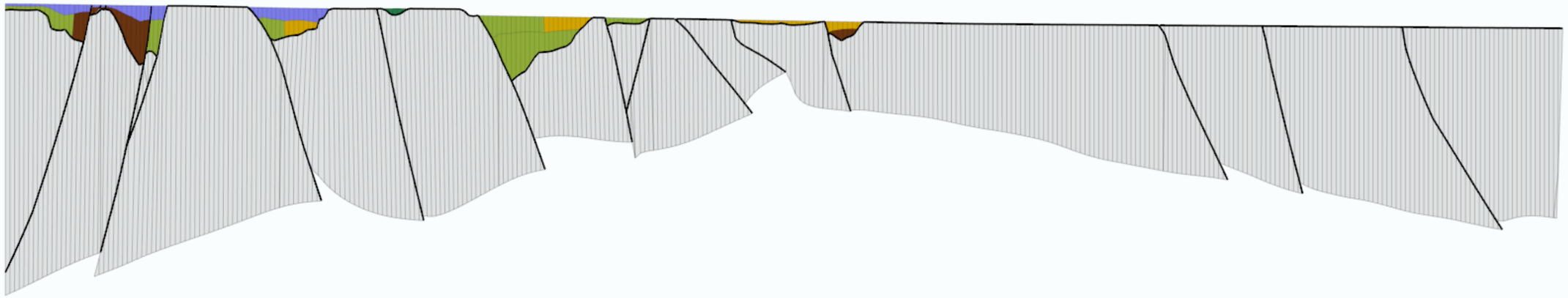




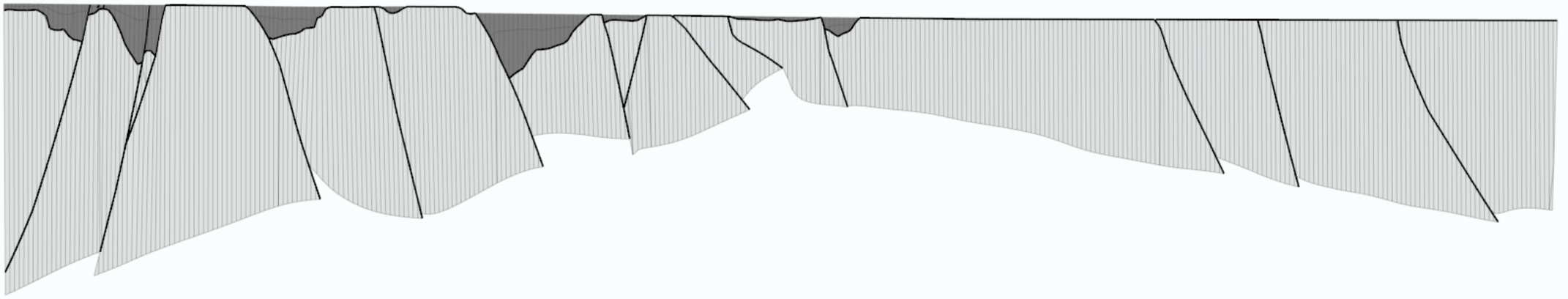
Hydrocarbon **Saturation**

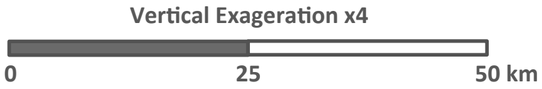
118 Ma

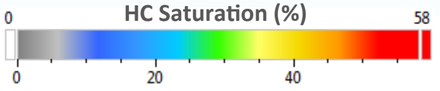
LITHOLOGY



TRANSPARENT FAULTS



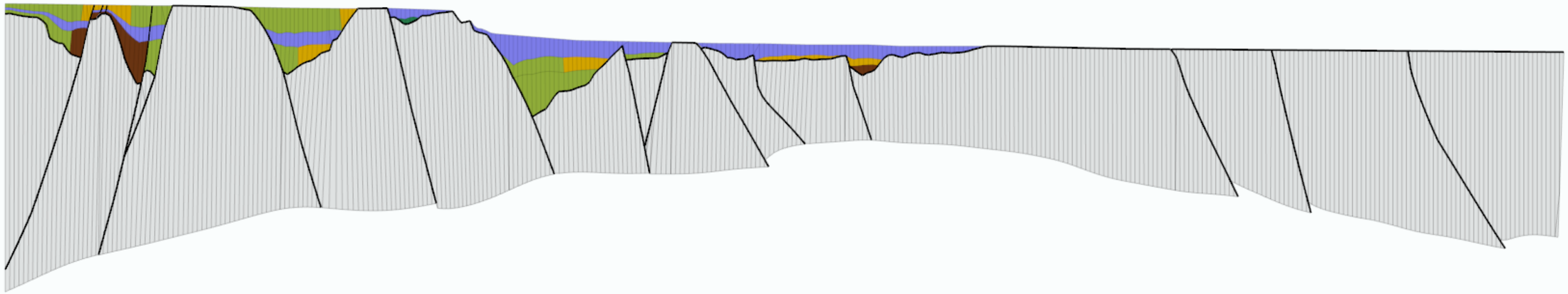




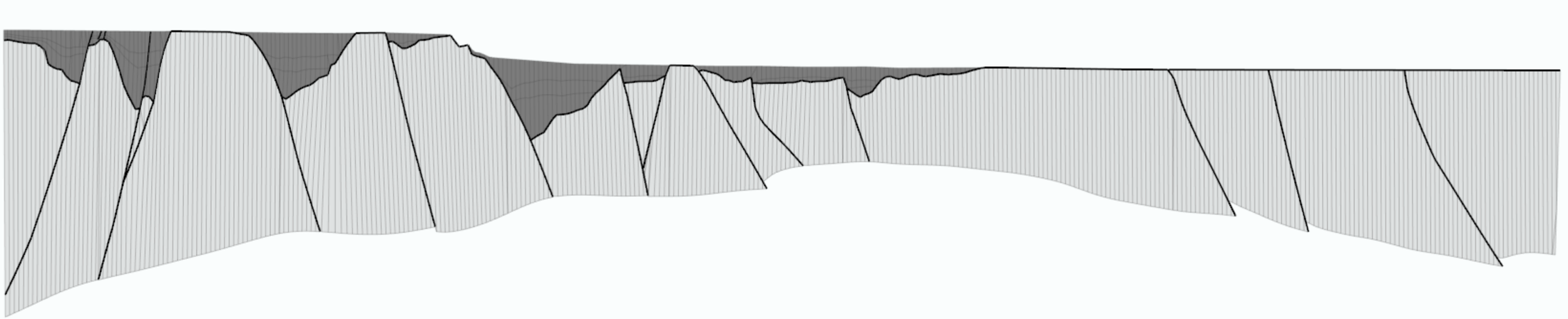
Hydrocarbon **Saturation**

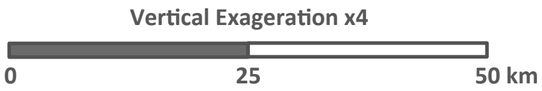
100 Ma

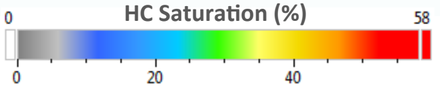
LITHOLOGY



TRANSPARENT FAULTS



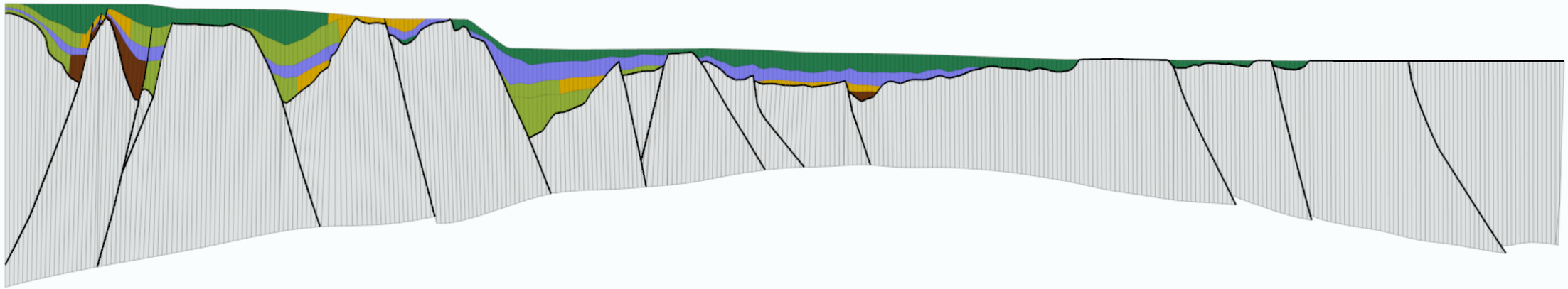




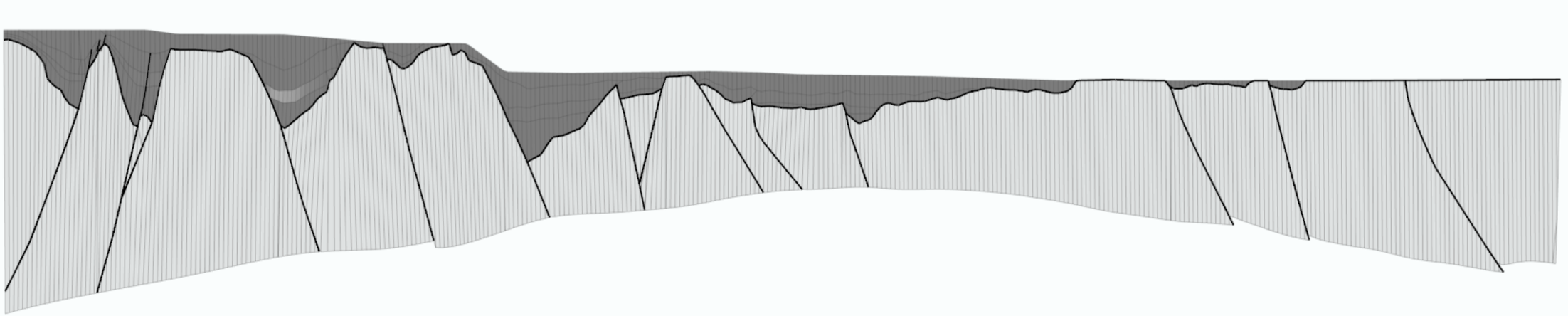
Hydrocarbon **Saturation**

66 Ma

LITHOLOGY



TRANSPARENT FAULTS



Vertical Exageration x4

0 25 50 km

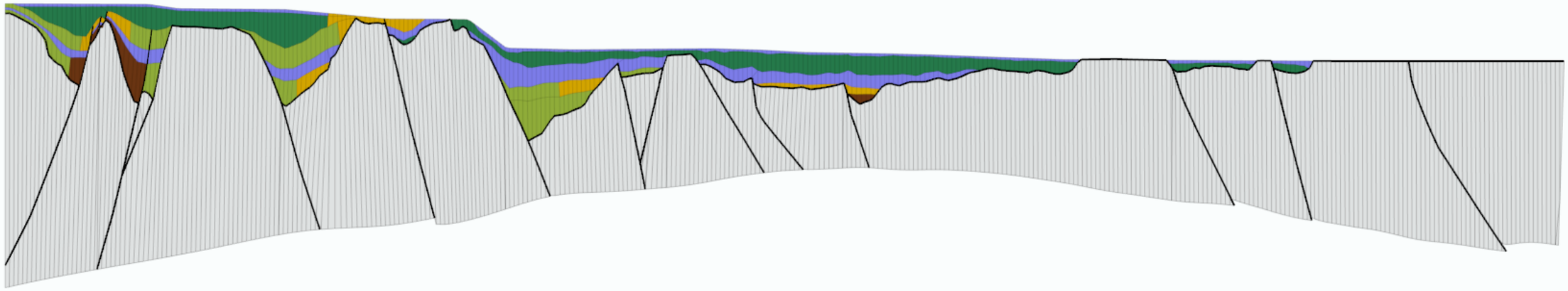
HC Saturation (%)

