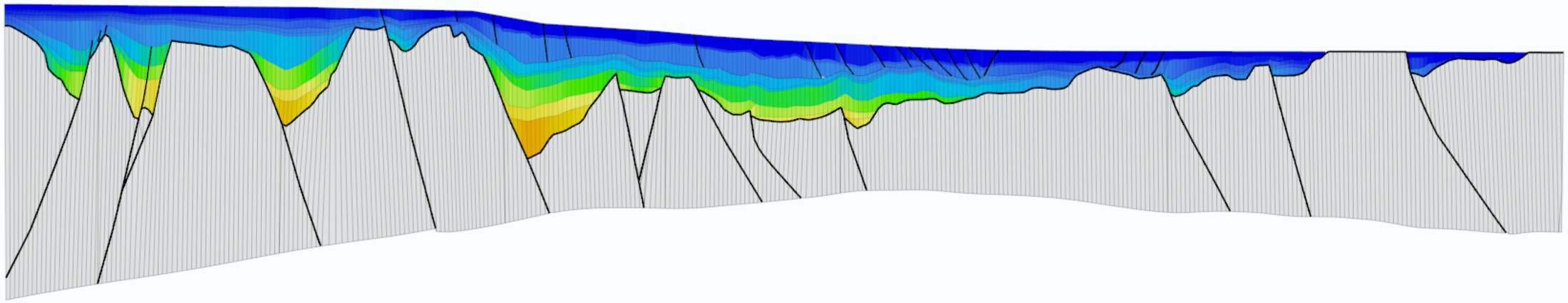
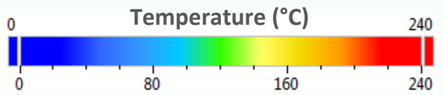
Thermal Regime

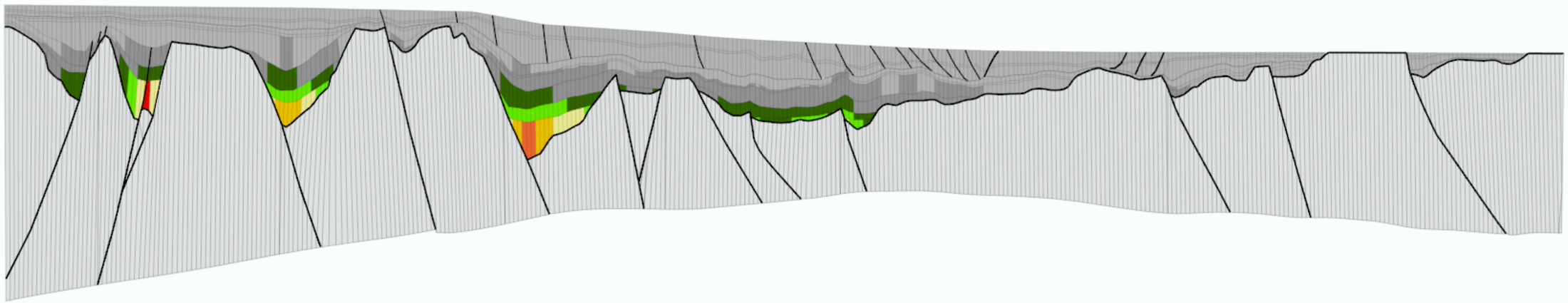
51 Ma

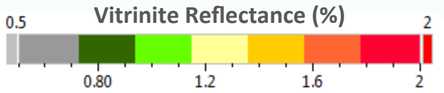
TEMPERATURE

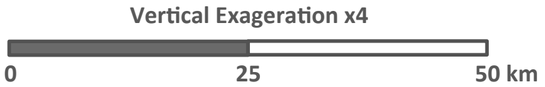




VITRINITE REFLECTANCE



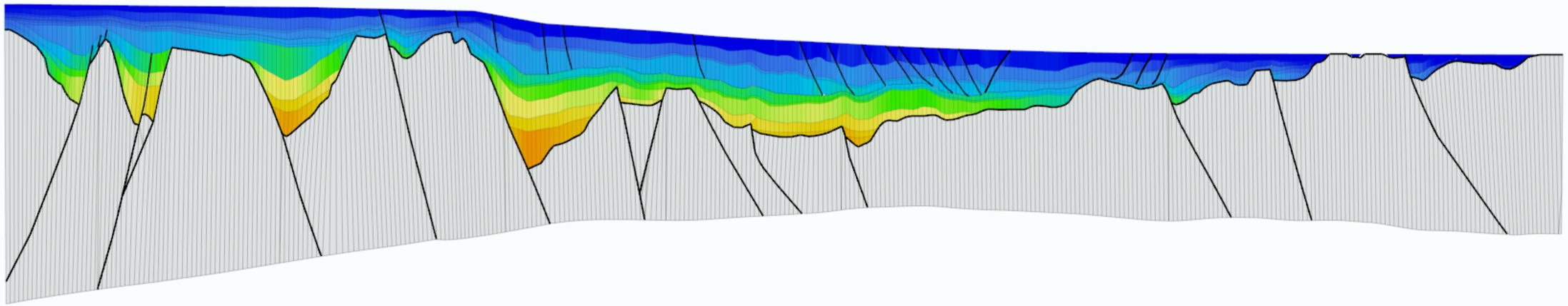




Thermal Regime

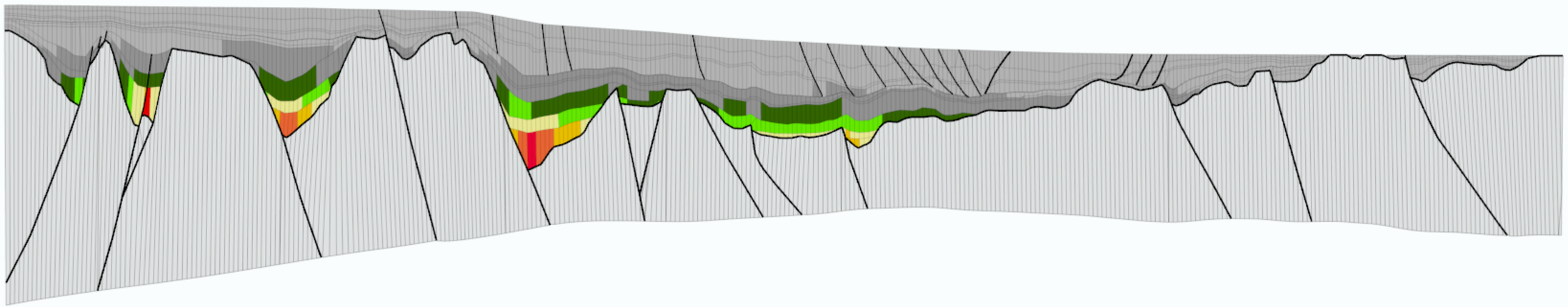
49 Ma

TEMPERATURE



Temperature (°C)
0 80 160 240

VITRINITE REFLECTANCE



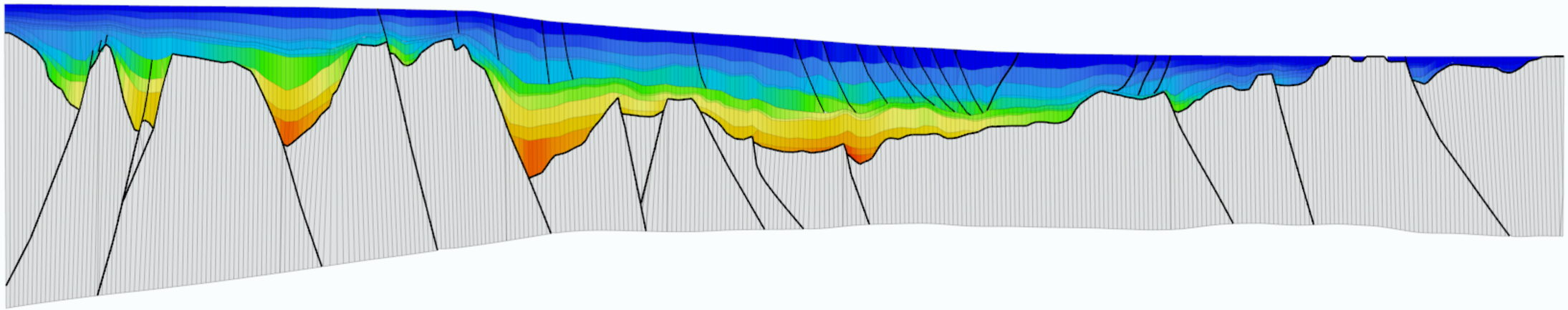
Vitrinite Reflectance (%)
0.5 0.80 1.2 1.6 2