0 20 40 58

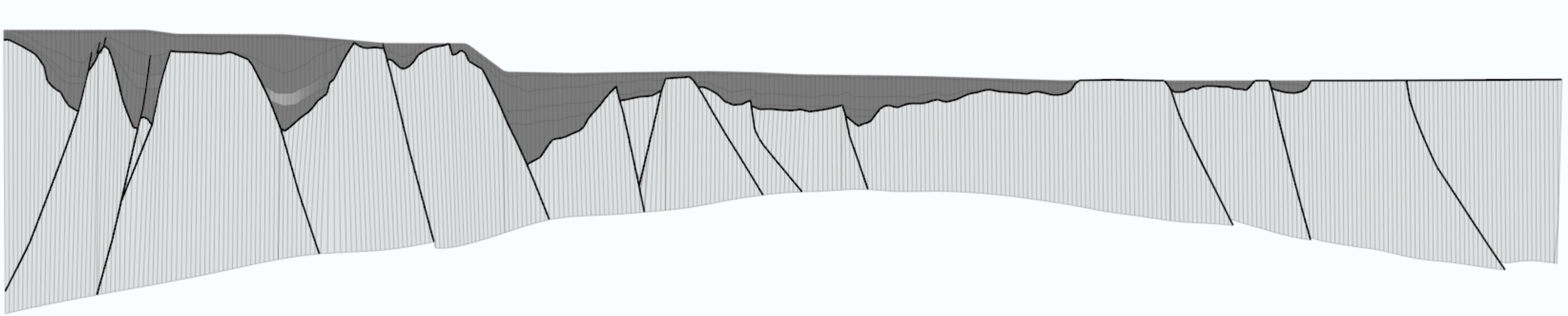
Hydrocarbon **Saturation**

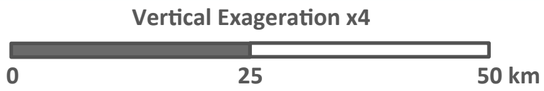
65 Ma

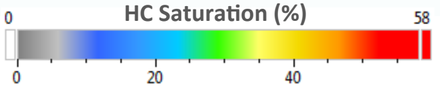
LITHOLOGY



TRANSPARENT FAULTS



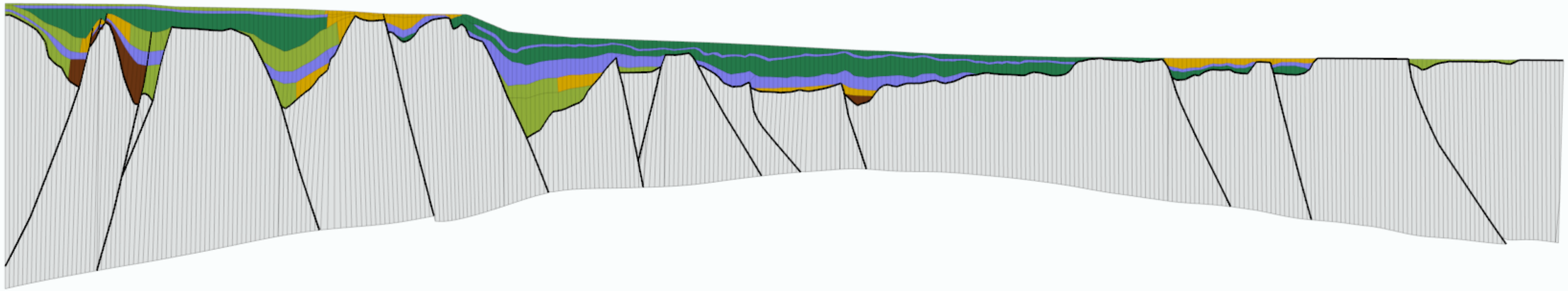




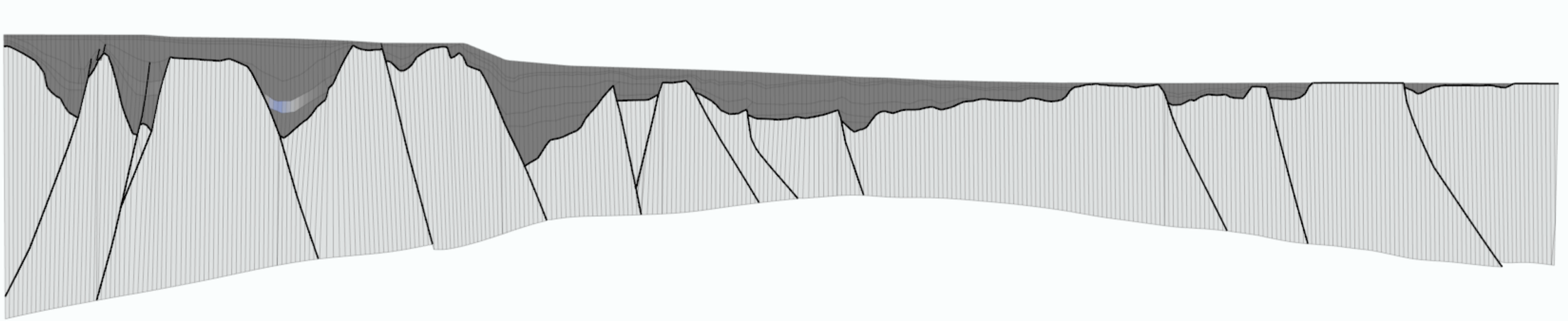
Hydrocarbon **Saturation**

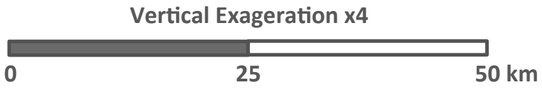
62 Ma

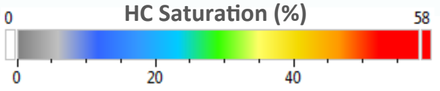
LITHOLOGY



TRANSPARENT FAULTS



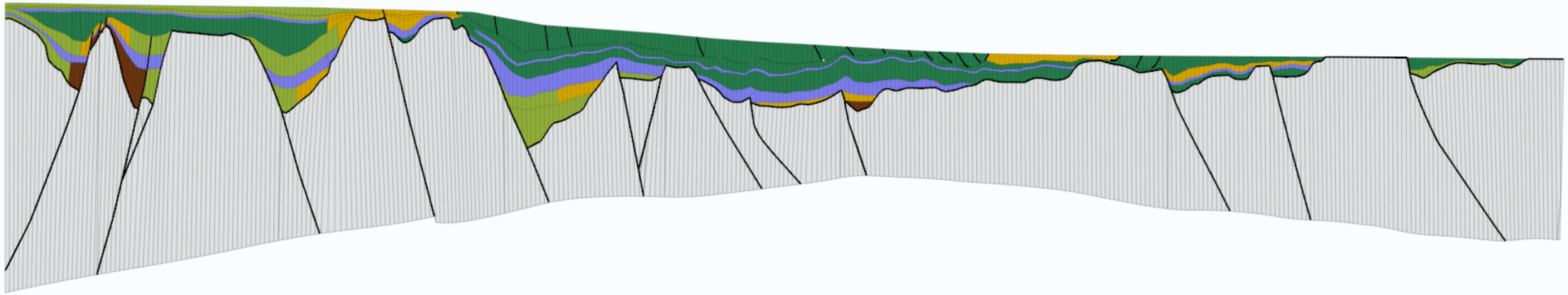




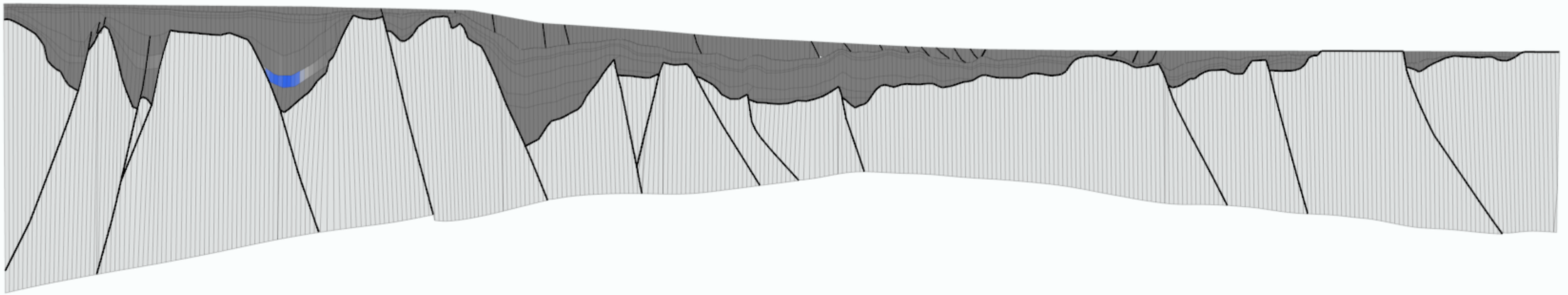
Hydrocarbon **Saturation**

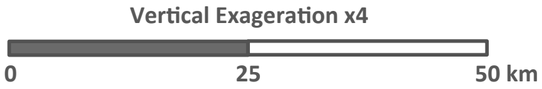
56 Ma

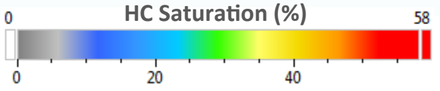
LITHOLOGY



TRANSPARENT FAULTS



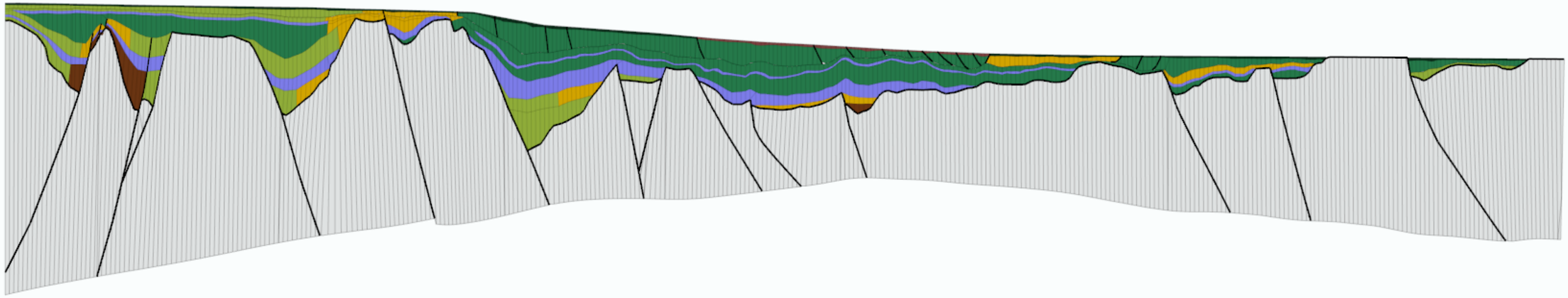




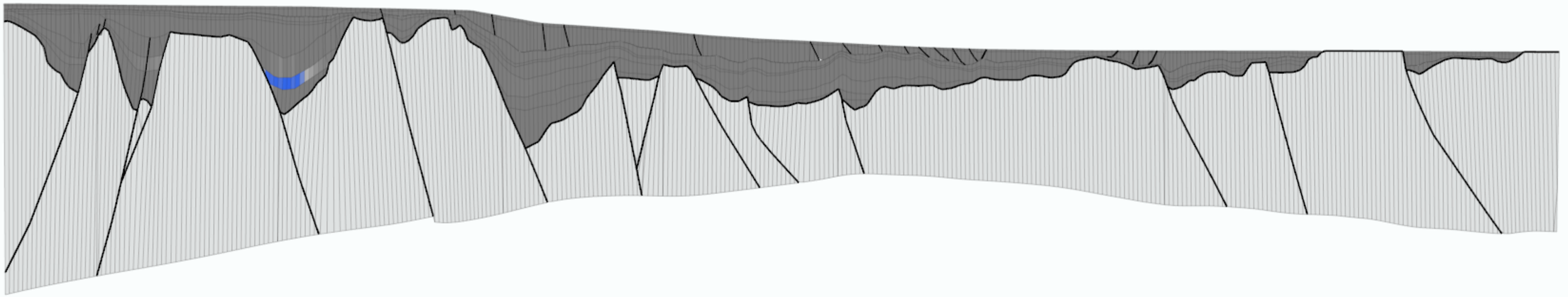
Hydrocarbon **Saturation**

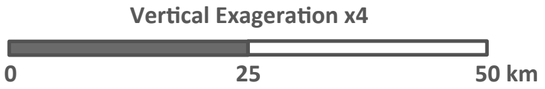
54 Ma

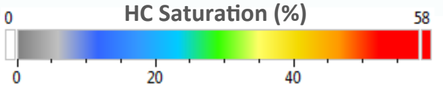
LITHOLOGY



TRANSPARENT FAULTS



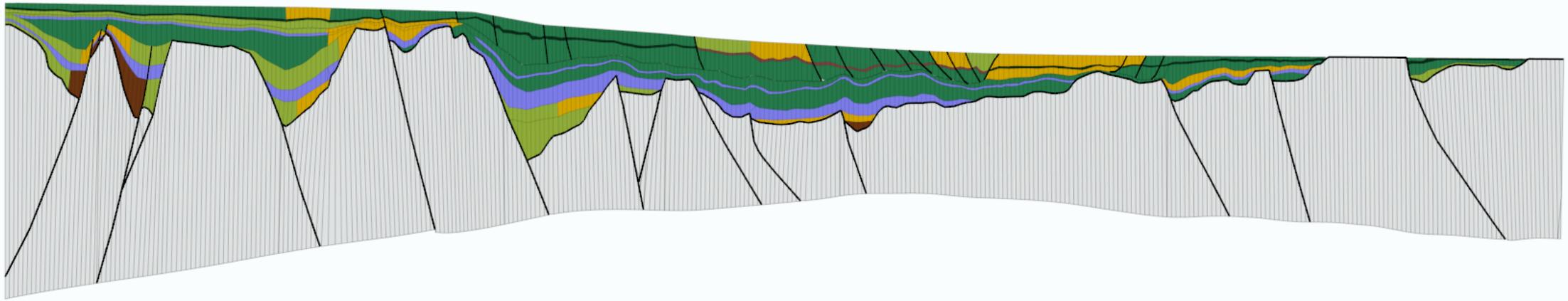




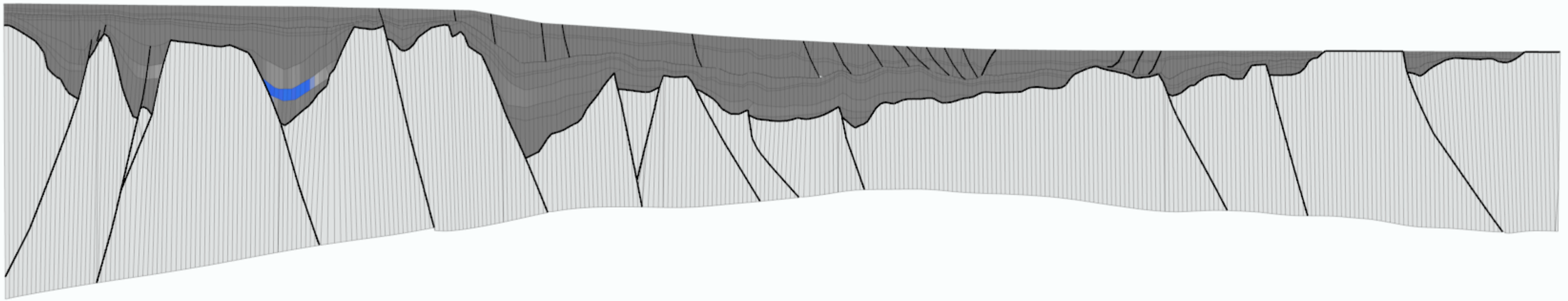
Hydrocarbon **Saturation**

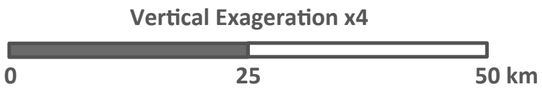
51 Ma

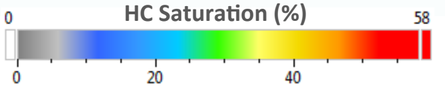
LITHOLOGY



TRANSPARENT FAULTS



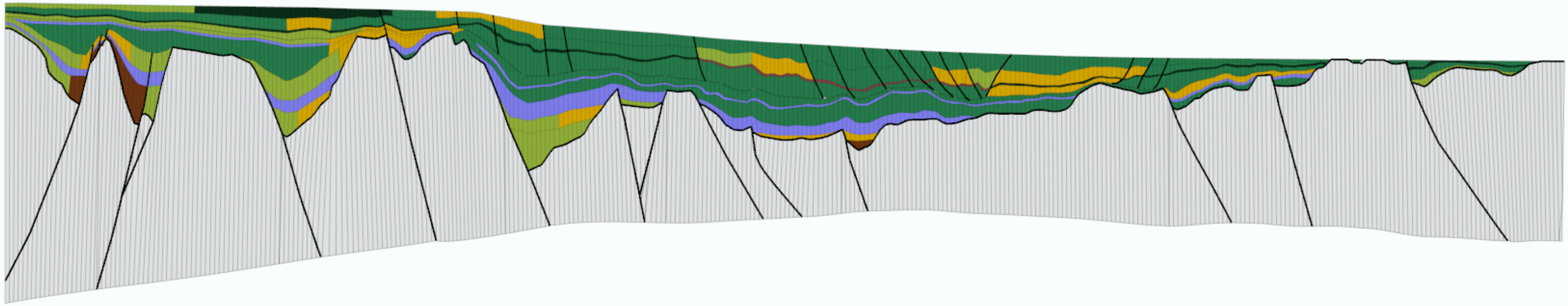




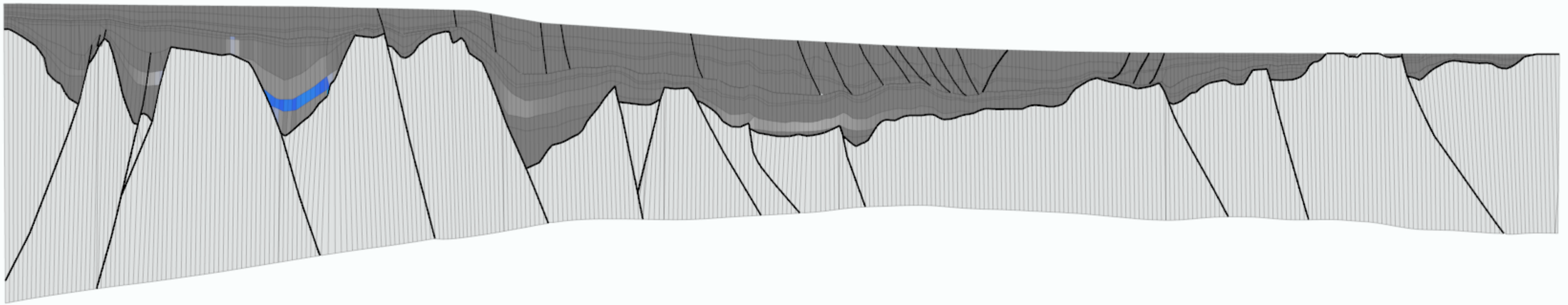
Hydrocarbon **Saturation**

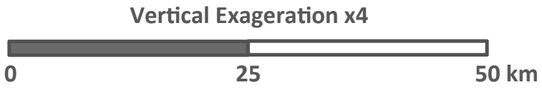
49 Ma

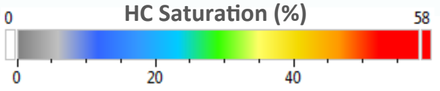
LITHOLOGY



TRANSPARENT FAULTS



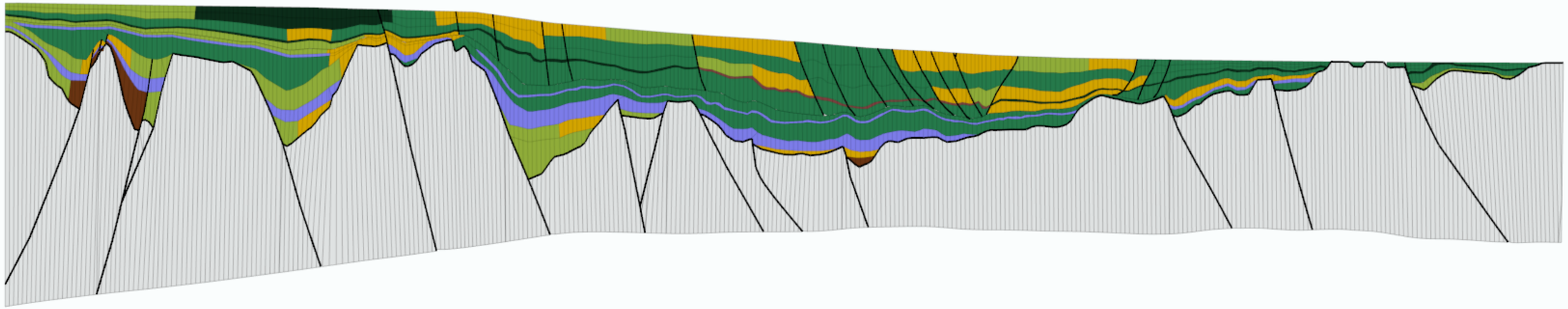




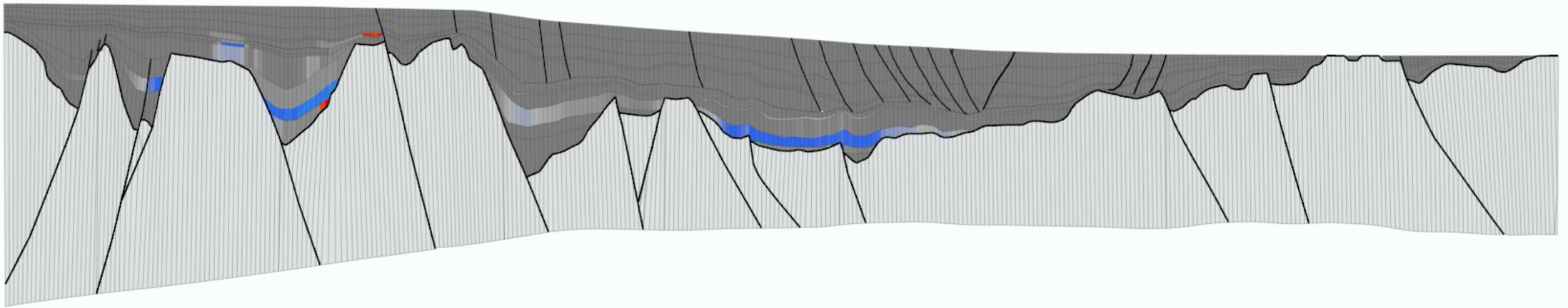
Hydrocarbon **Saturation**

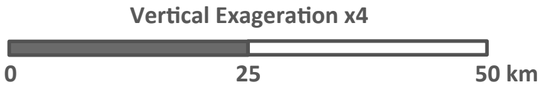
47 Ma

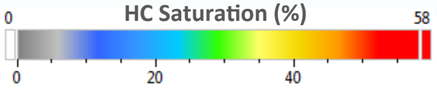
LITHOLOGY



TRANSPARENT FAULTS



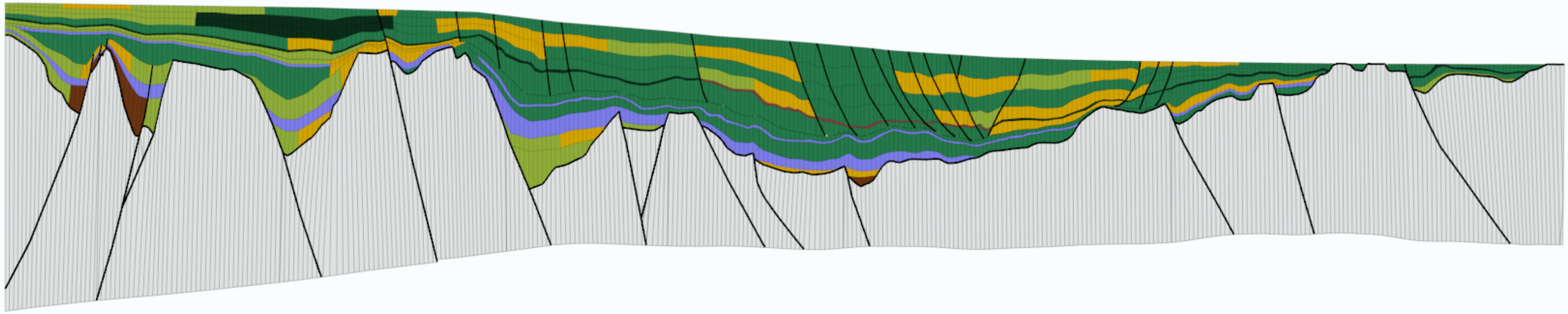




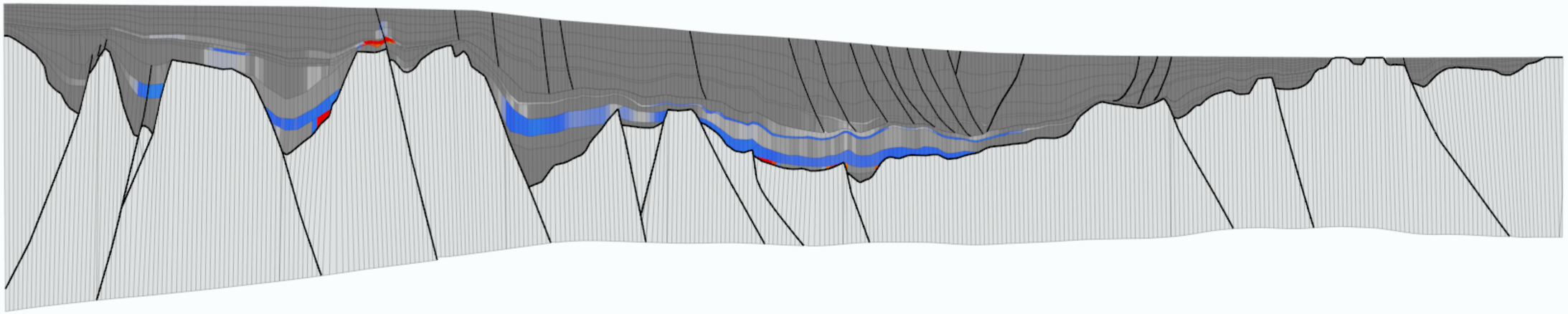
Hydrocarbon **Saturation**

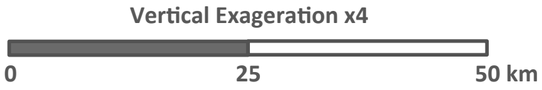
45 Ma

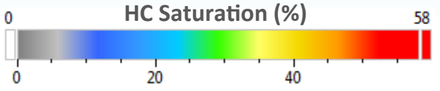
LITHOLOGY



TRANSPARENT FAULTS



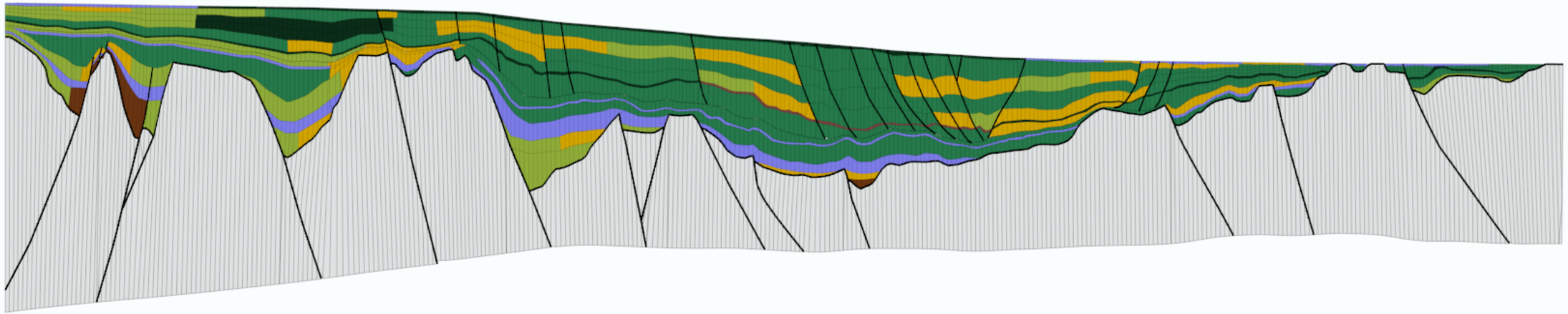




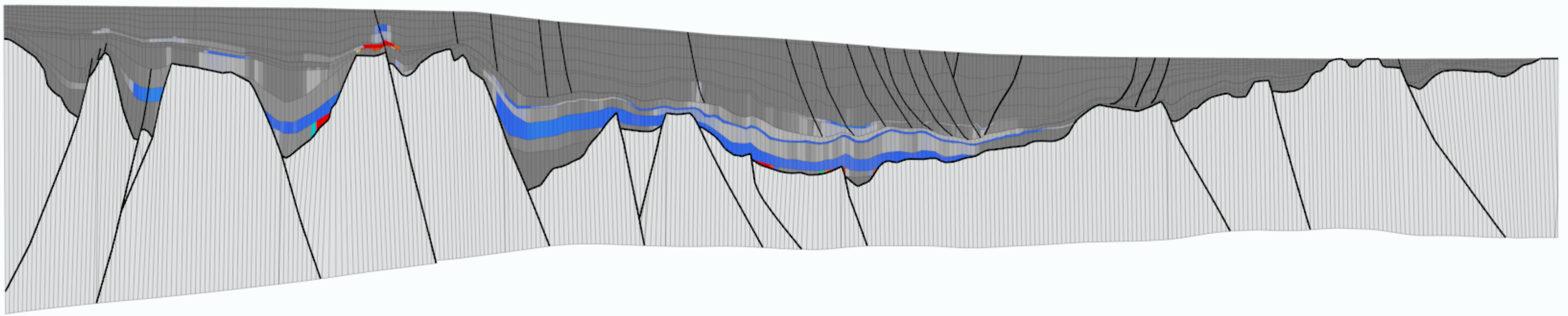
Hydrocarbon **Saturation**

44 Ma

LITHOLOGY



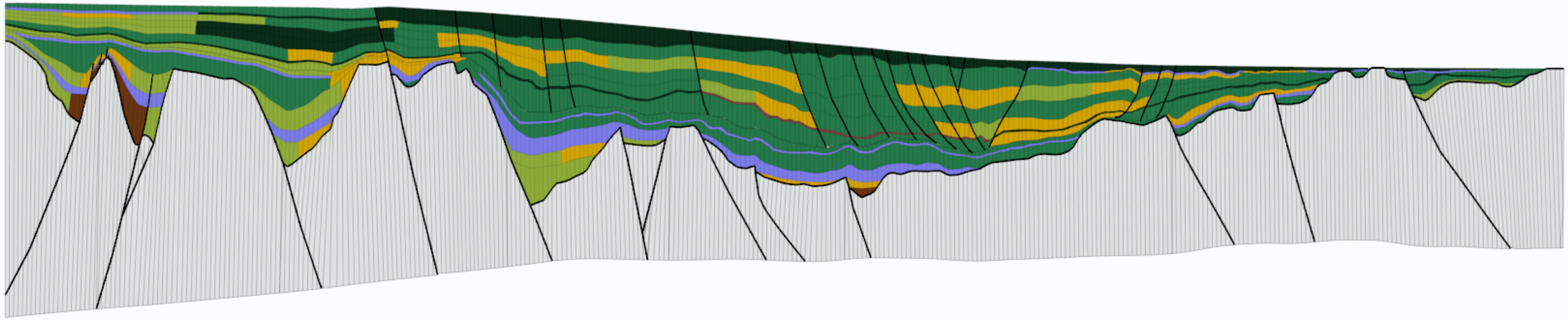
TRANSPARENT FAULTS



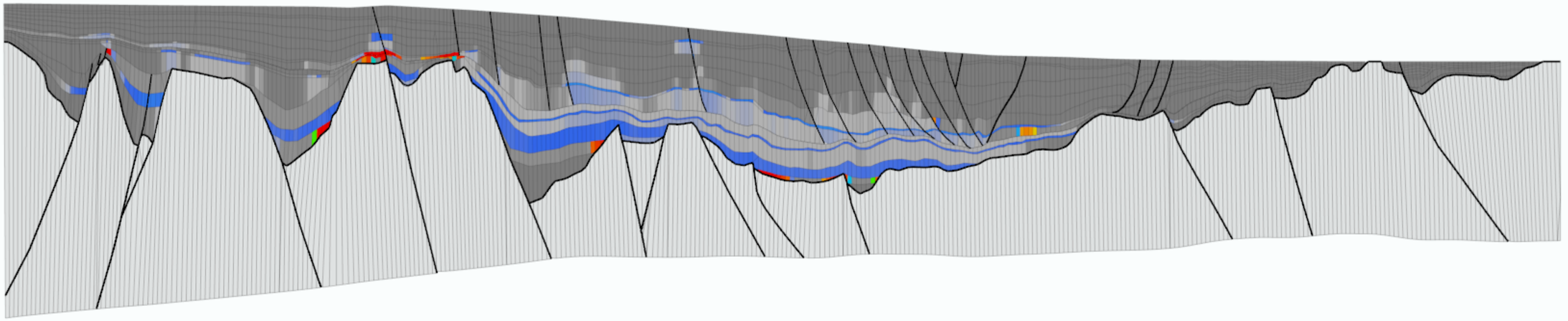