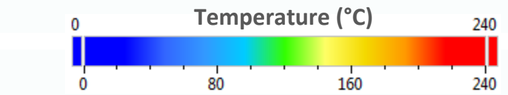
Vertical Exageration x4
0 25 50 km

Thermal Regime

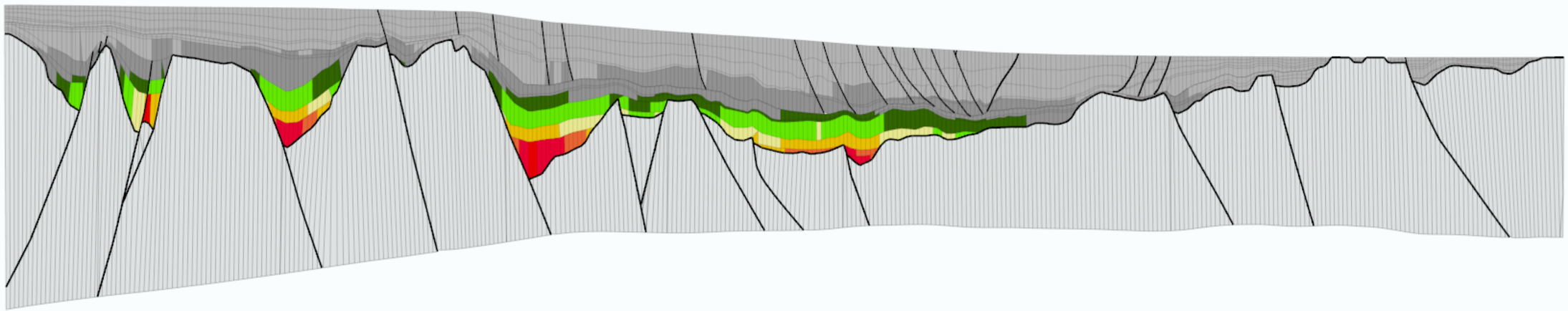
47 Ma

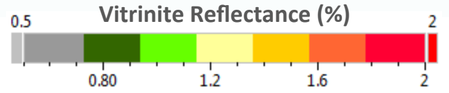
TEMPERATURE

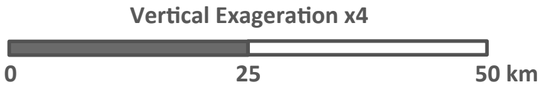




VITRINITE REFLECTANCE



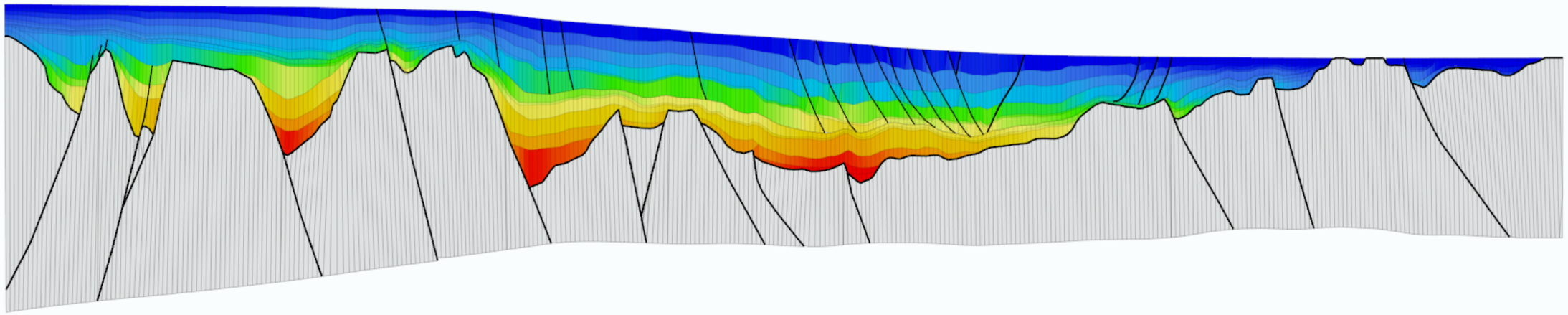




Thermal Regime

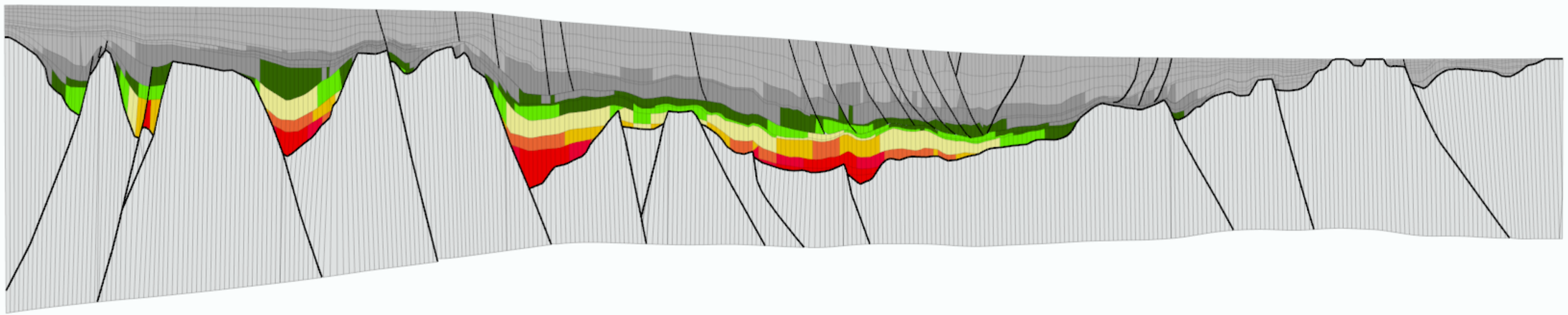
45 Ma

TEMPERATURE



Temperature (°C)
0 80 160 240

VITRINITE REFLECTANCE



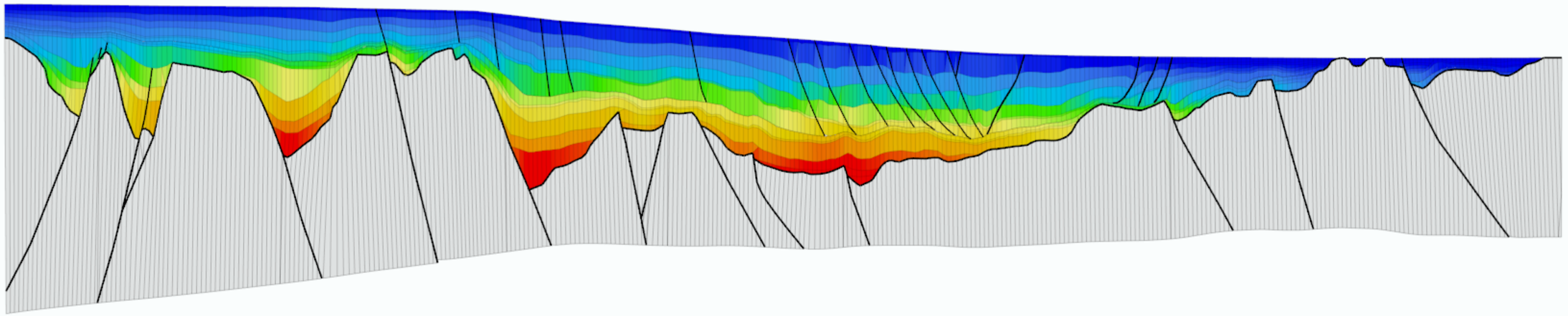
Vitrinite Reflectance (%)
0.5 0.80 1.2 1.6 2

Vertical Exageration x4
0 25 50 km

Thermal Regime

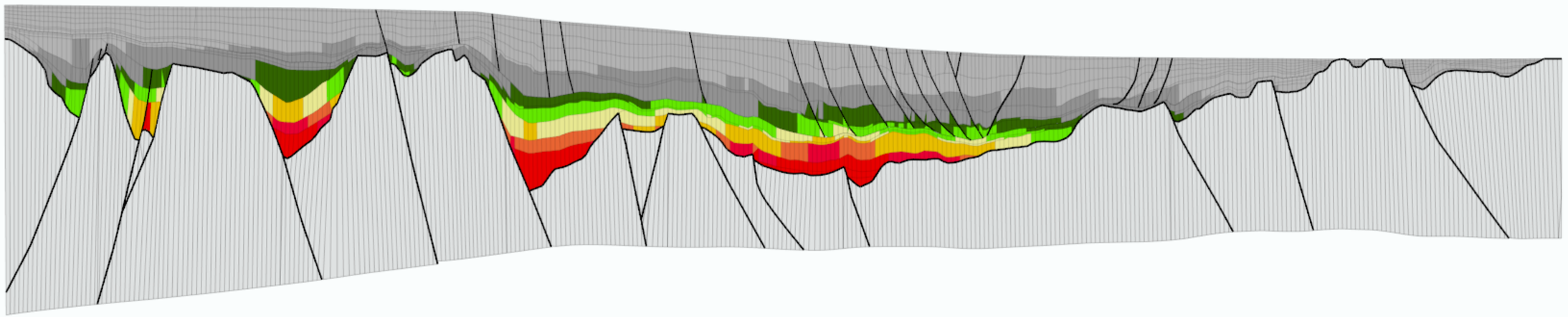
44 Ma

TEMPERATURE



Temperature (°C)
0 80 160 240

VITRINITE REFLECTANCE



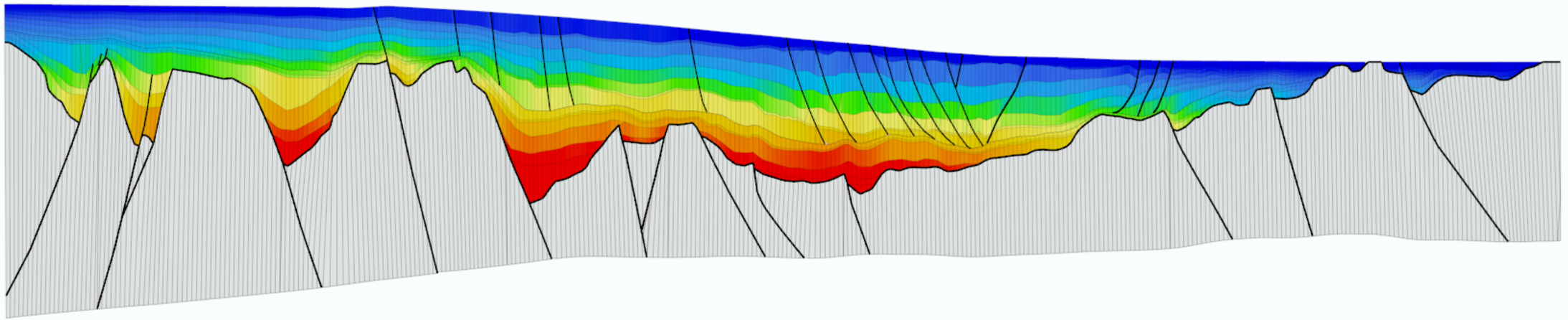
Vitrinite Reflectance (%)
0.5 0.80 1.2 1.6 2

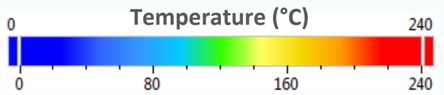
Vertical Exageration x4
0 25 50 km

Thermal Regime

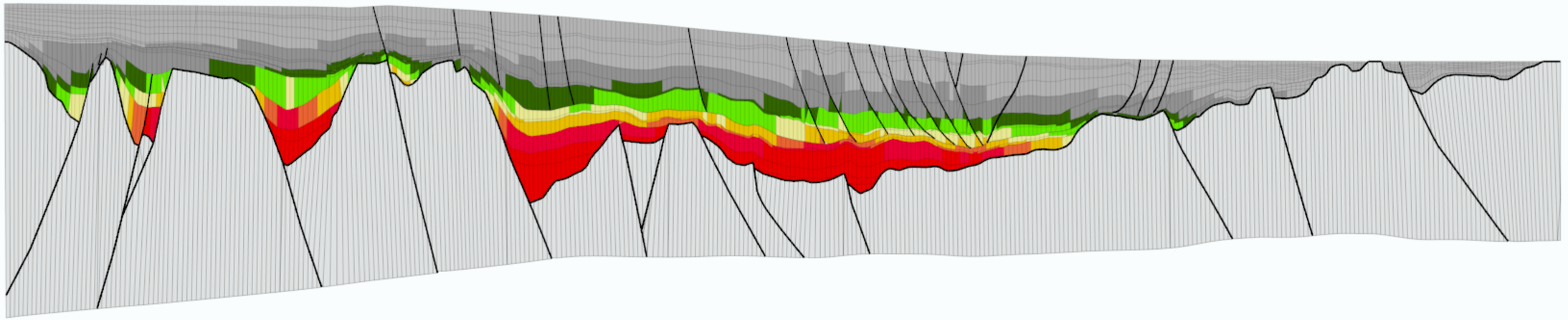
39 Ma

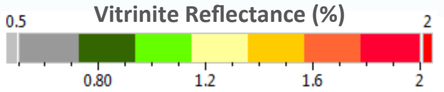
TEMPERATURE

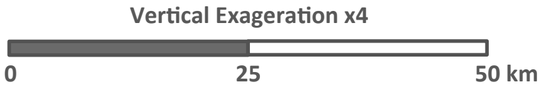




VITRINITE REFLECTANCE



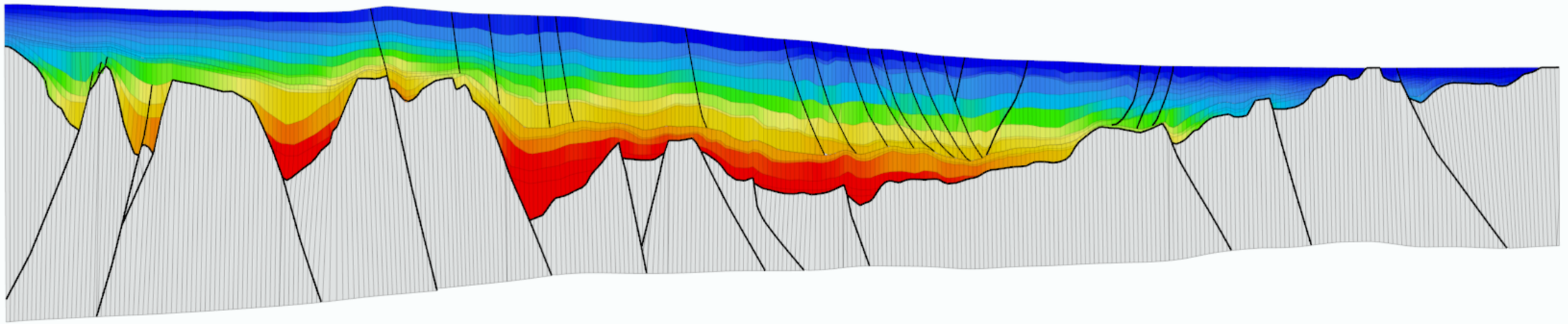




Thermal Regime

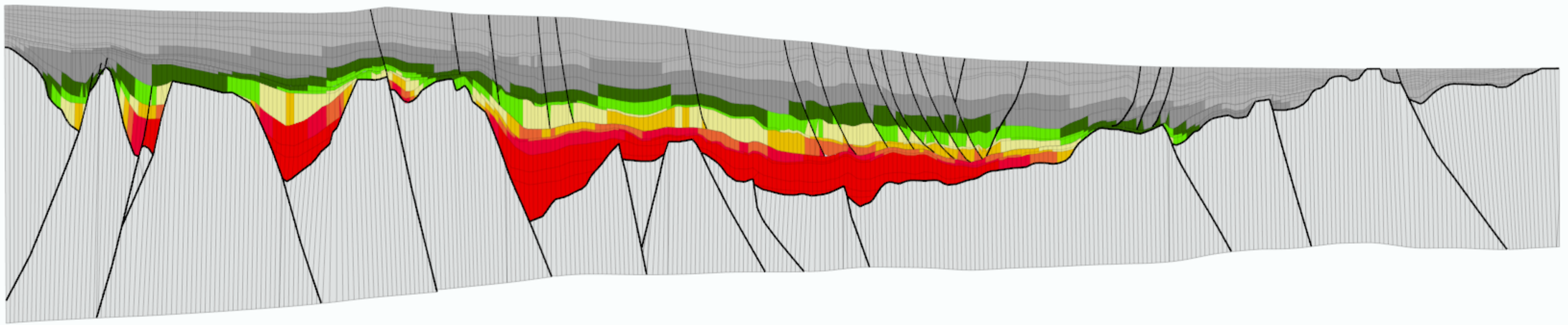
34 Ma

TEMPERATURE



Temperature (°C)
0 80 160 240

VITRINITE REFLECTANCE



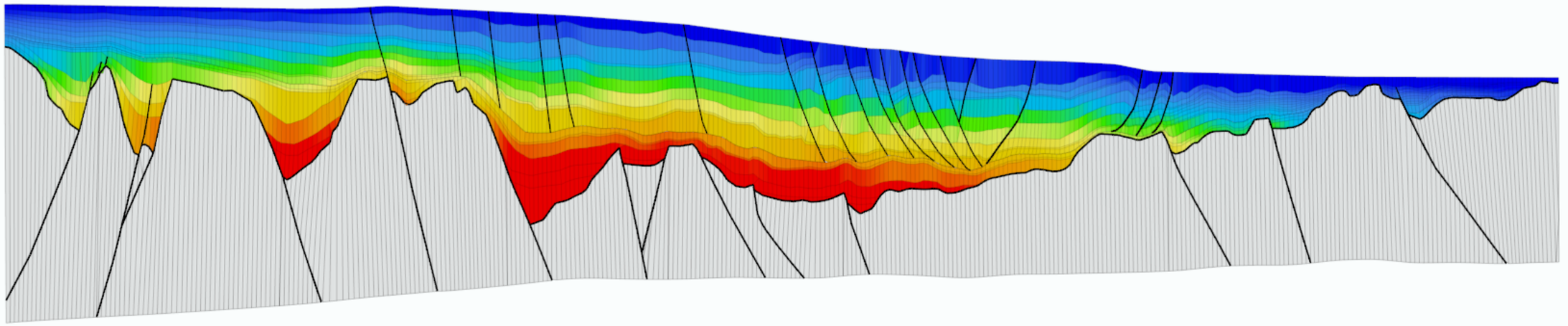
Vitrinite Reflectance (%)
0.5 0.80 1.2 1.6 2

Vertical Exageration x4
0 25 50 km

Thermal Regime

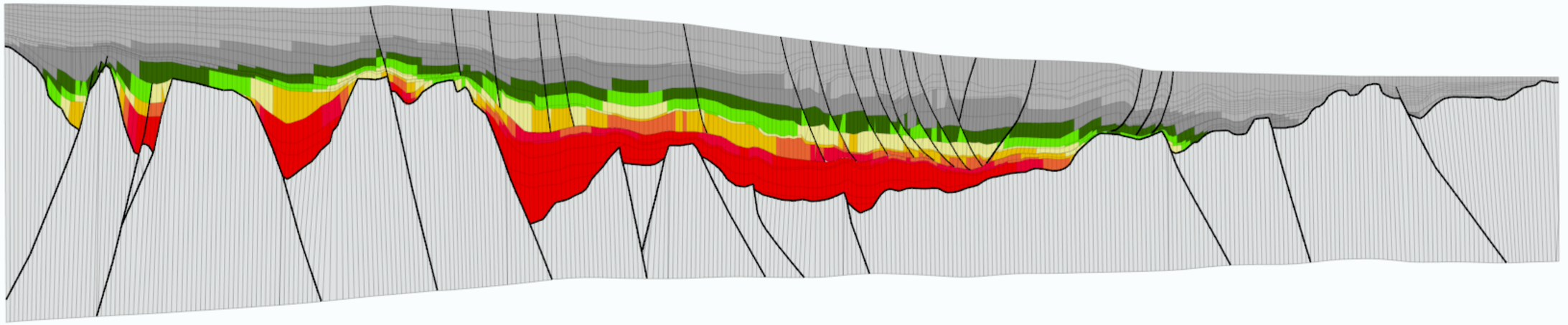
30 Ma

TEMPERATURE



Temperature (°C)
0 80 160 240

VITRINITE REFLECTANCE



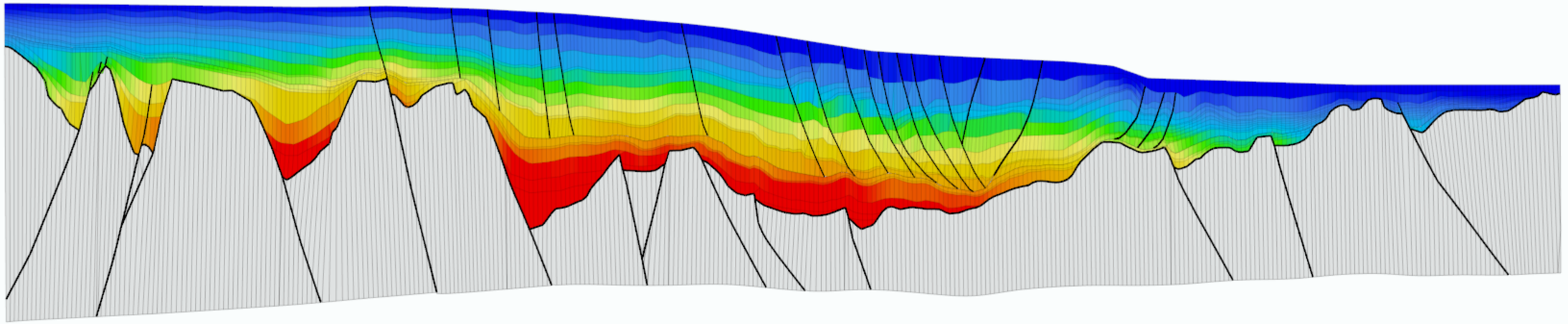
Vitrinite Reflectance (%)
0.5 0.80 1.2 1.6 2