Hydrocarbon **Saturation**

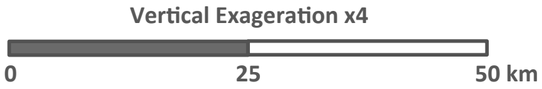
39 Ma

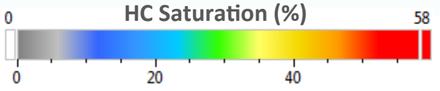
LITHOLOGY



TRANSPARENT FAULTS



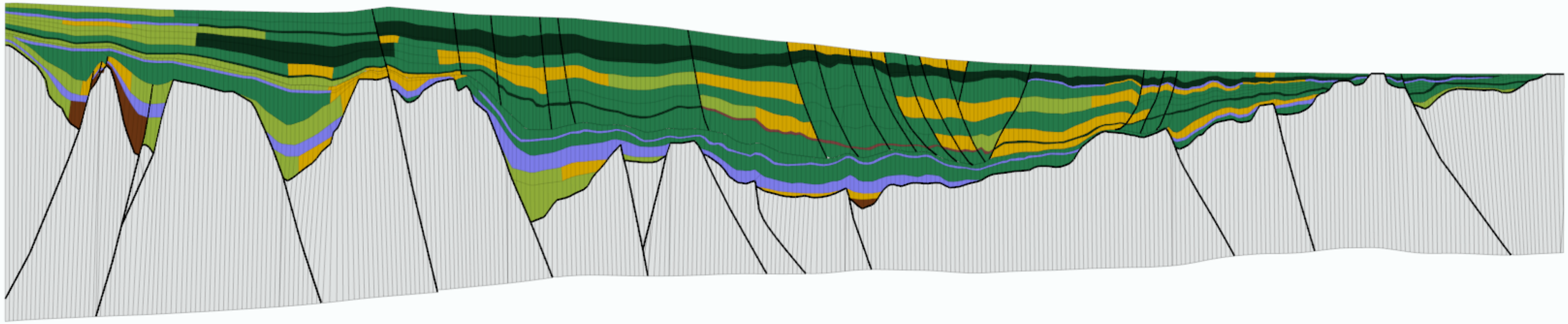




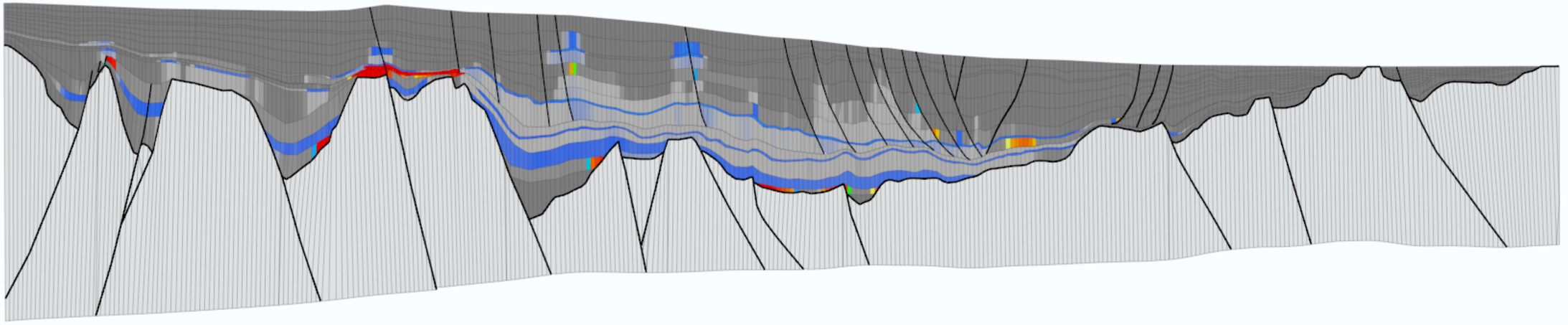
Hydrocarbon **Saturation**

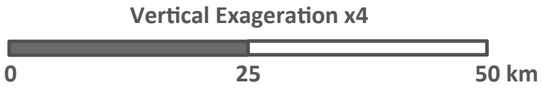
34 Ma

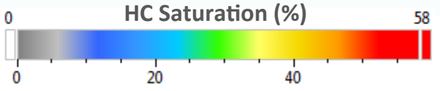
LITHOLOGY



TRANSPARENT FAULTS



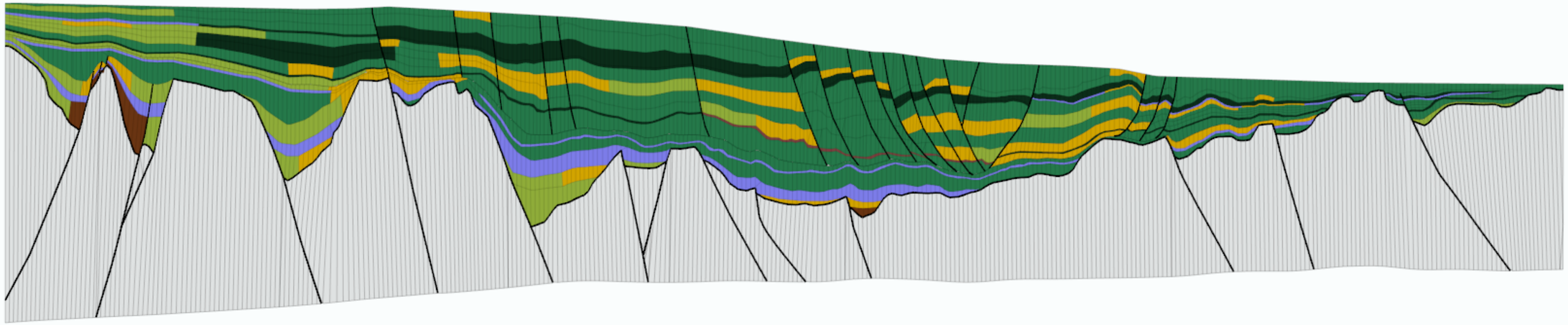




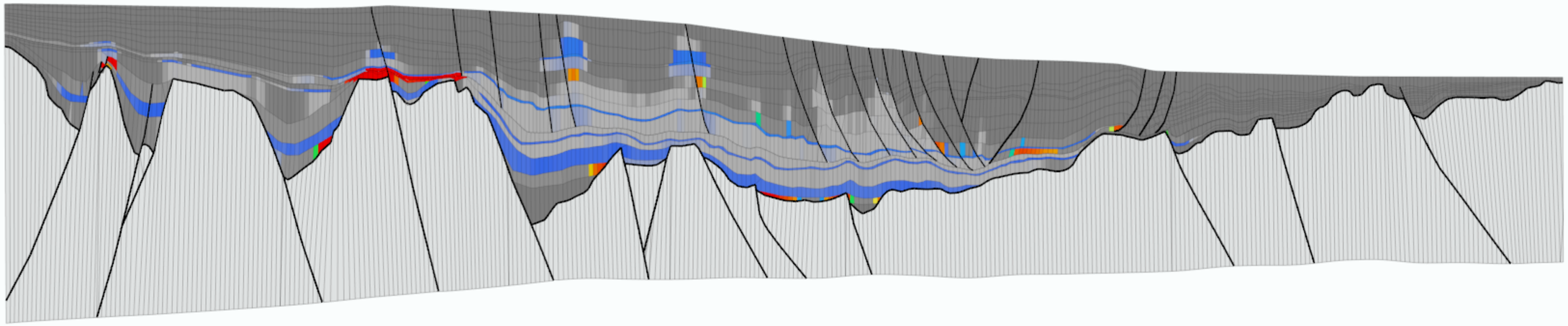
Hydrocarbon **Saturation**

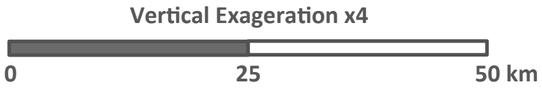
30 Ma

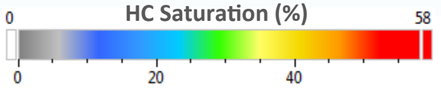
LITHOLOGY



TRANSPARENT FAULTS



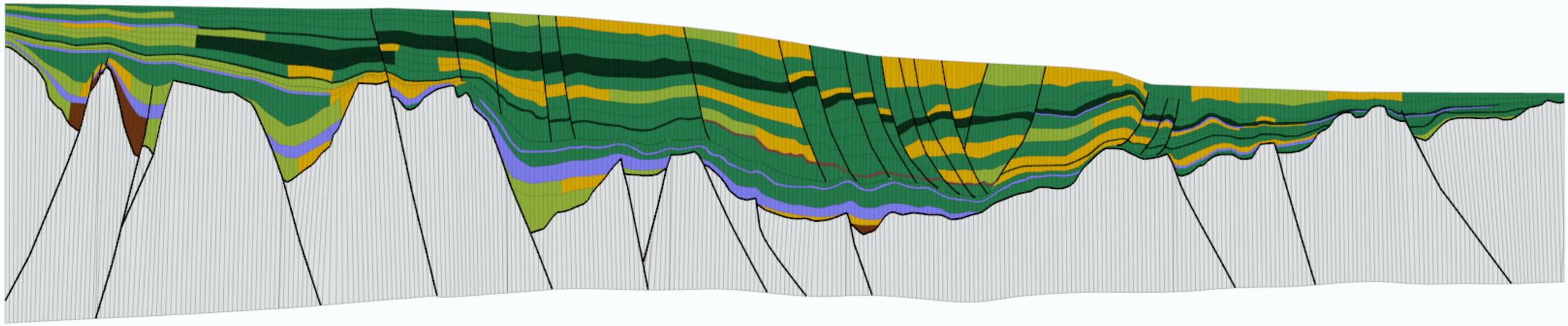




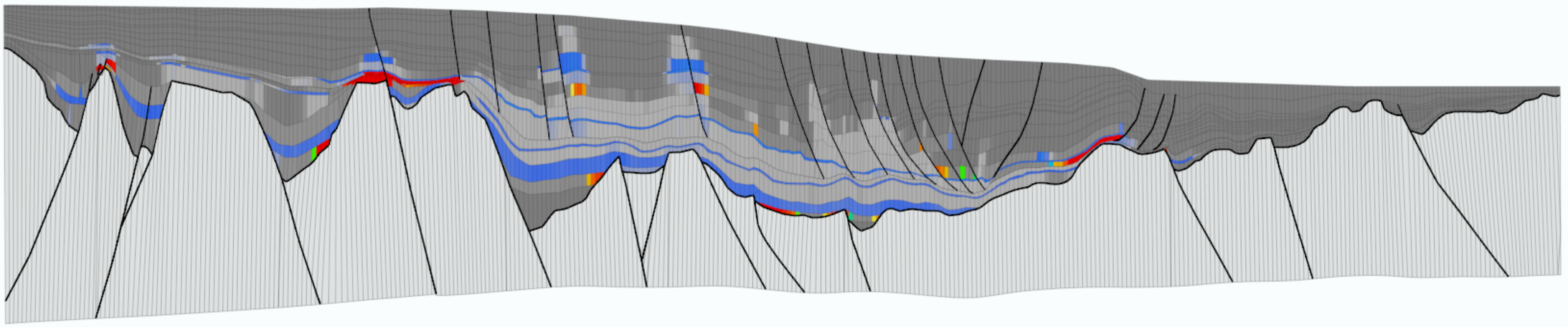
Hydrocarbon **Saturation**

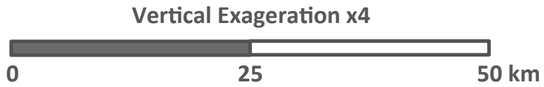
27 Ma

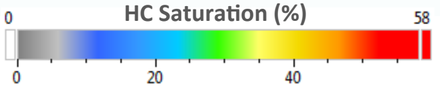
LITHOLOGY



TRANSPARENT FAULTS



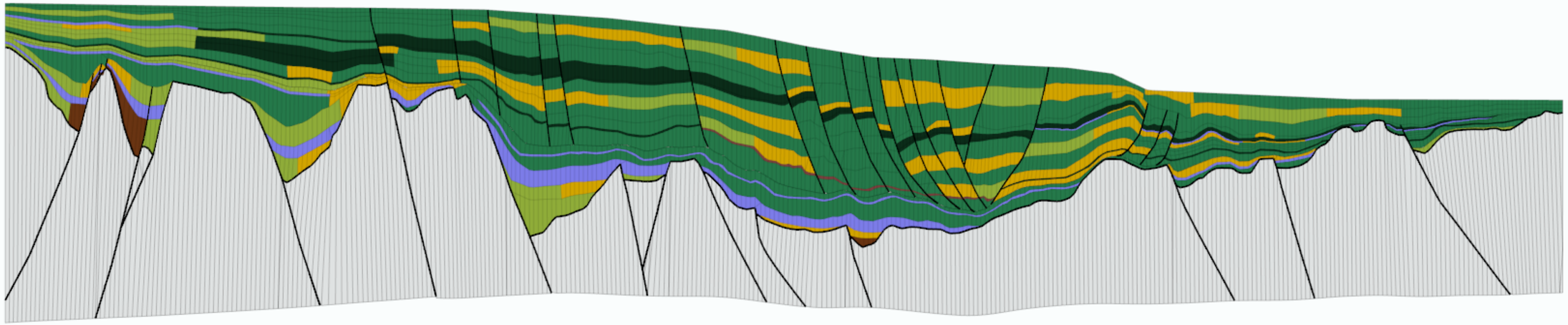




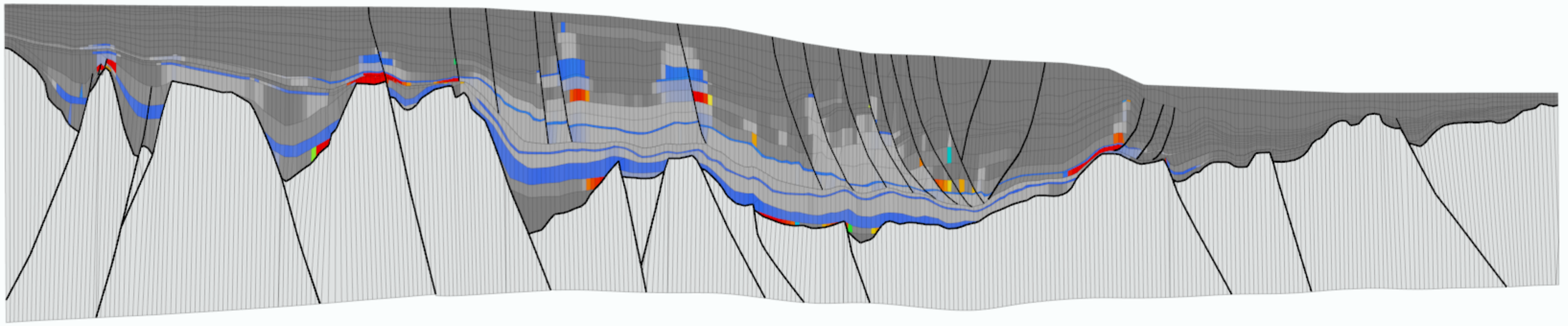
Hydrocarbon **Saturation**

24 Ma

LITHOLOGY



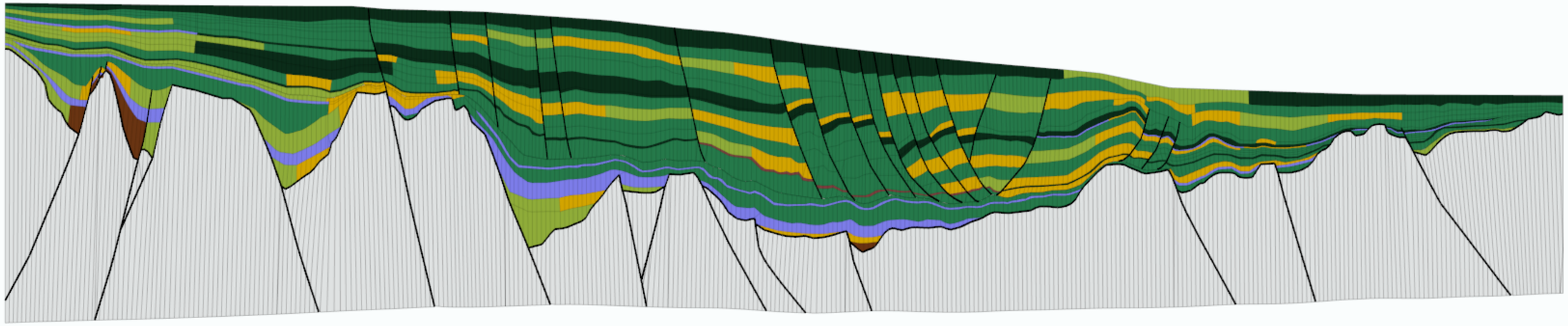