Vertical Exageration x4
0 25 50 km

Thermal Regime

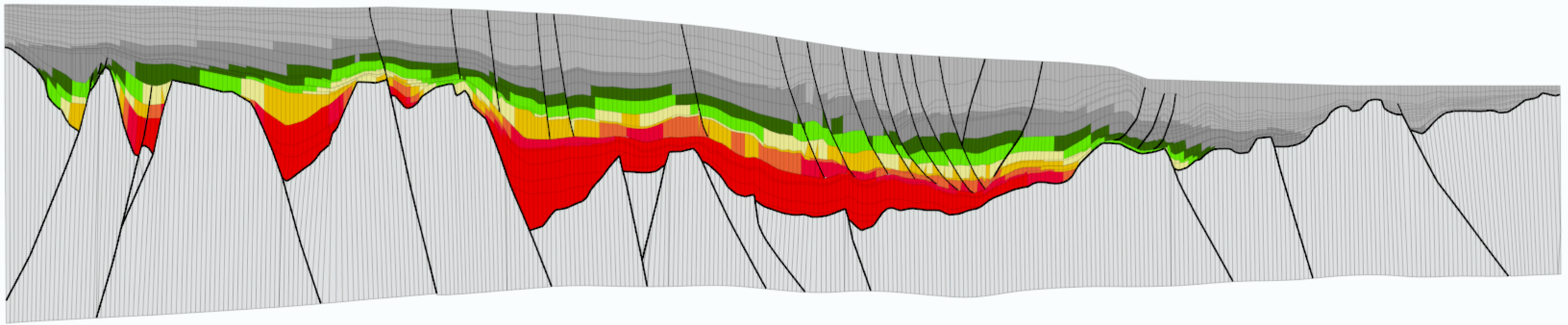
27 Ma

TEMPERATURE



Temperature (°C)
0 80 160 240

VITRINITE REFLECTANCE



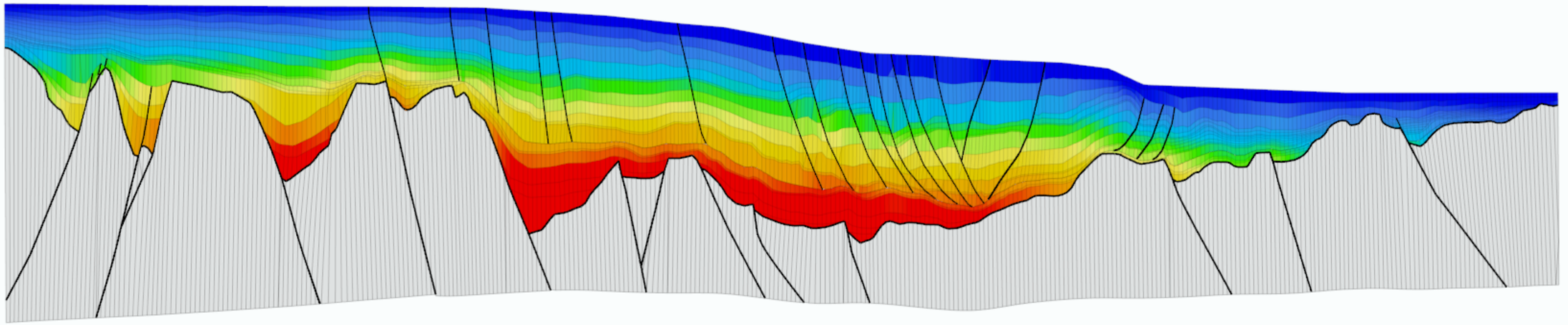
Vitrinite Reflectance (%)
0.5 0.80 1.2 1.6 2

Vertical Exageration x4
0 25 50 km

Thermal Regime

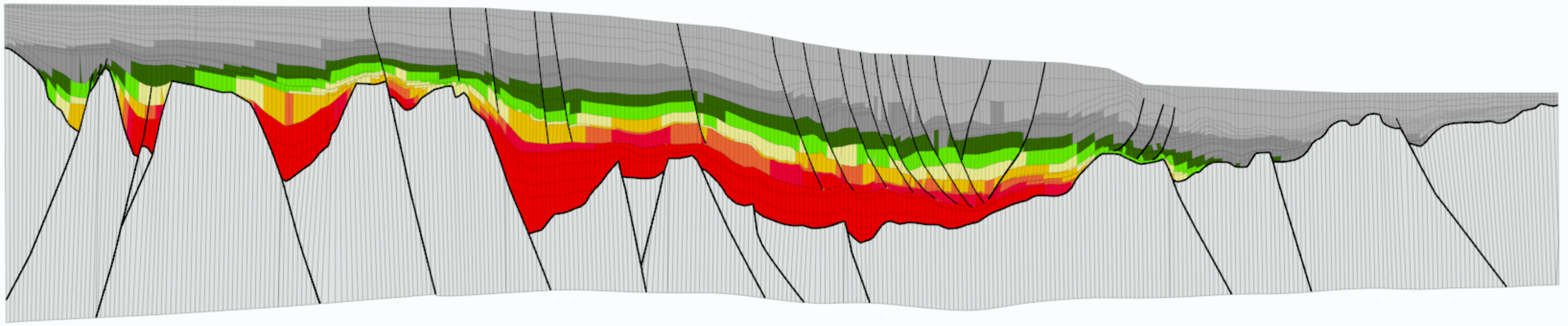
24 Ma

TEMPERATURE



Temperature (°C)
0 80 160 240

VITRINITE REFLECTANCE



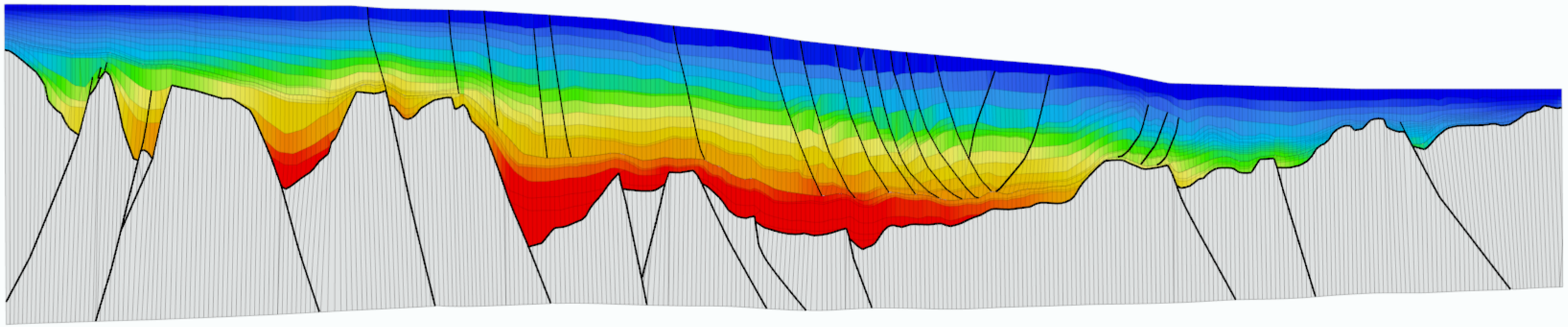
Vitrinite Reflectance (%)
0.5 0.80 1.2 1.6 2

Vertical Exageration x4
0 25 50 km

Thermal Regime

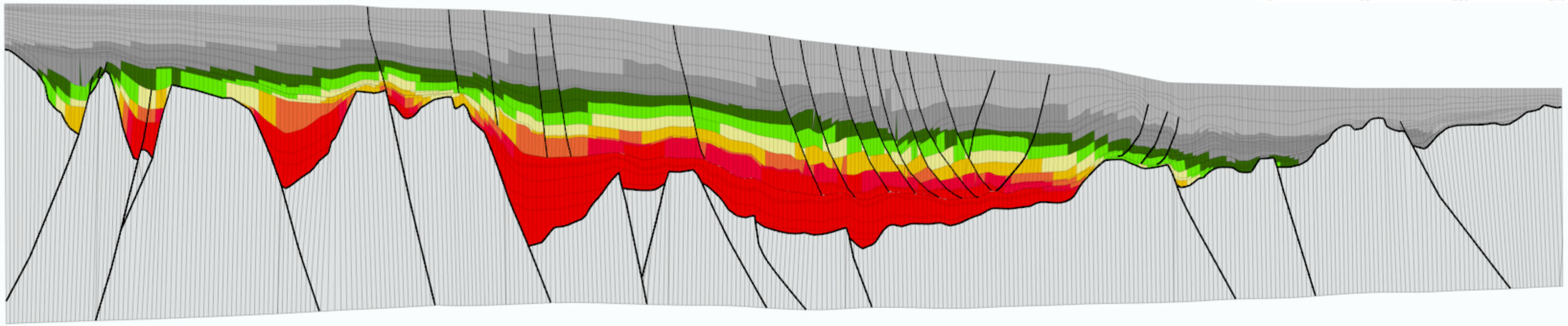
17 Ma

TEMPERATURE



Temperature (°C)
0 80 160 240

VITRINITE REFLECTANCE



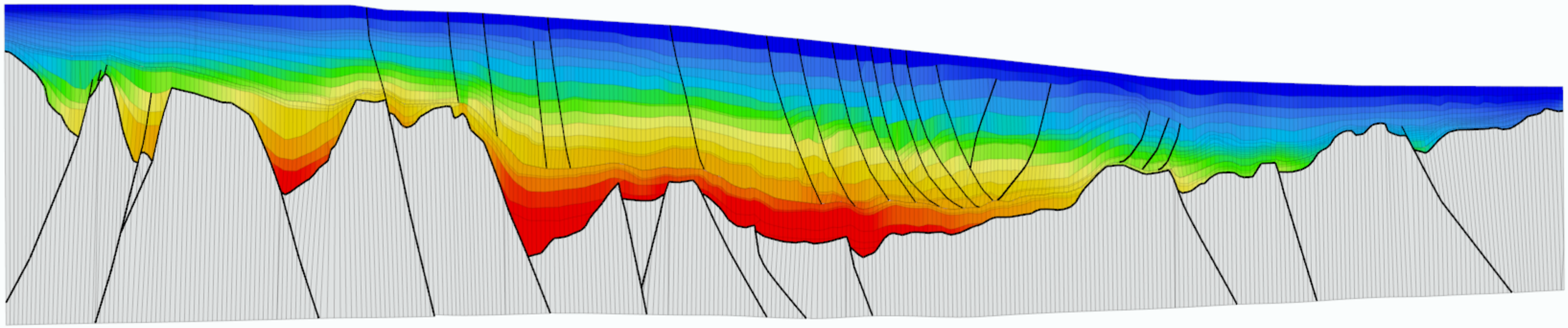
Vitrinite Reflectance (%)
0.5 0.80 1.2 1.6 2

Vertical Exageration x4
0 25 50 km

Thermal Regime

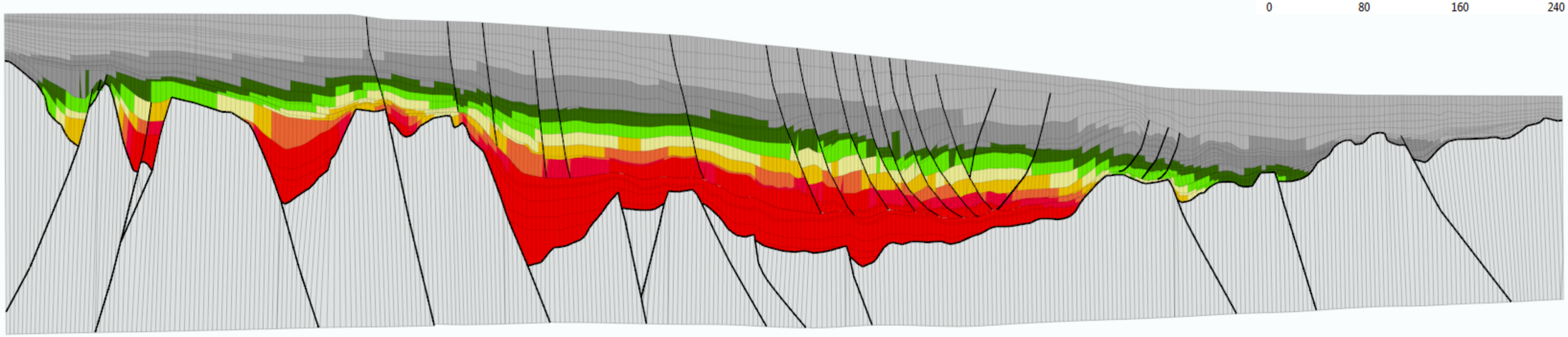
10 Ma

TEMPERATURE



Temperature (°C)
0 80 160 240

VITRINITE REFLECTANCE



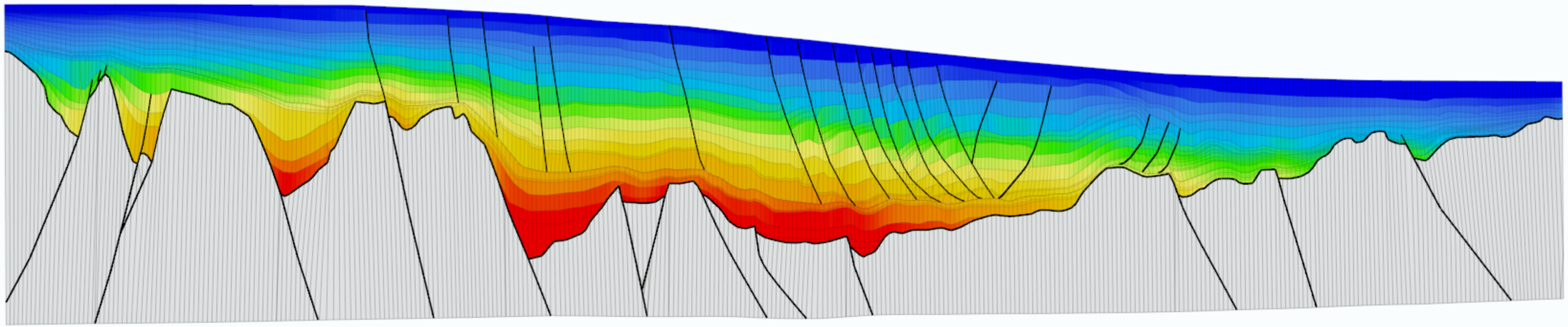
Vitrinite Reflectance (%)
0.5 0.80 1.2 1.6 2

Vertical Exageration x4
0 25 50 km

Thermal Regime

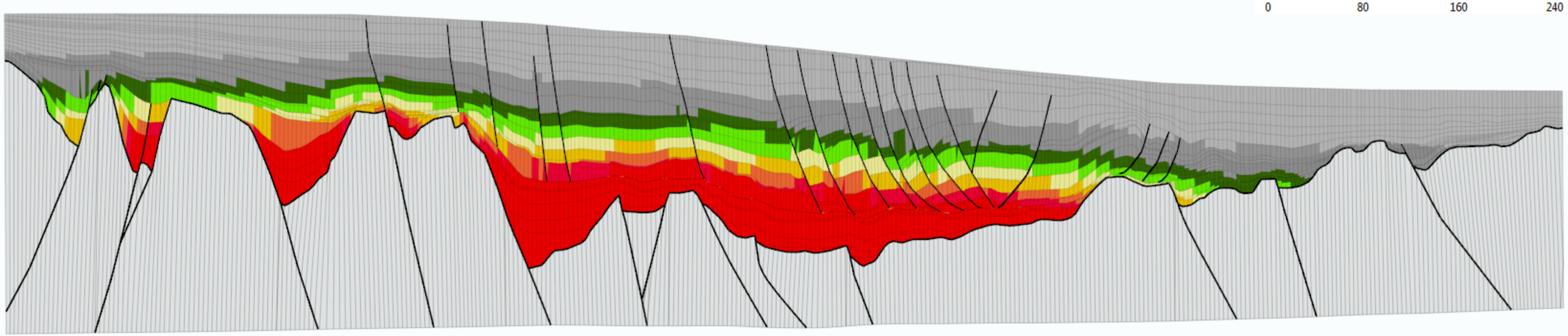
8 Ma

TEMPERATURE



Temperature (°C)
0 80 160 240

VITRINITE REFLECTANCE



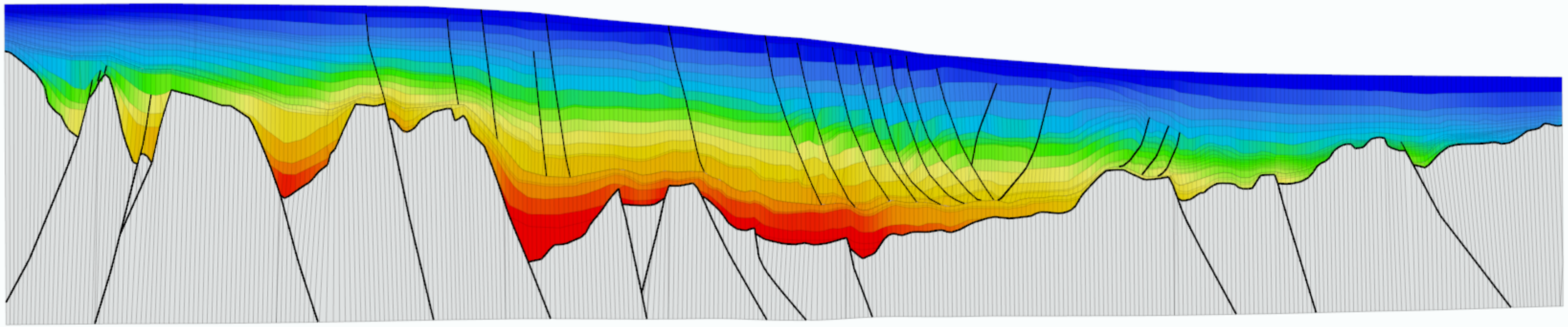
Vitrinite Reflectance (%)
0.5 0.80 1.2 1.6 2

Vertical Exageration x4
0 25 50 km

Thermal Regime

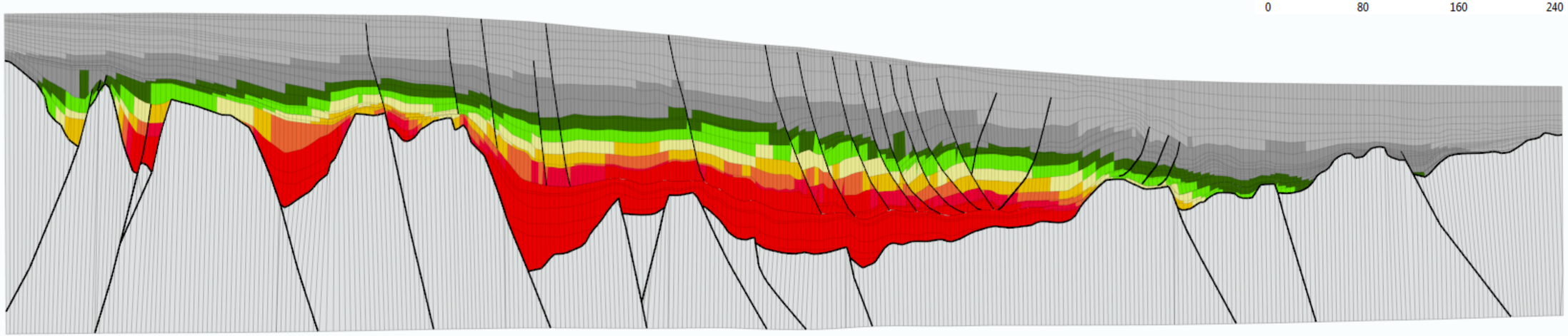
6.5 Ma

TEMPERATURE



Temperature (°C)
0 80 160 240

VITRINITE REFLECTANCE



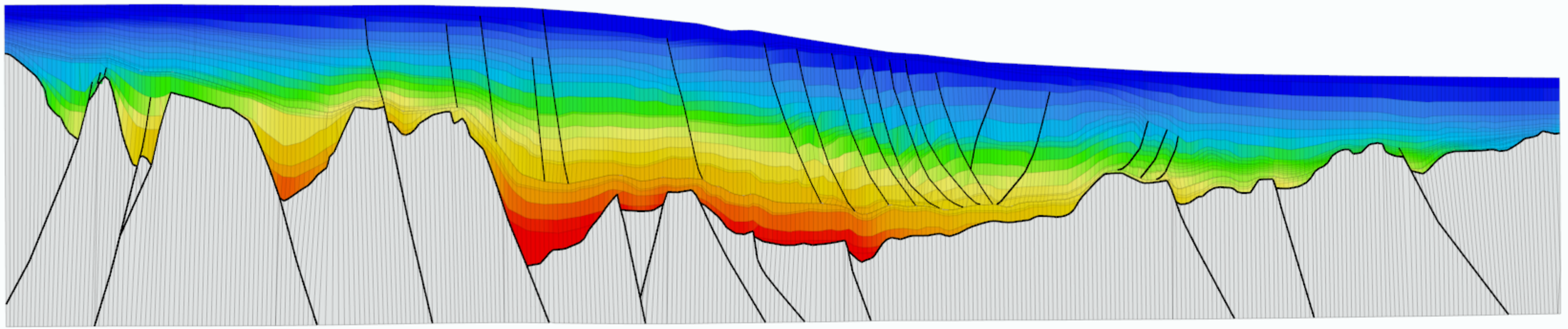
Vitrinite Reflectance (%)
0.5 0.80 1.2 1.6 2