TRANSPARENT FAULTS



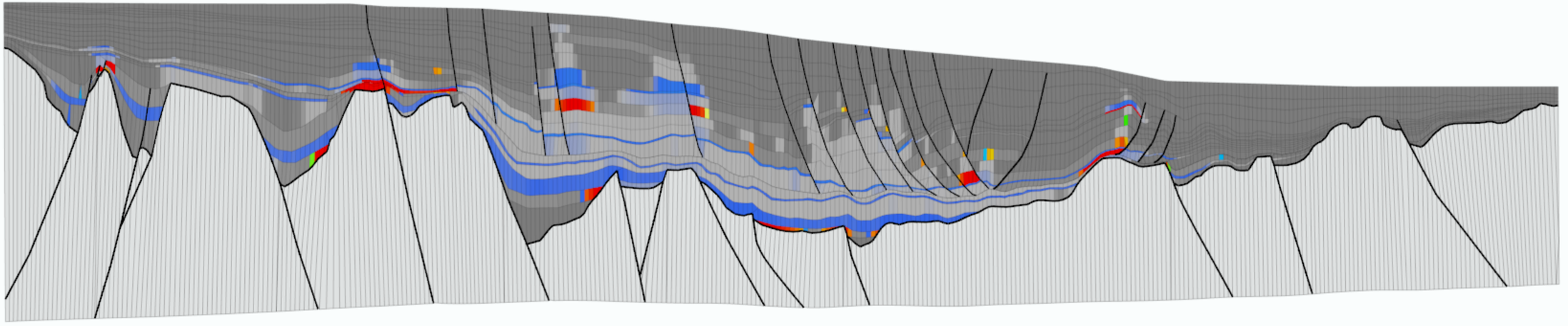
Hydrocarbon **Saturation**

17 Ma

LITHOLOGY



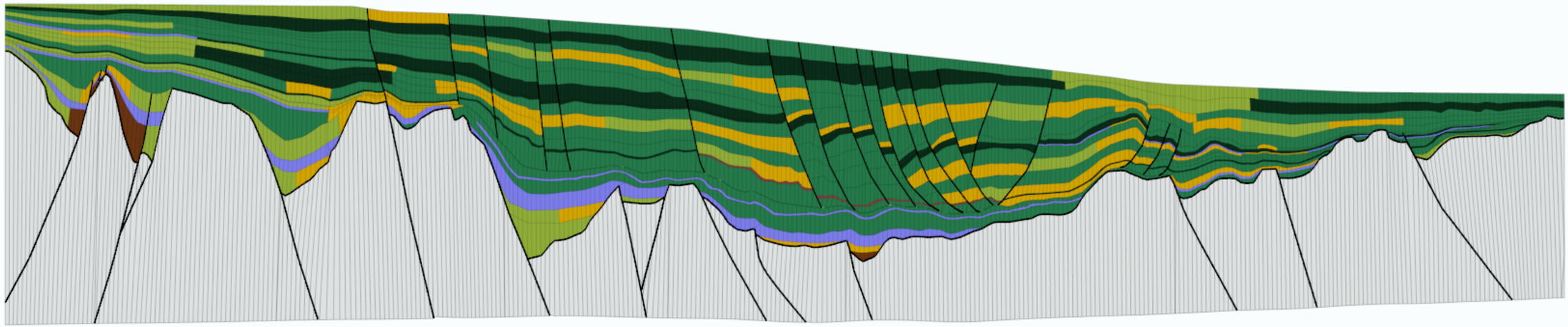
TRANSPARENT FAULTS



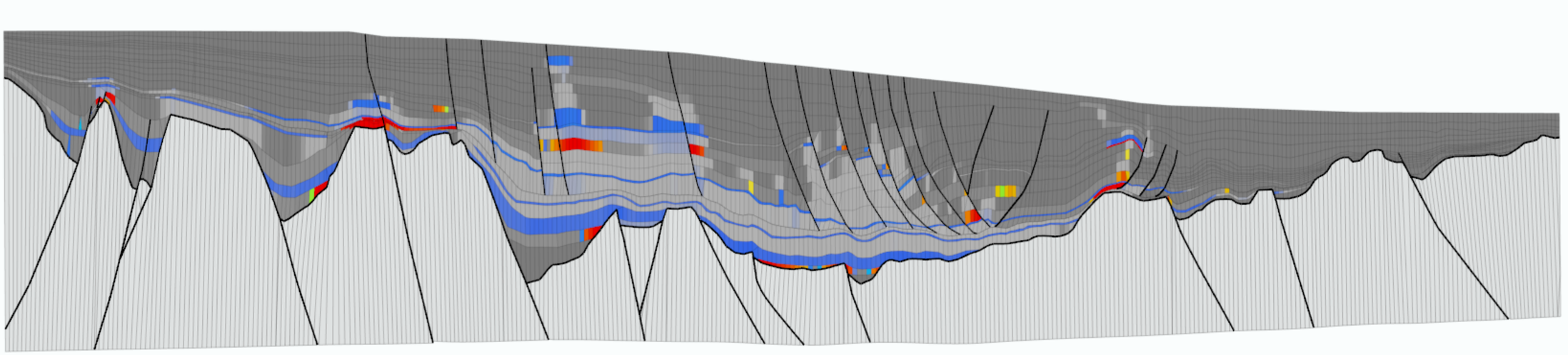
Hydrocarbon **Saturation**

10 Ma

LITHOLOGY



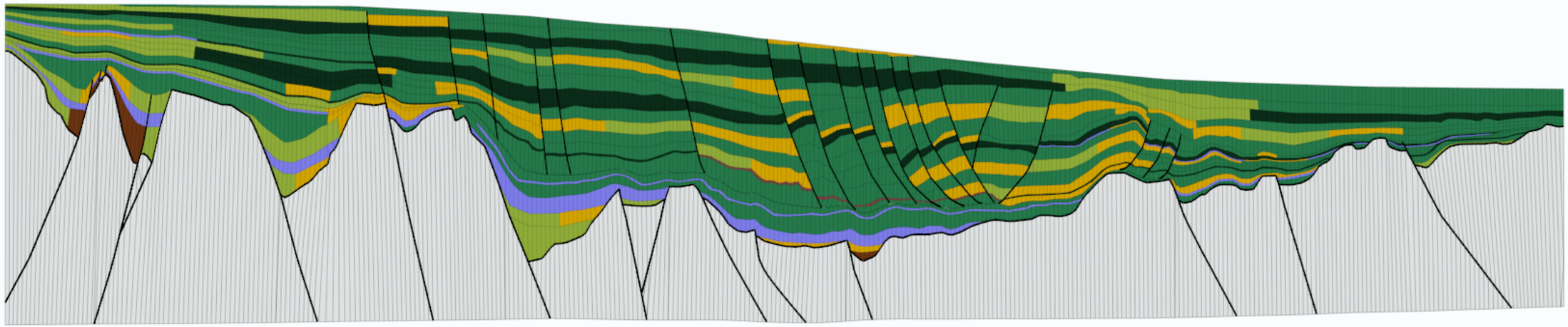
TRANSPARENT FAULTS



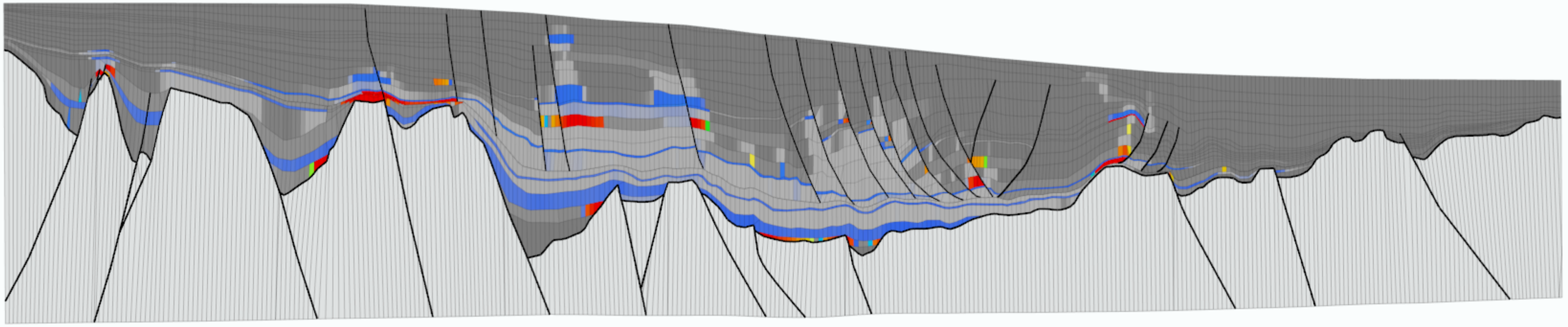
Hydrocarbon **Saturation**

8 Ma

LITHOLOGY



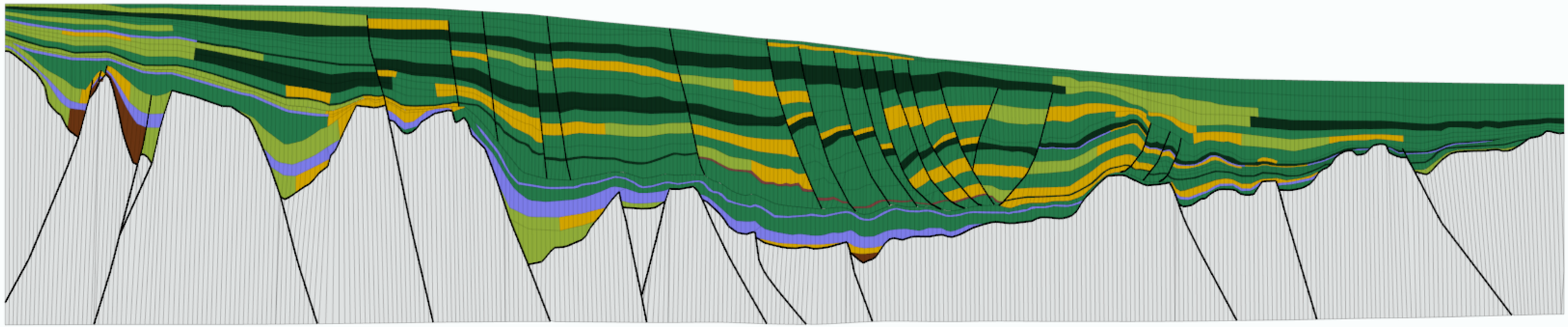
TRANSPARENT FAULTS



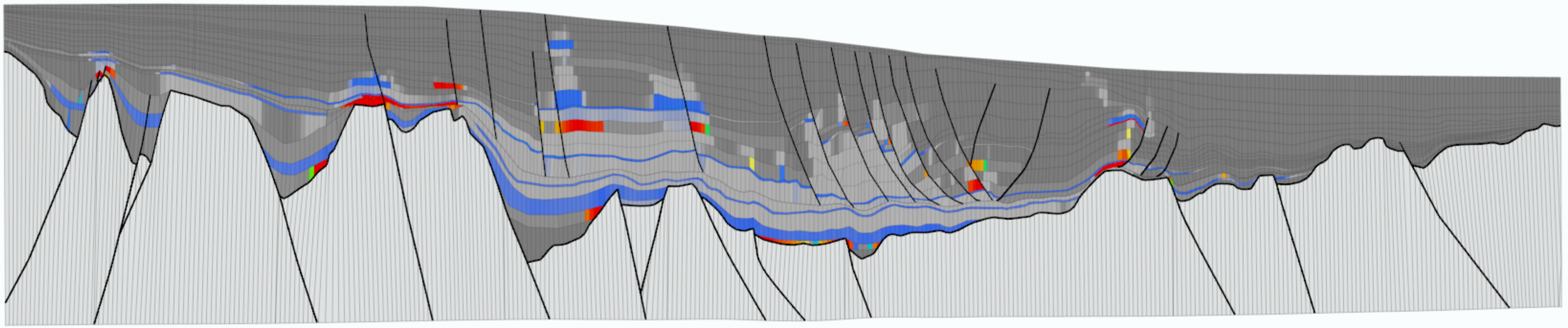
Hydrocarbon **Saturation**

6.5 Ma

LITHOLOGY



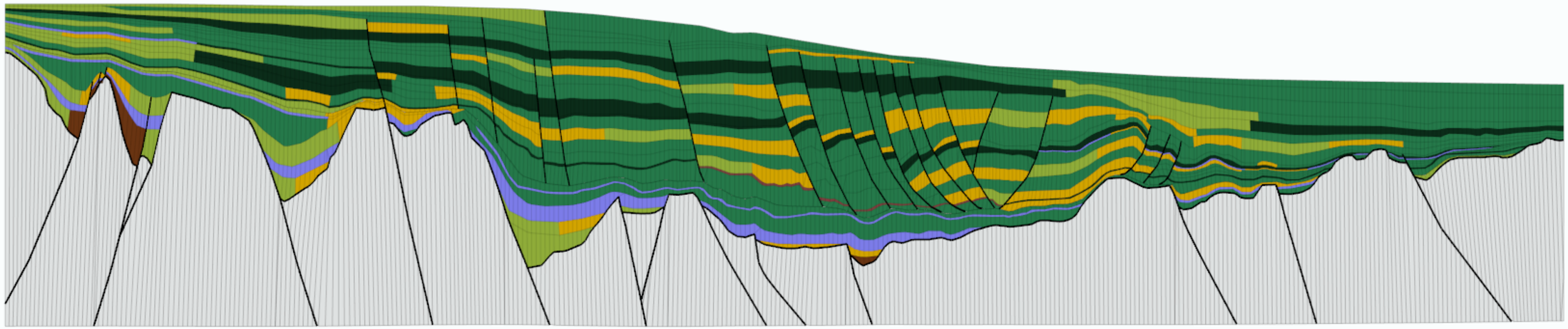
TRANSPARENT FAULTS



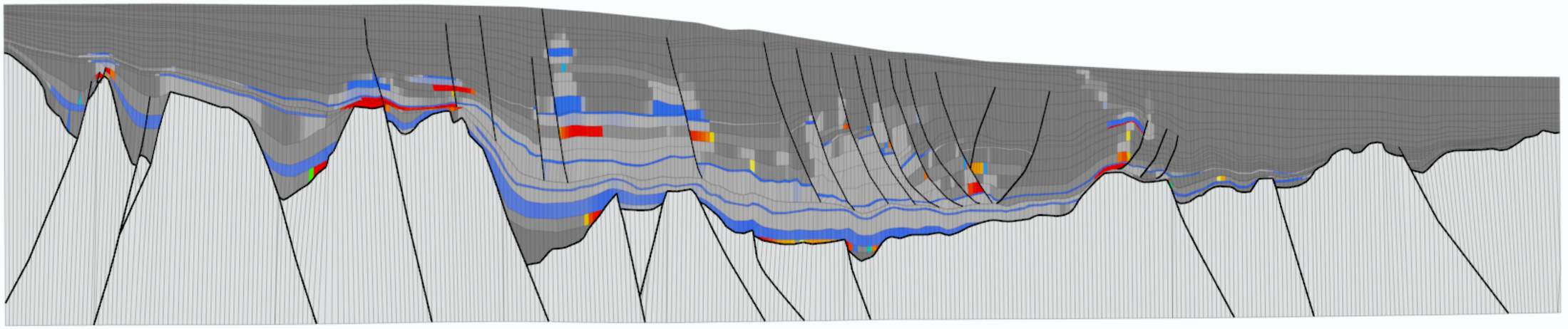
Hydrocarbon **Saturation**

3 Ma

LITHOLOGY



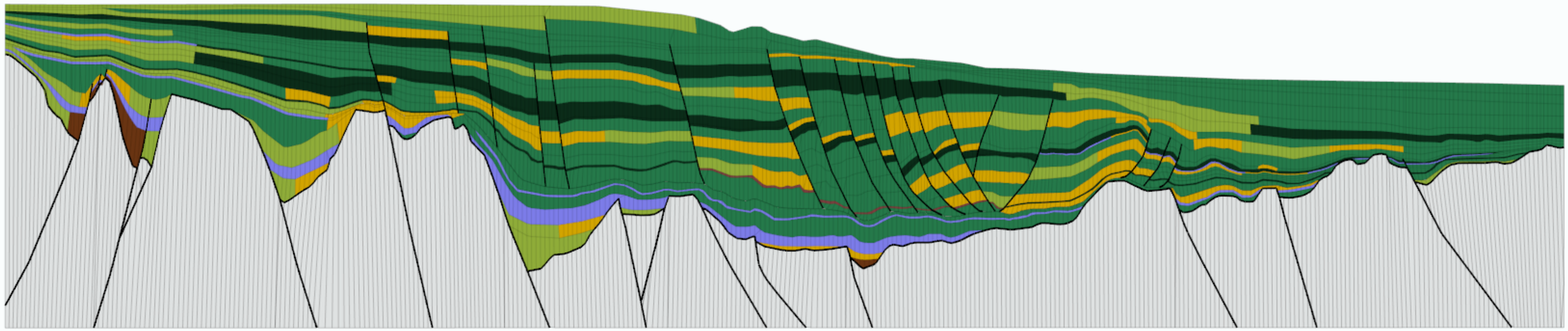
TRANSPARENT FAULTS



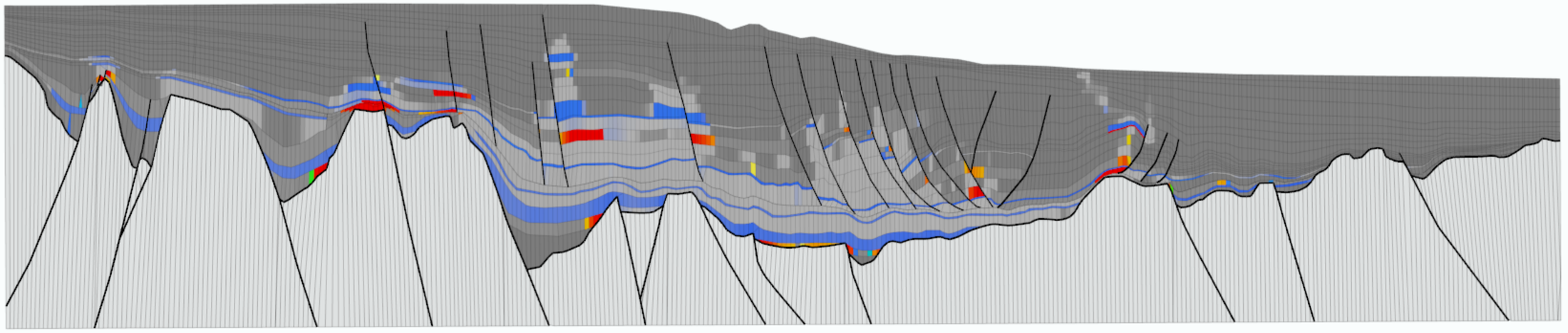
Hydrocarbon **Saturation**

0 Ma

LITHOLOGY



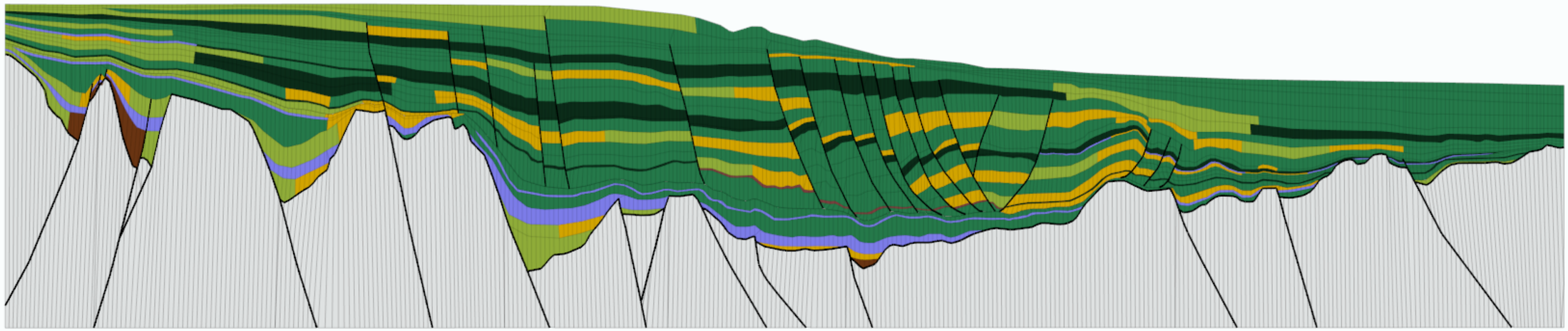
TRANSPARENT FAULTS



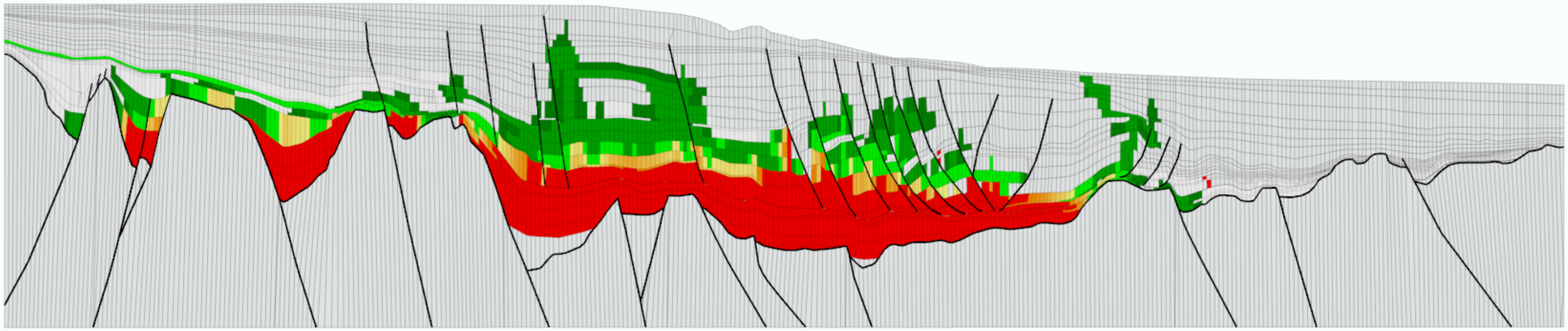
Hydrocarbon **GOR**

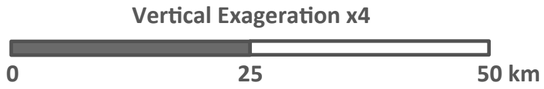
0 Ma

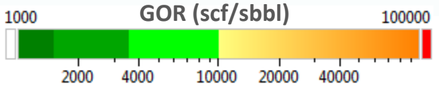
LITHOLOGY



TRANSPARENT FAULTS



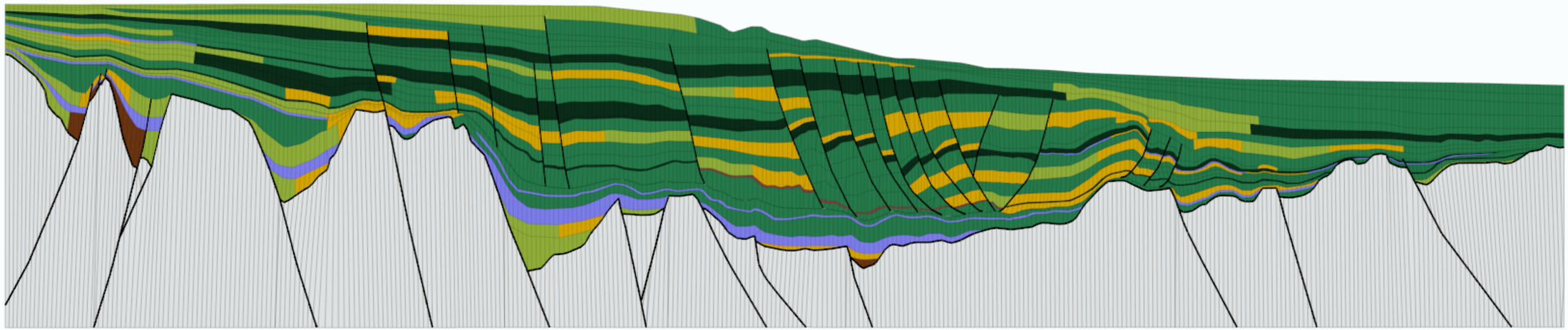




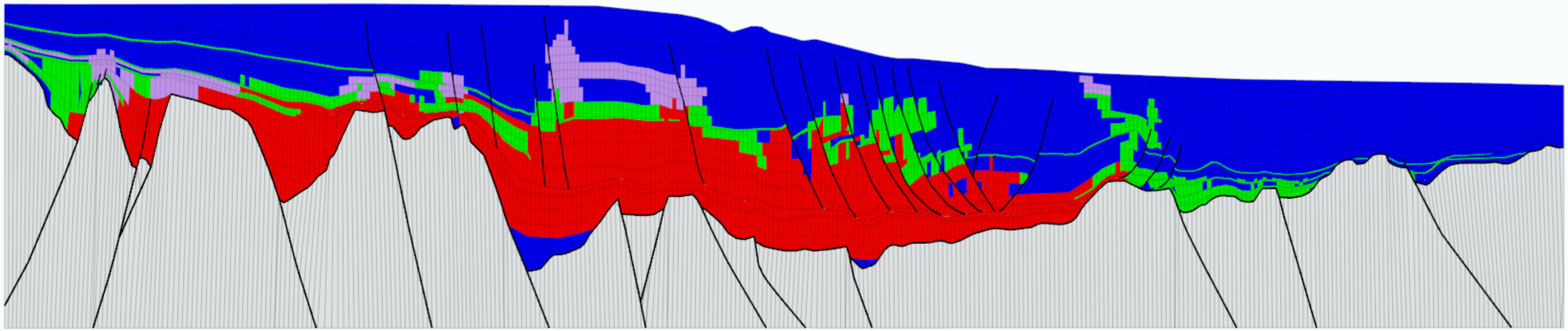
Hydrocarbon **Phases**

0 Ma

LITHOLOGY



TRANSPARENT FAULTS



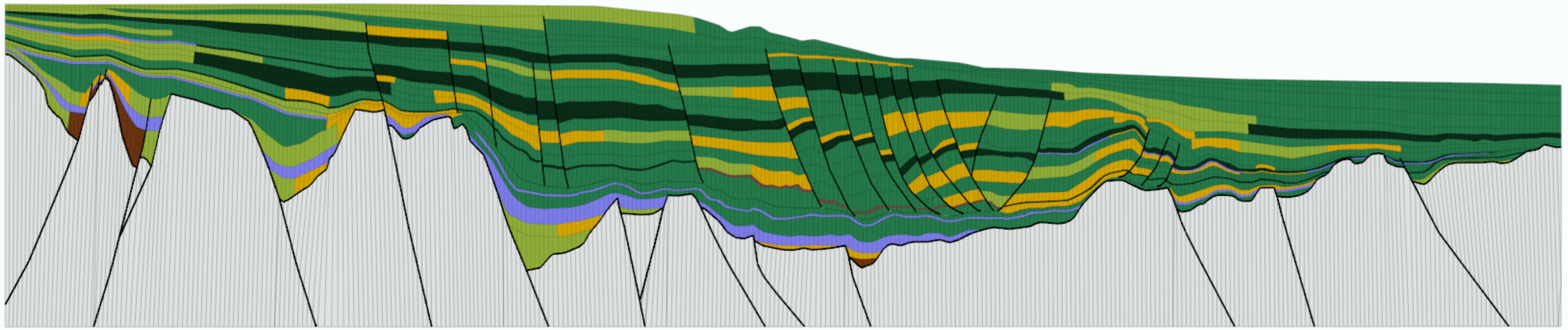
Vertical Exageration x4

0 **25** **50 km**

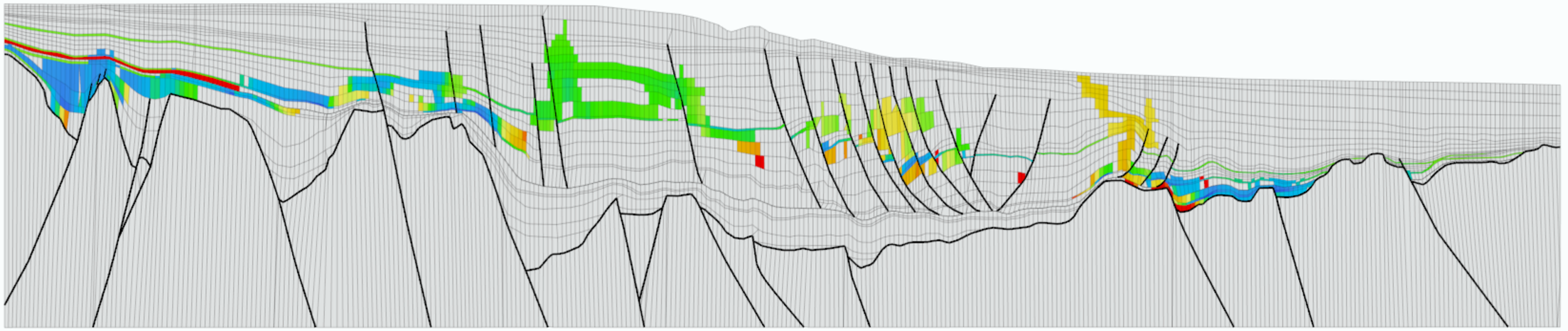
Hydrocarbon **API**

0 Ma

LITHOLOGY



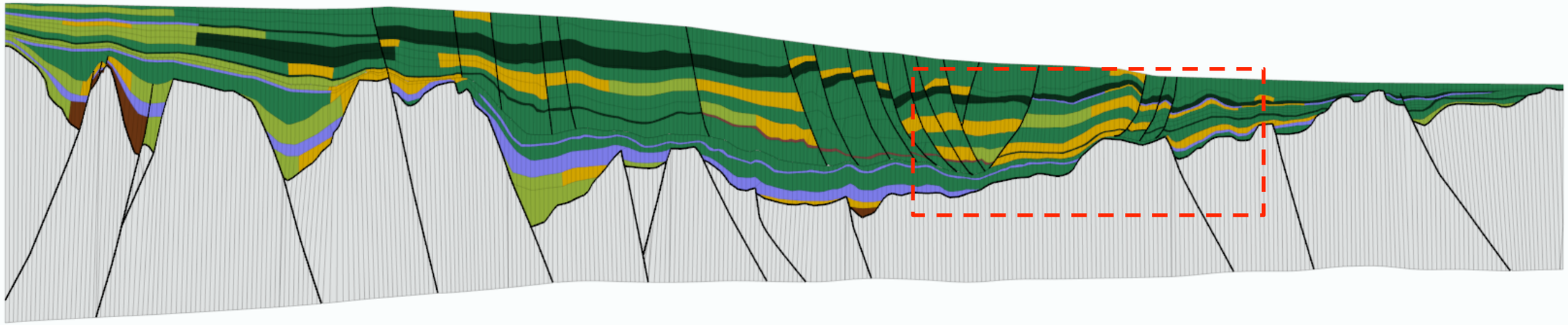
TRANSPARENT FAULTS



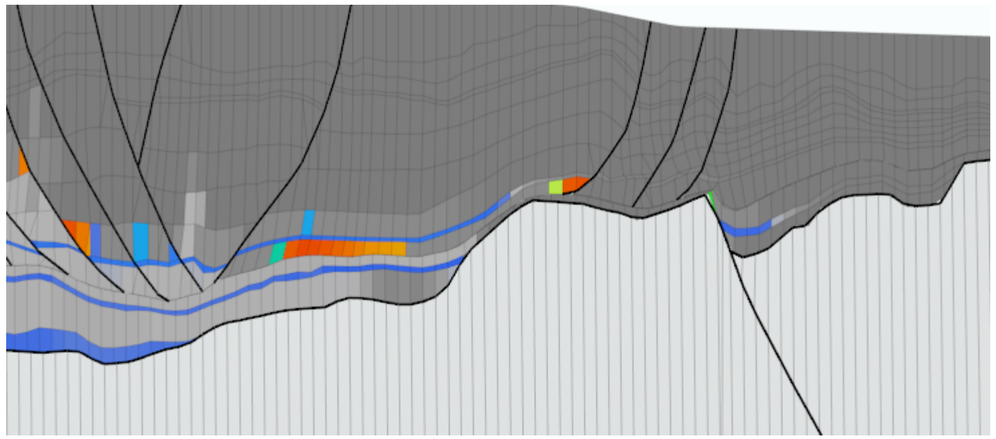
Hydrocarbon **Saturation** – Migration Scenarios

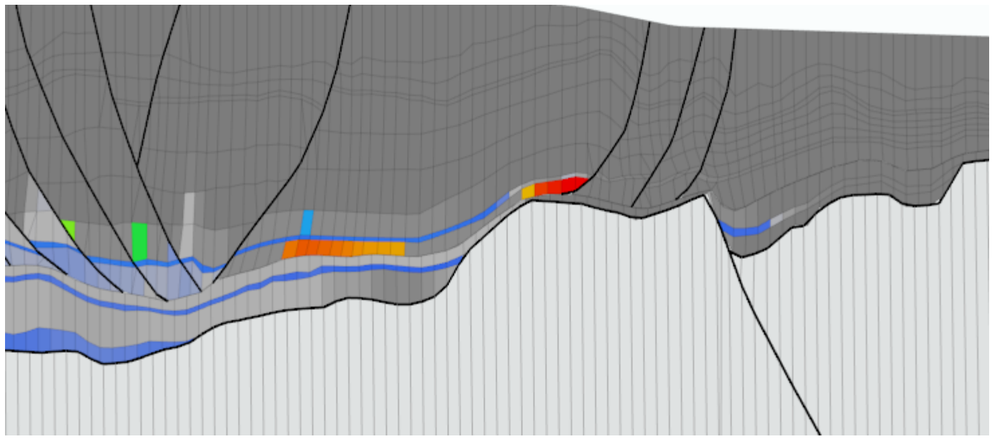
30 Ma

LITHOLOGY



TRANSPARENT FAULTS





IMPERMEABLE FAULTS

Vertical Exageration x4

0 12.5 25 km

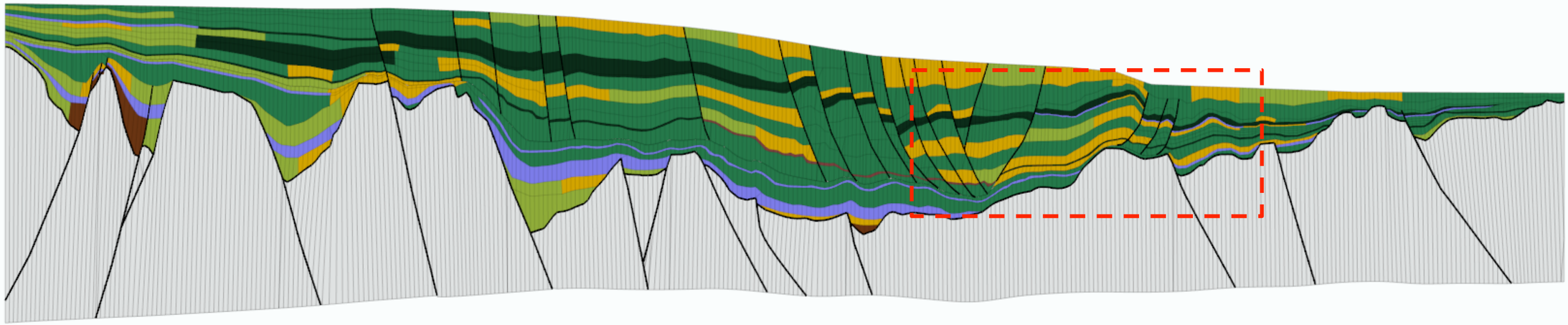
HC Saturation (%)

0 20 40 58

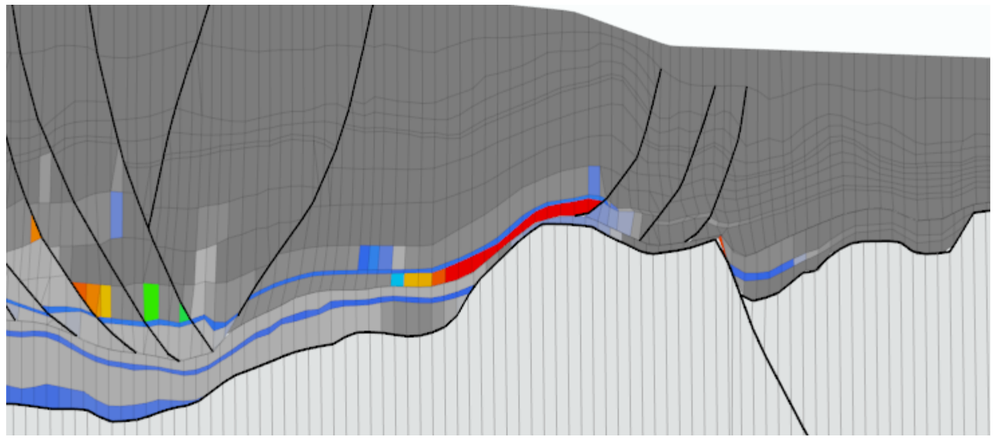
Hydrocarbon **Saturation** – Migration Scenarios

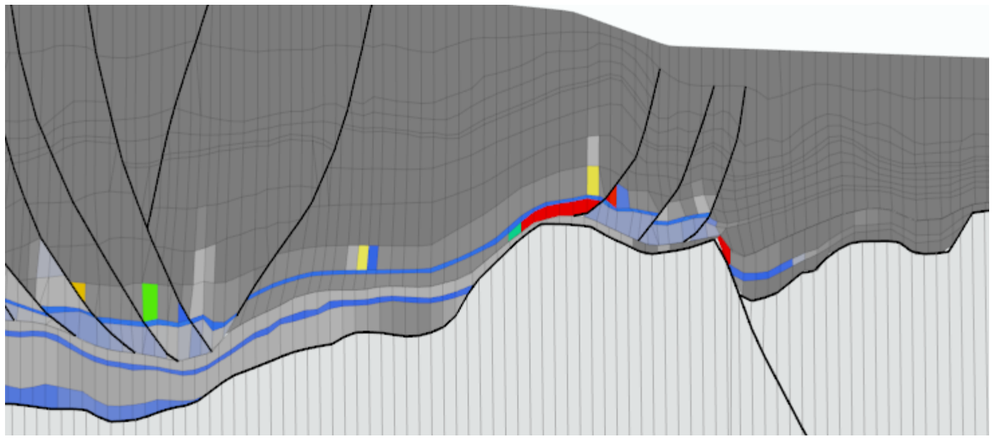
27 Ma

LITHOLOGY



TRANSPARENT FAULTS





IMPERMEABLE FAULTS

Vertical Exageration x4

0 12.5 25 km

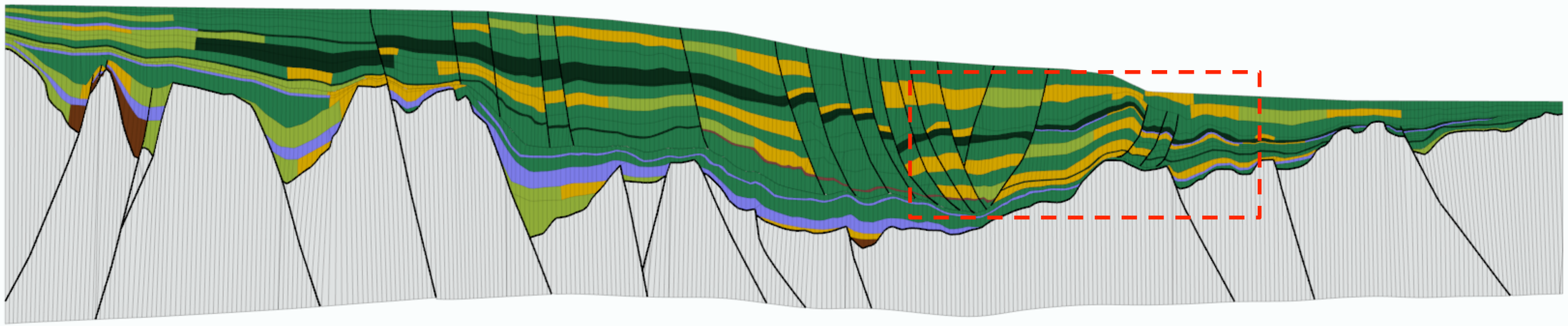
HC Saturation (%)