Vertical Exageration x4
0 25 50 km

Thermal Regime

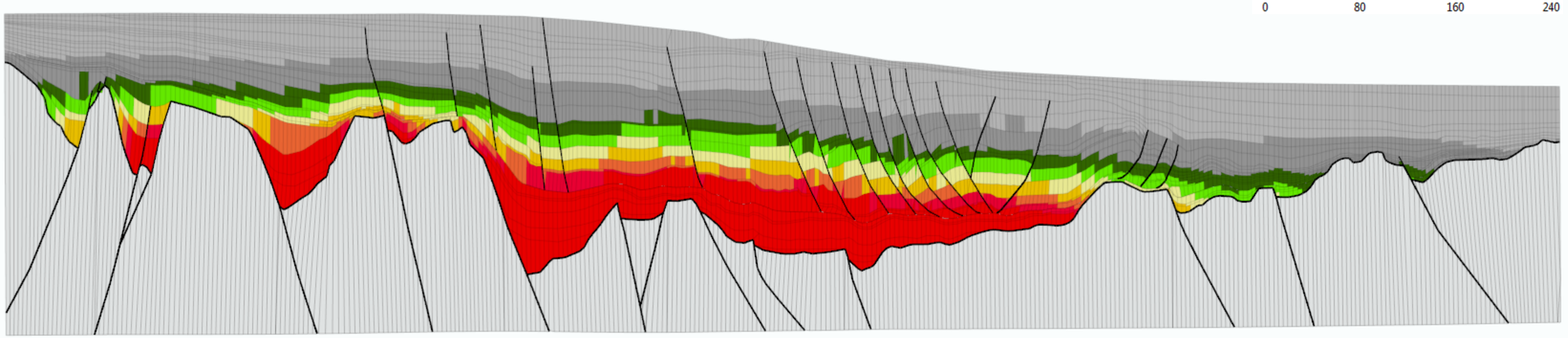
3 Ma

TEMPERATURE



Temperature (°C)
0 80 160 240

VITRINITE REFLECTANCE



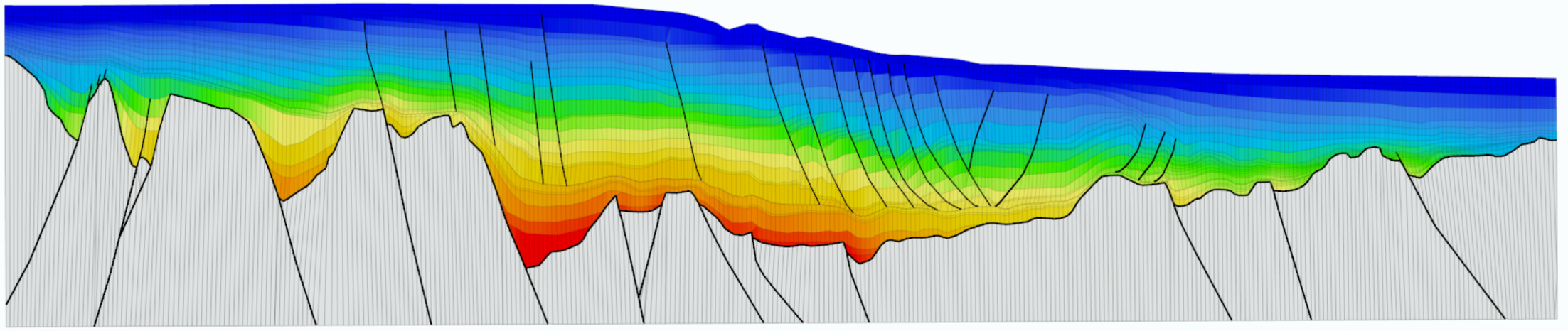
Vitrinite Reflectance (%)
0.5 0.80 1.2 1.6 2