0 20 40 58

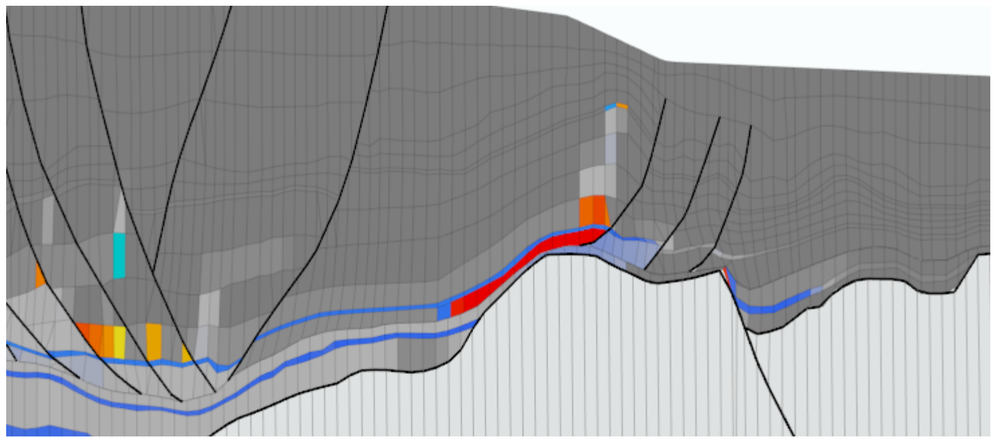
Hydrocarbon **Saturation** – Migration Scenarios

24 Ma

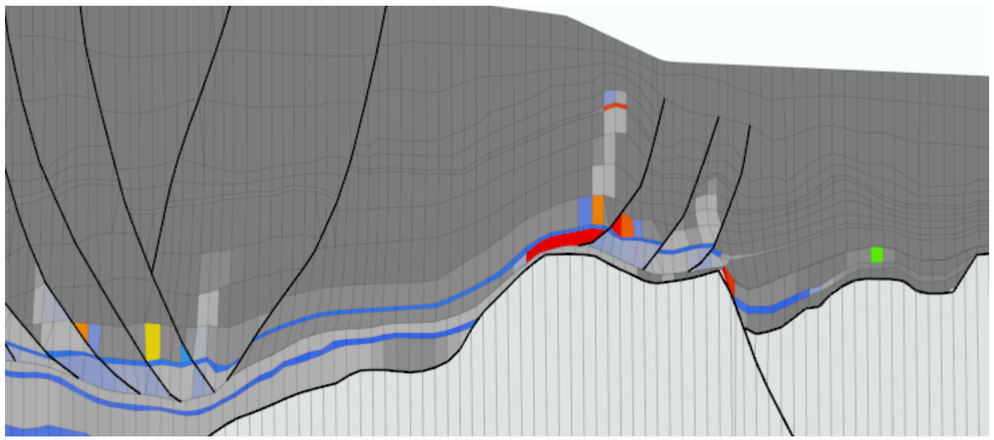
LITHOLOGY



TRANSPARENT FAULTS



IMPERMEABLE FAULTS



Vertical Exageration x4

0 12.5 25 km

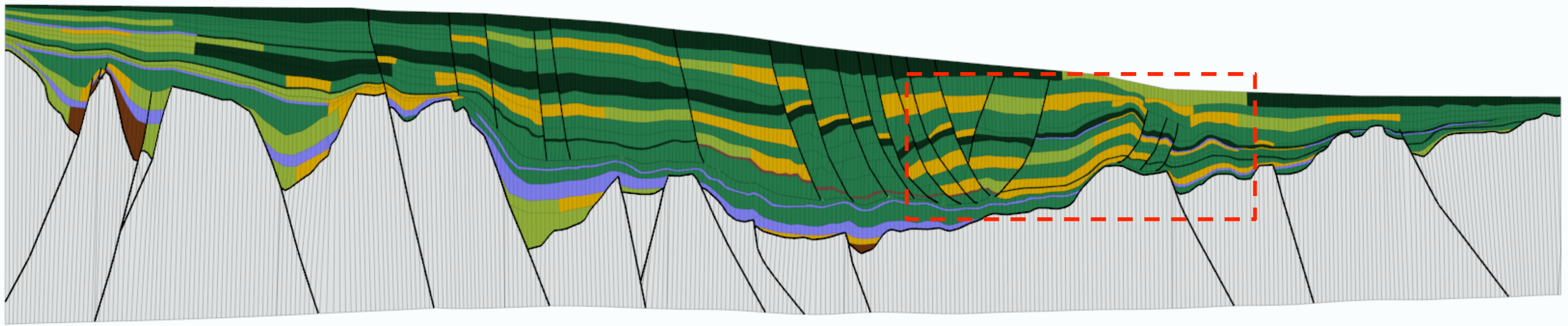
HC Saturation (%)

0 20 40 58

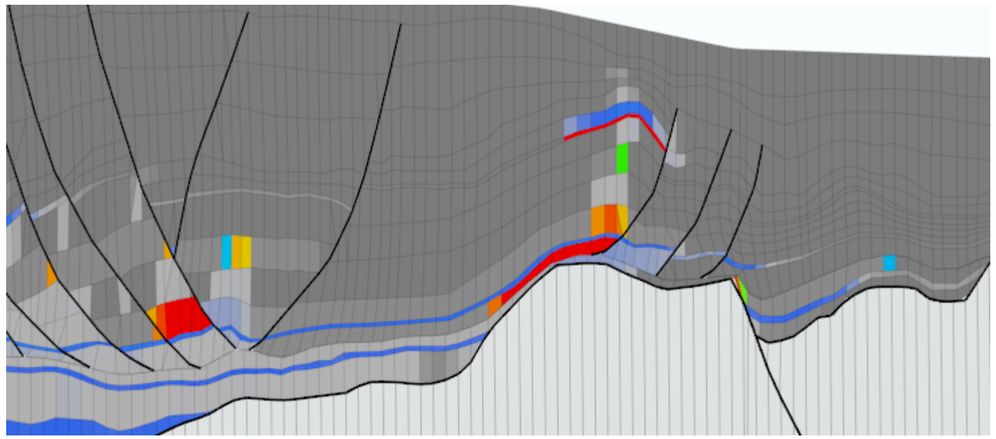
Hydrocarbon **Saturation** – Migration Scenarios

17 Ma

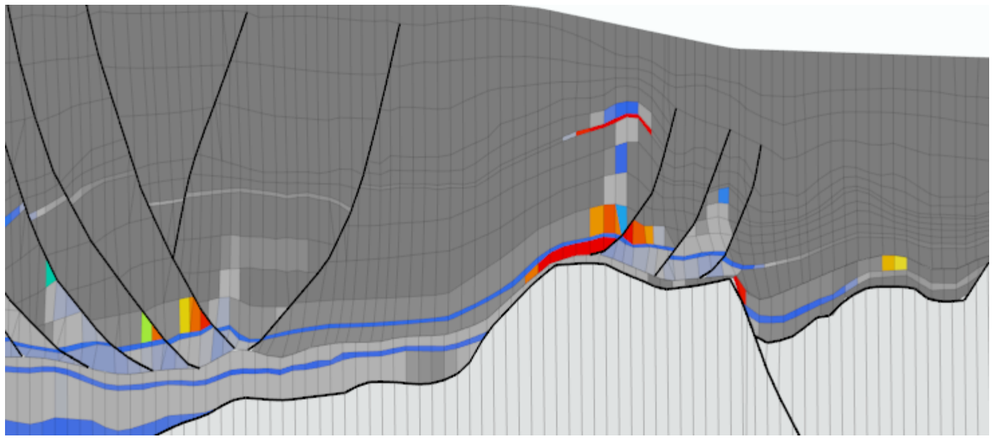
LITHOLOGY



TRANSPARENT FAULTS



IMPERMEABLE FAULTS



Vertical Exageration x4

0 12.5 25 km

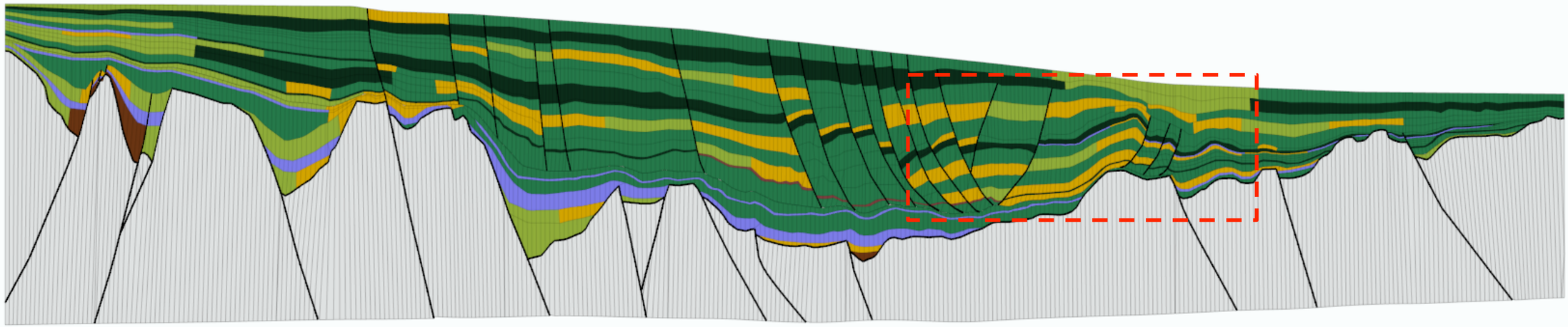
HC Saturation (%)

0 20 40 58

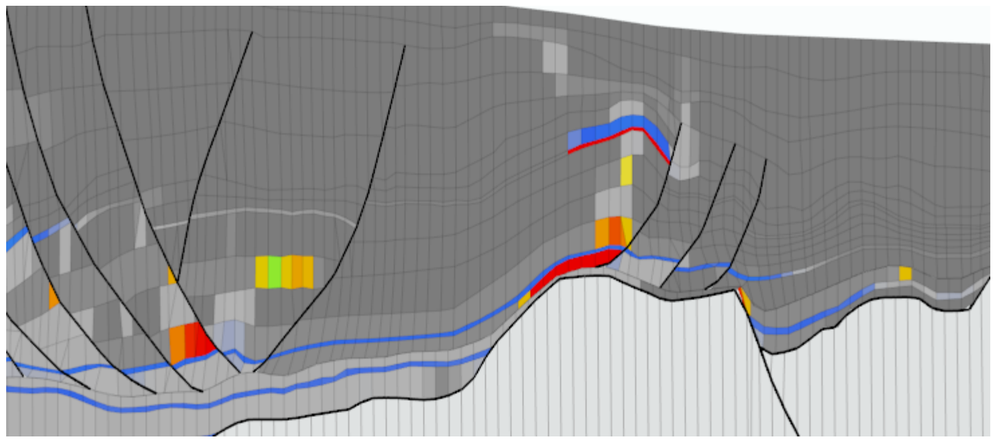
Hydrocarbon **Saturation** – Migration Scenarios

10 Ma

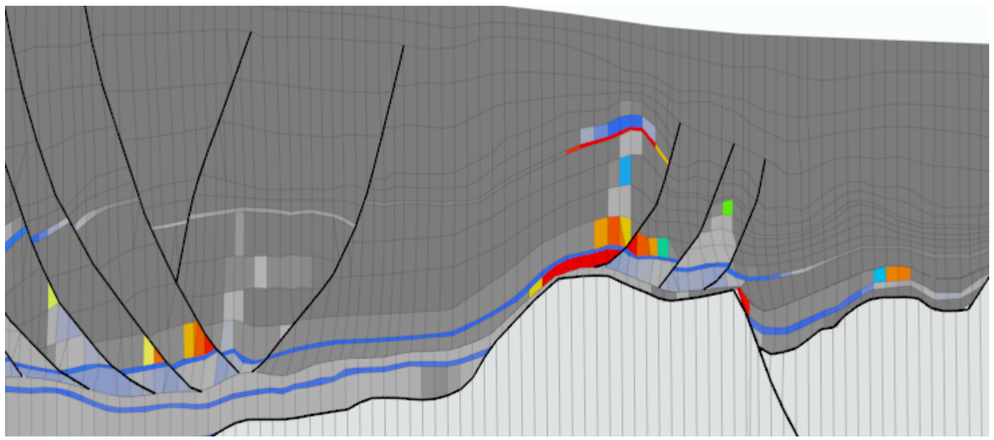
LITHOLOGY



TRANSPARENT FAULTS



IMPERMEABLE FAULTS



Vertical Exageration x4

0 12.5 25 km

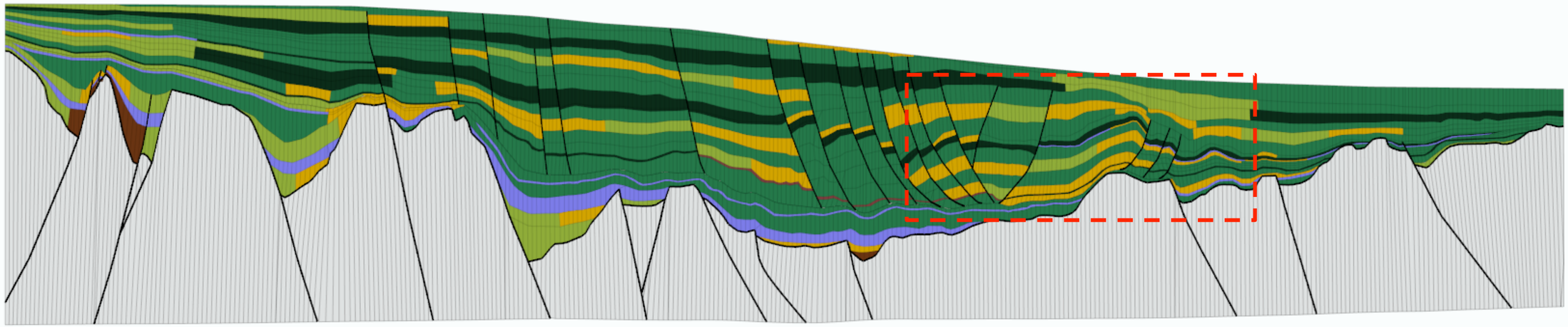
HC Saturation (%)

0 20 40 58

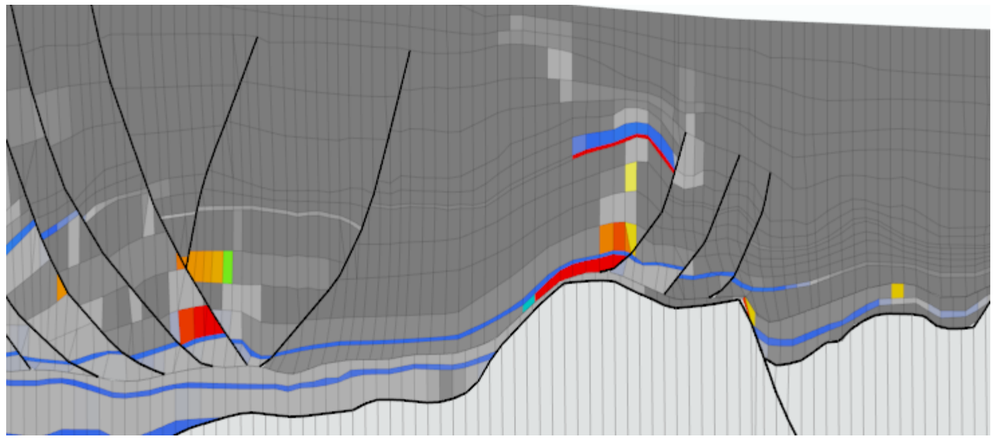
Hydrocarbon **Saturation** – Migration Scenarios