Vertical Exageration x4
0 25 50 km

Thermal Regime

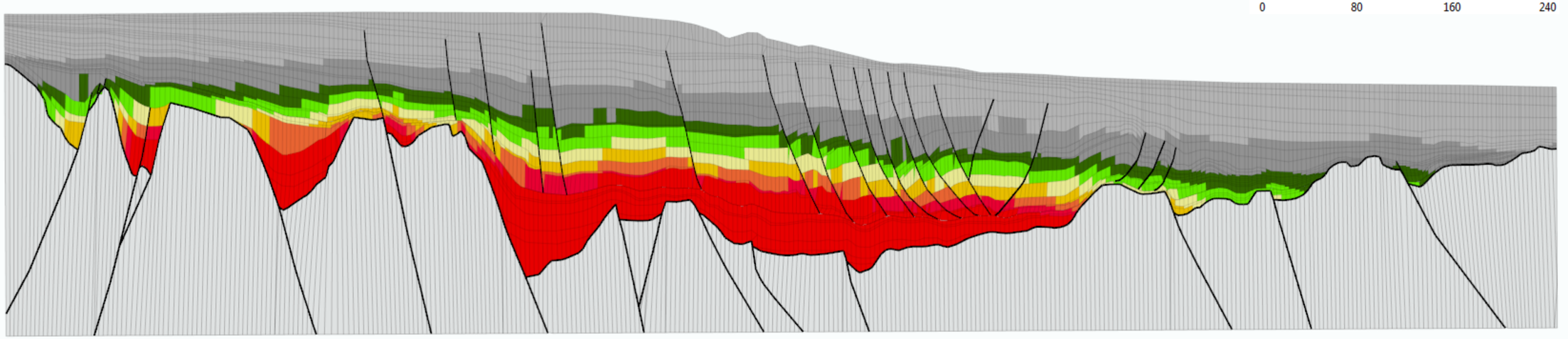
0 Ma

TEMPERATURE



Temperature (°C)
0 80 160 240

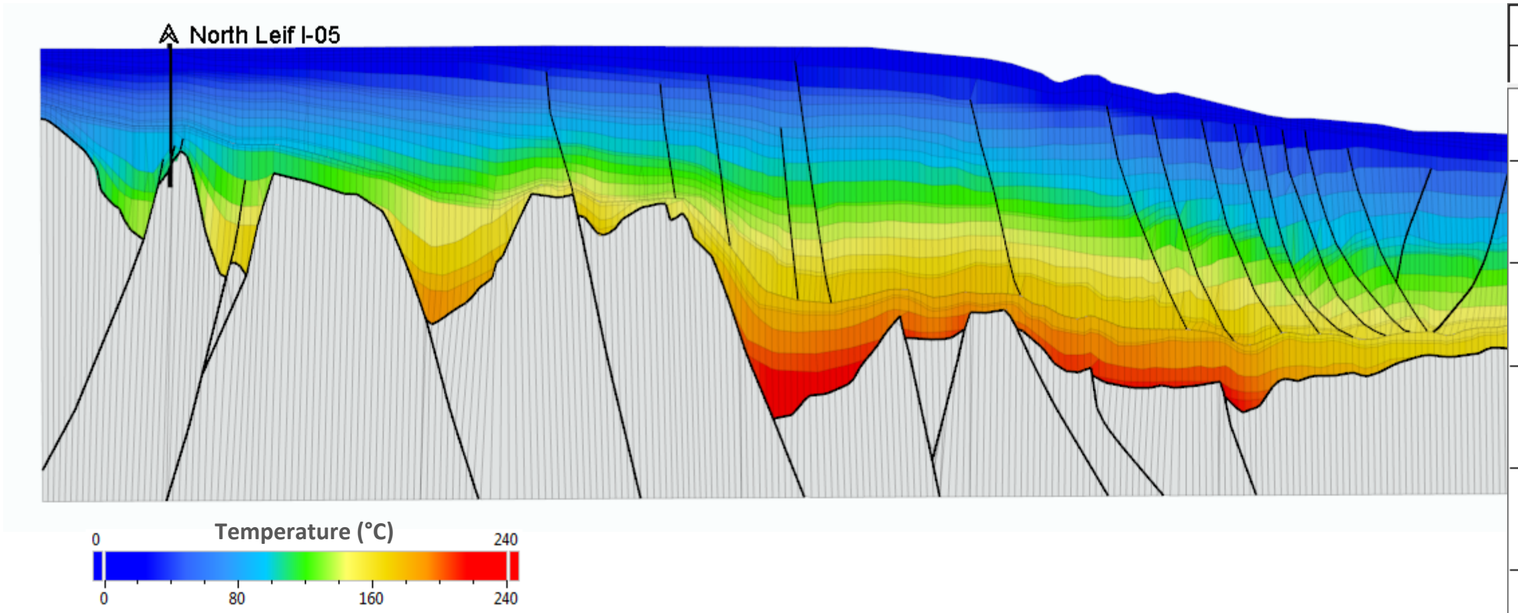
VITRINITE REFLECTANCE

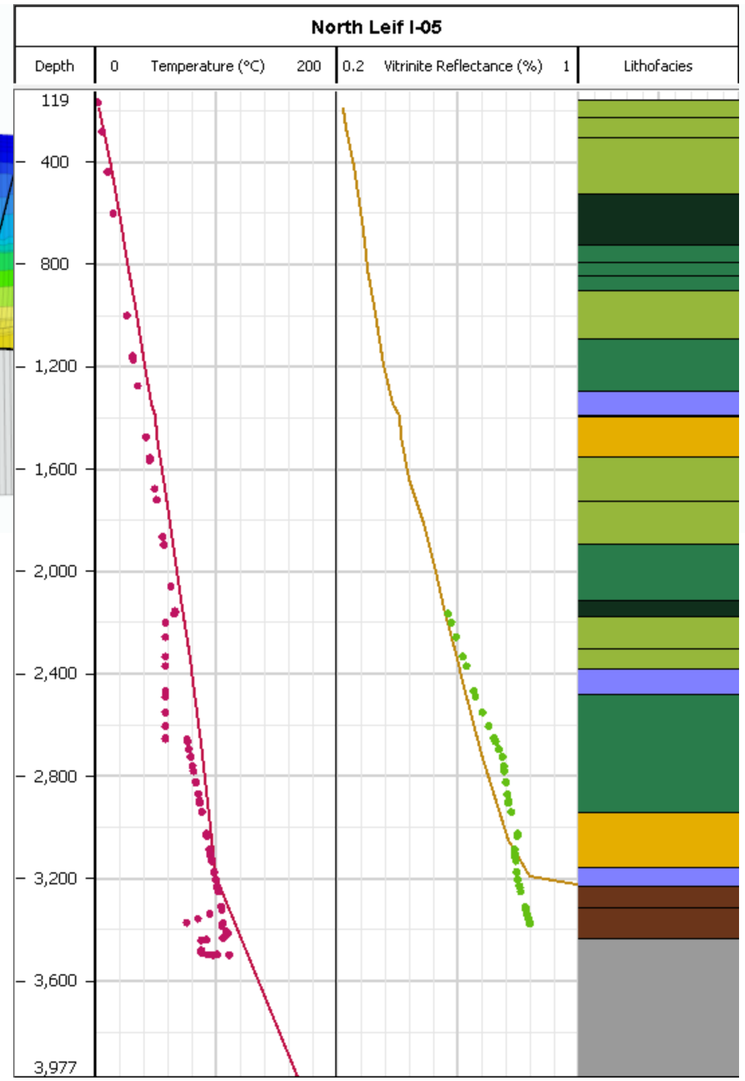


Vitrinite Reflectance (%)
0.5 0.80 1.2 1.6 2

Vertical Exageration x4
0 25 50 km

Thermal Calibration

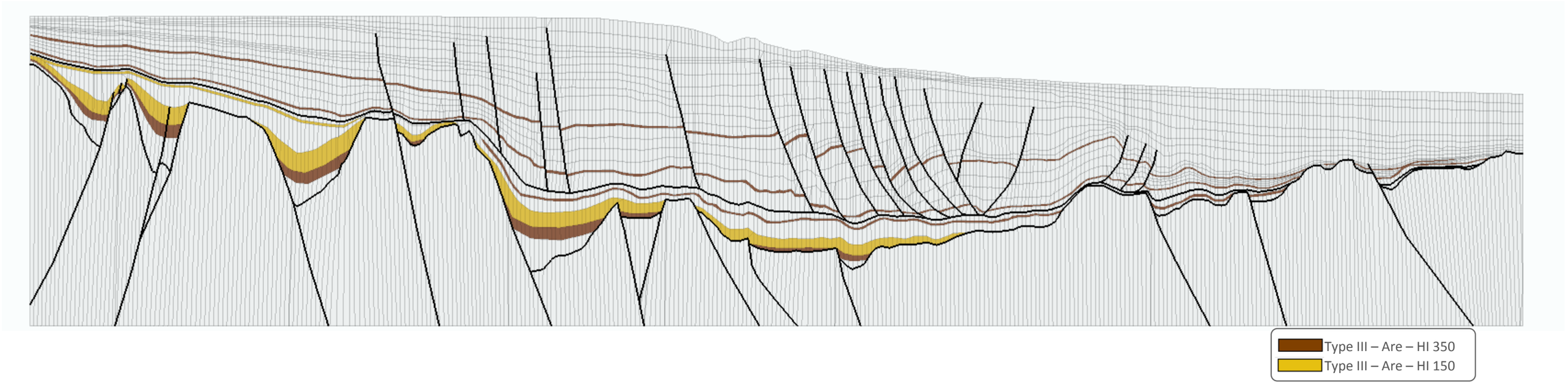




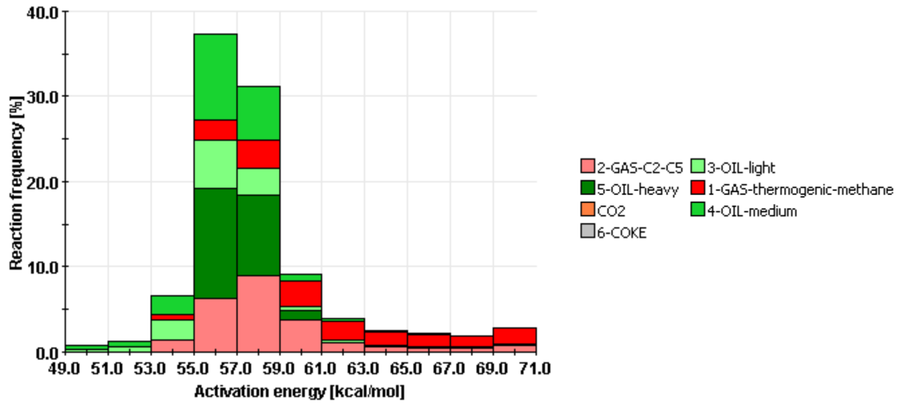
- The model is **properly calibrated** but only one well, located on the shelf, is available.
- A good confidence can still be given to the distal information thanks to the usage of a **heat flow history** coming from an evolutive lithospheric model.

SOURCE ROCK MATURITY

Source Rock Definition



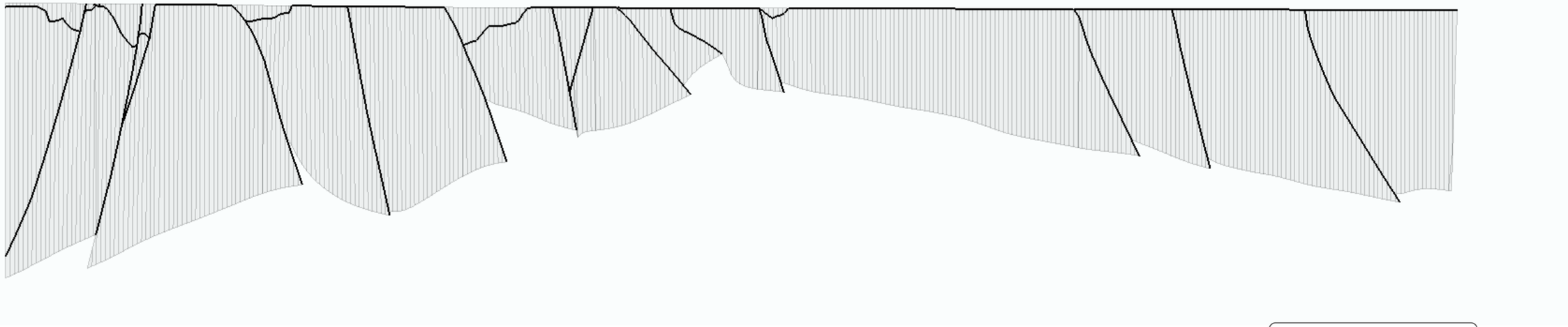
- **Five Source Rock layers** were introduced in the model from log measurement and regional understanding
- Source rocks are considered to be **Type III** and only vary with their HI value.
- **Five moving classes** (2 gases and 3 oils) are considered to characterize the generated fluid.