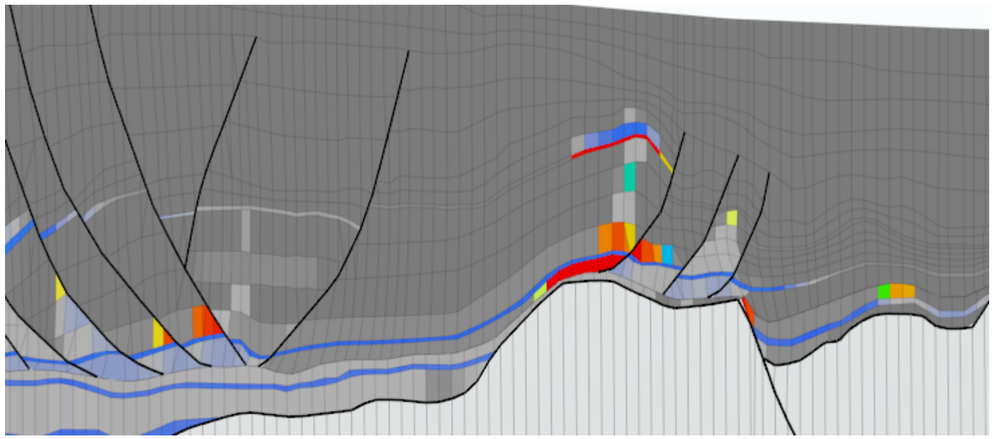
8 Ma

LITHOLOGY



TRANSPARENT FAULTS





IMPERMEABLE FAULTS

Vertical Exageration x4

0 12.5 25 km

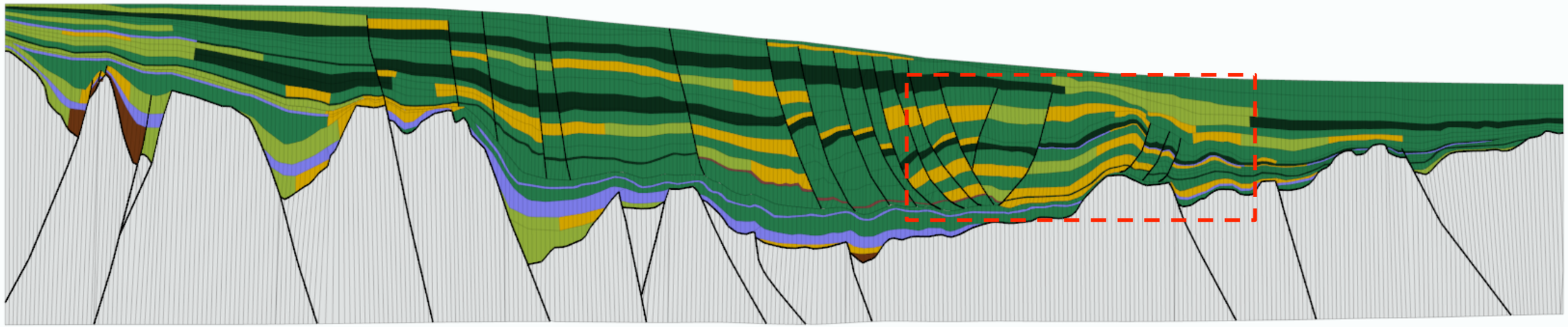
HC Saturation (%)

0 20 40 58

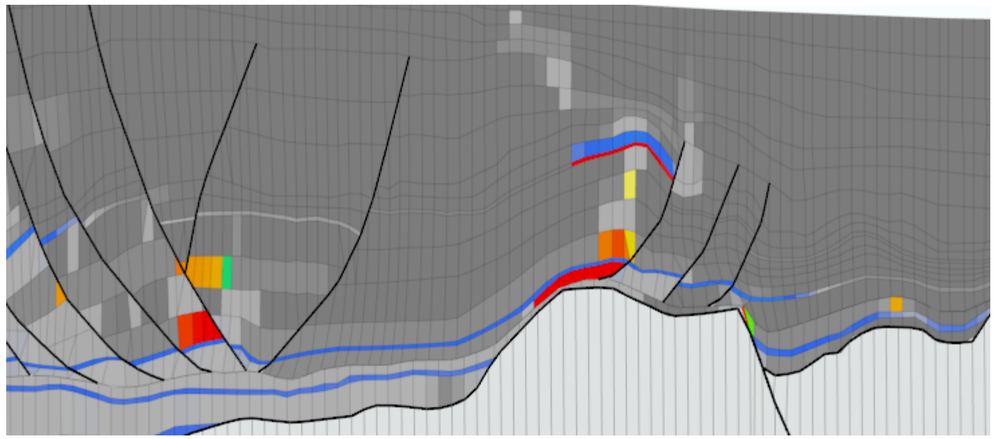
Hydrocarbon **Saturation** – Migration Scenarios

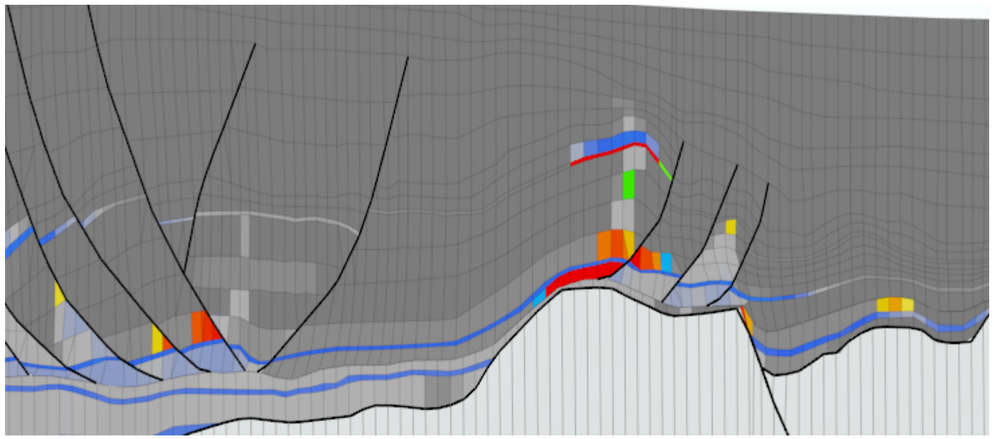
6.5 Ma

LITHOLOGY



TRANSPARENT FAULTS





IMPERMEABLE FAULTS

Vertical Exageration x4

0 12.5 25 km

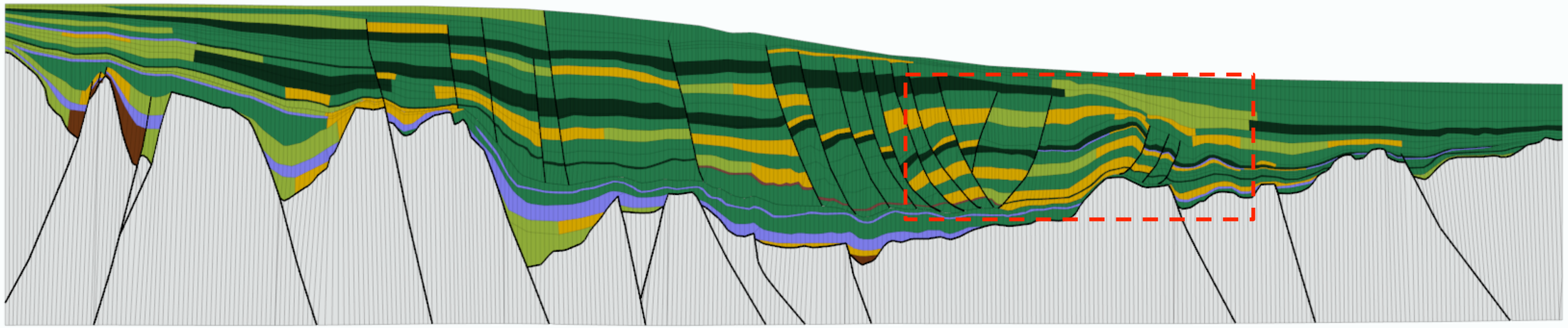
HC Saturation (%)

0 20 40 58

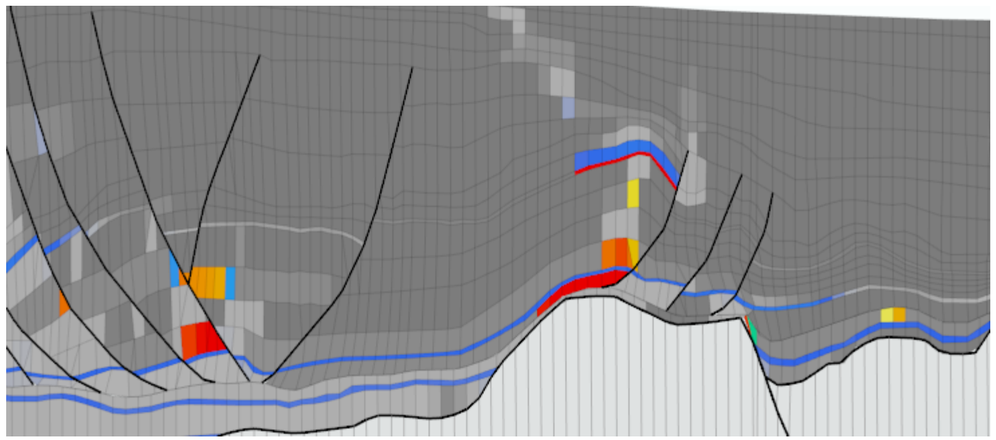
Hydrocarbon **Saturation** – Migration Scenarios

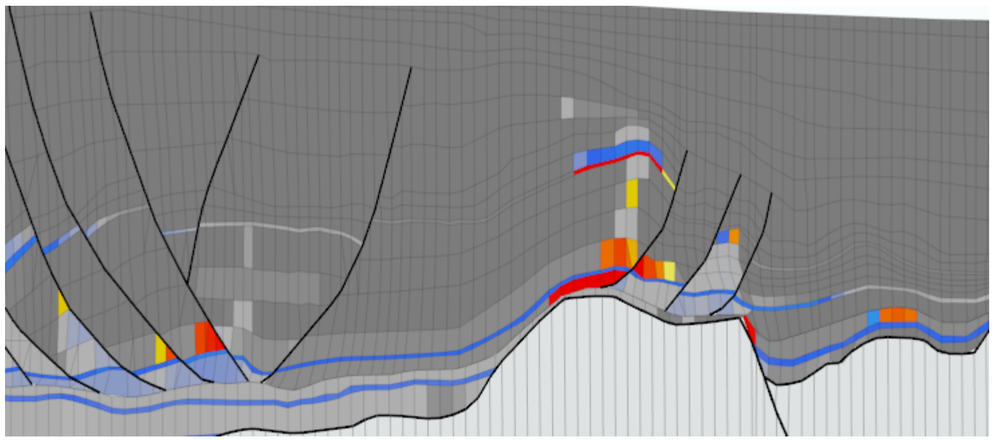
3 Ma

LITHOLOGY



TRANSPARENT FAULTS





IMPERMEABLE FAULTS

Vertical Exageration x4

0 12.5 25 km

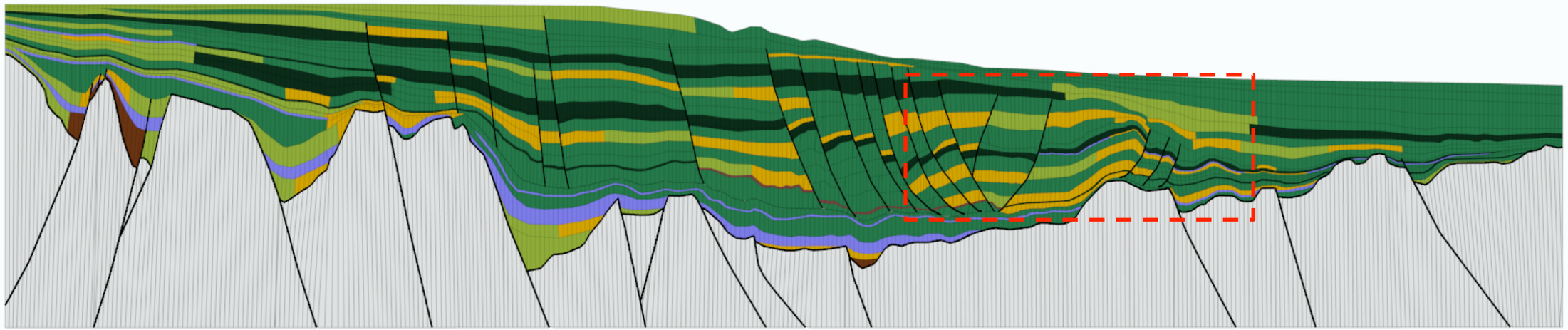
HC Saturation (%)

0 20 40 58

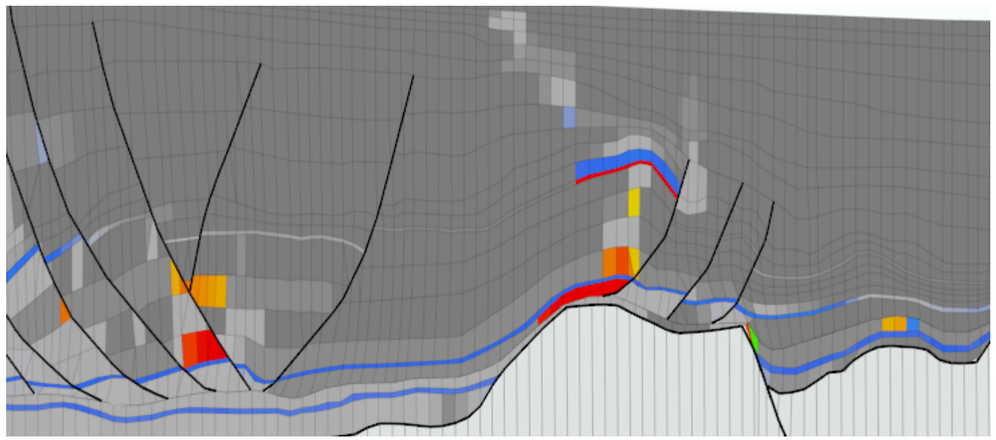
Hydrocarbon **Saturation** – Migration Scenarios

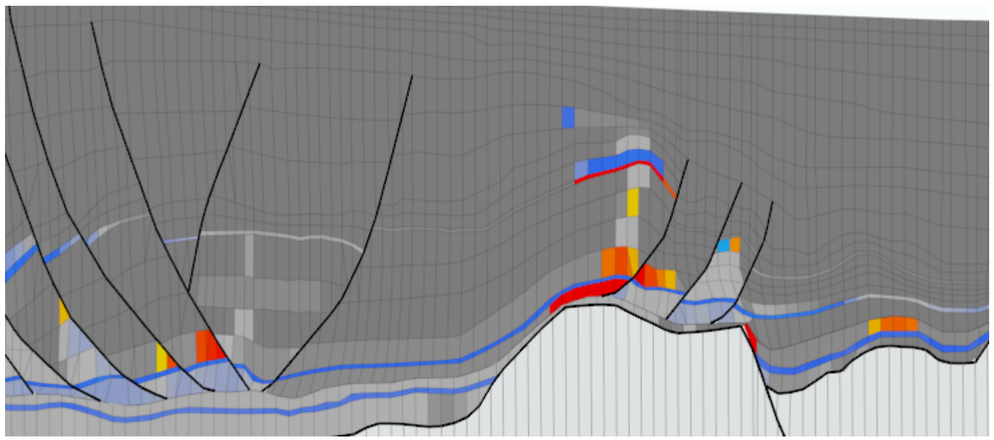
0 Ma

LITHOLOGY



TRANSPARENT FAULTS





IMPERMEABLE FAULTS

Vertical Exageration x4

0 12.5 25 km

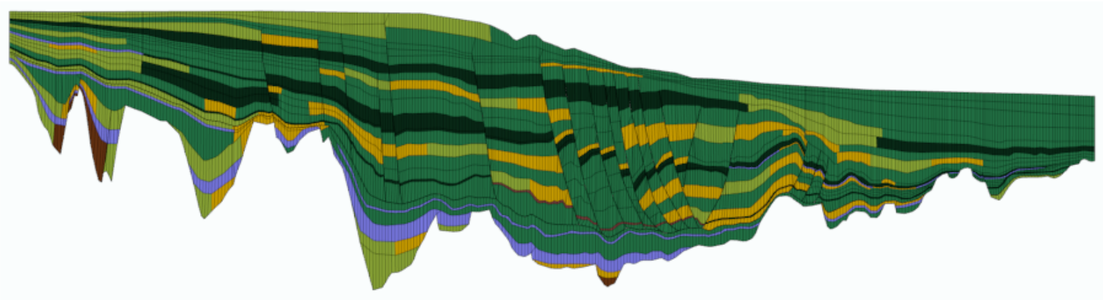
HC Saturation (%)

0 20 40 58

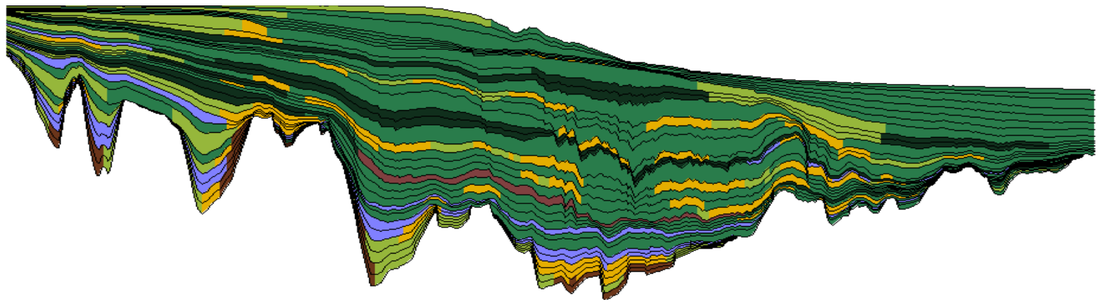
CONCLUSION

Conclusions

- A **new kinematic tool** to increase basin models structural complexity – honoring structural geology while answering basin modeling constraints
- To lift the risk on source rock maturity, pressure distribution and HC generation, migration & trapping related to faults and fold tectonics
- Several scenarios have been tested to characterize the potential plays of the area but more could be done:
  - Permeable faults for example



VS



UNSTRUCTURED BASIN MODELING

CLASSIC BASIN MODELING