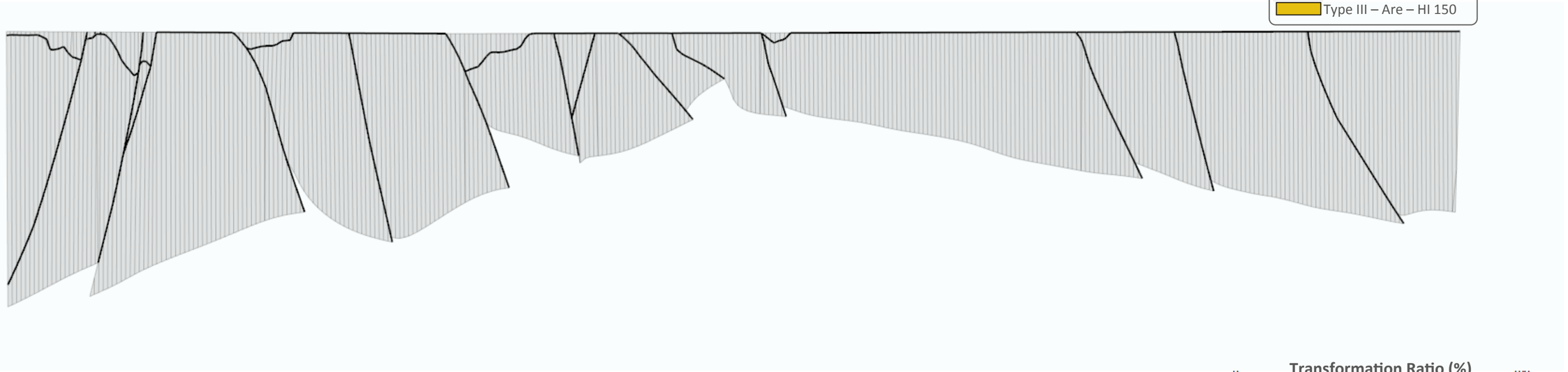
Source Rock **Maturity**

127 Ma

KEROGENS



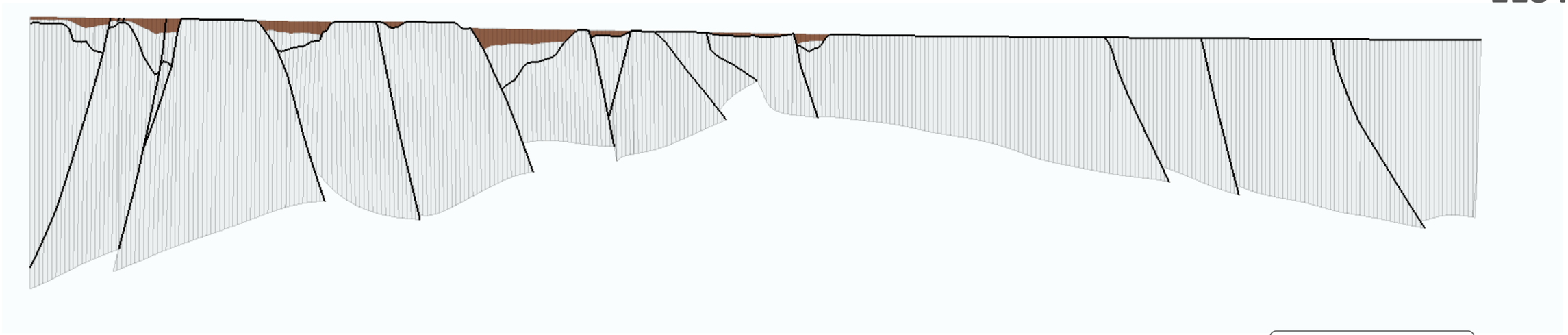
TRANSFORMATION RATIO



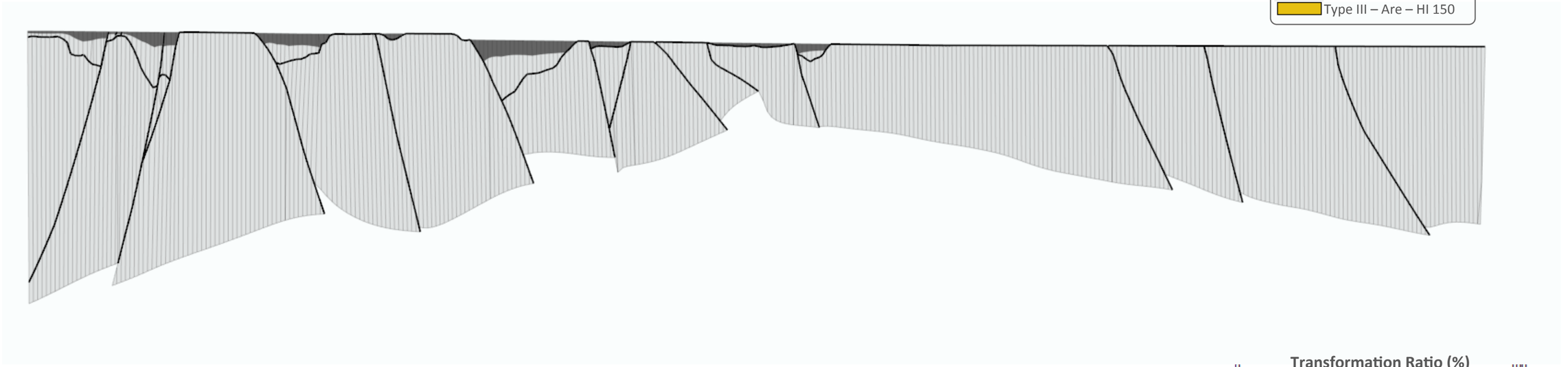
Source Rock **Maturity**

118 Ma

KEROGENS



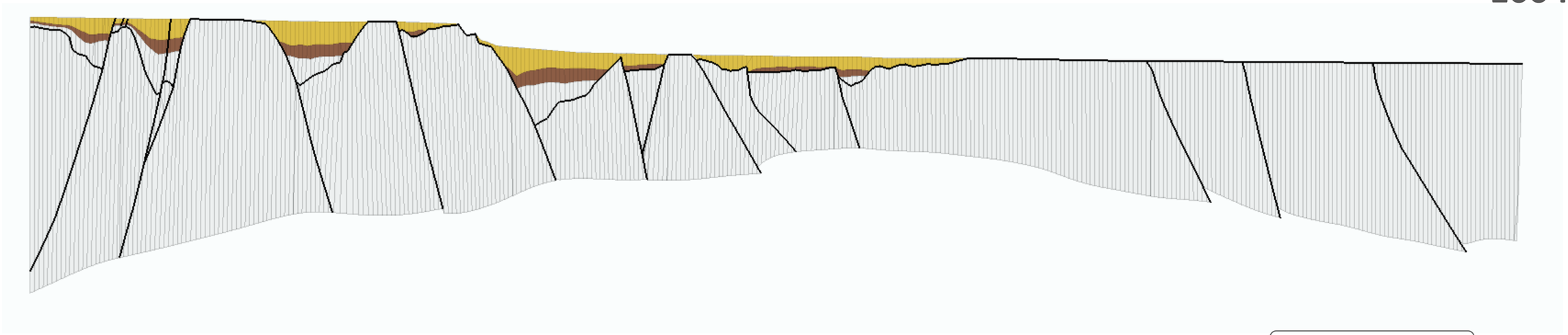
TRANSFORMATION RATIO



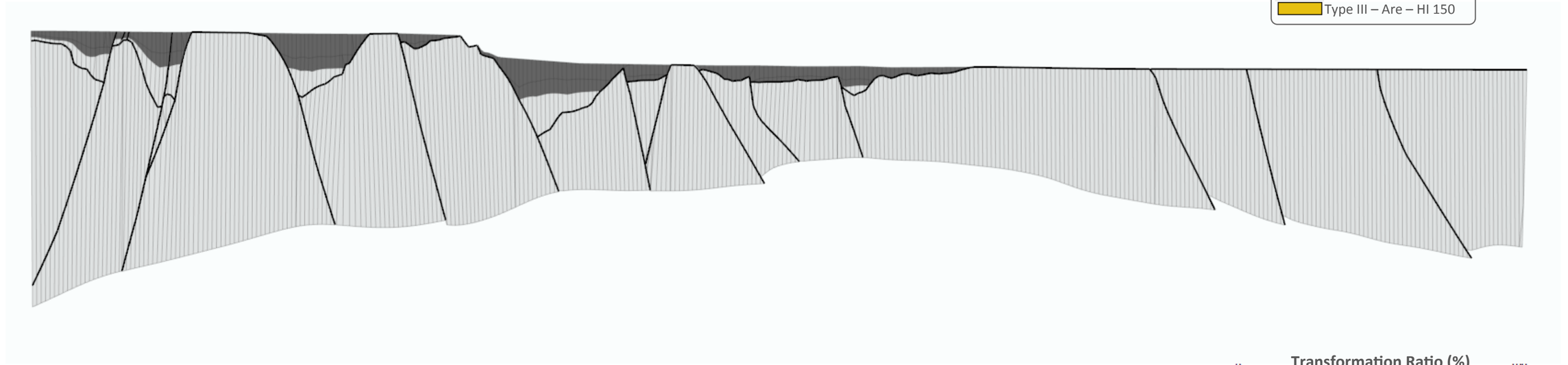
Source Rock **Maturity**

100 Ma

KEROGENS



TRANSFORMATION RATIO



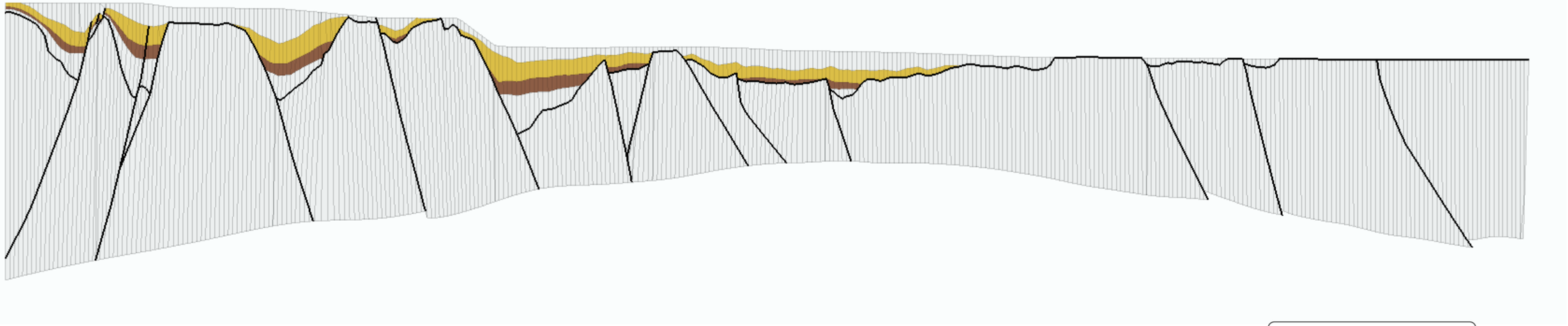
Vertical Exageration x4

0 25 50 km

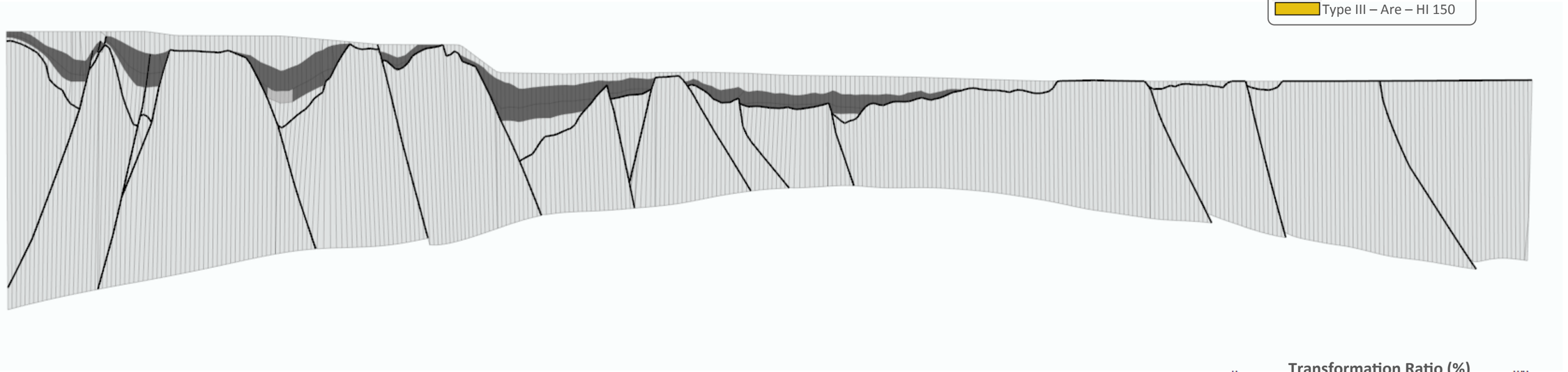
Source Rock **Maturity**

66 Ma

KEROGENS



TRANSFORMATION RATIO



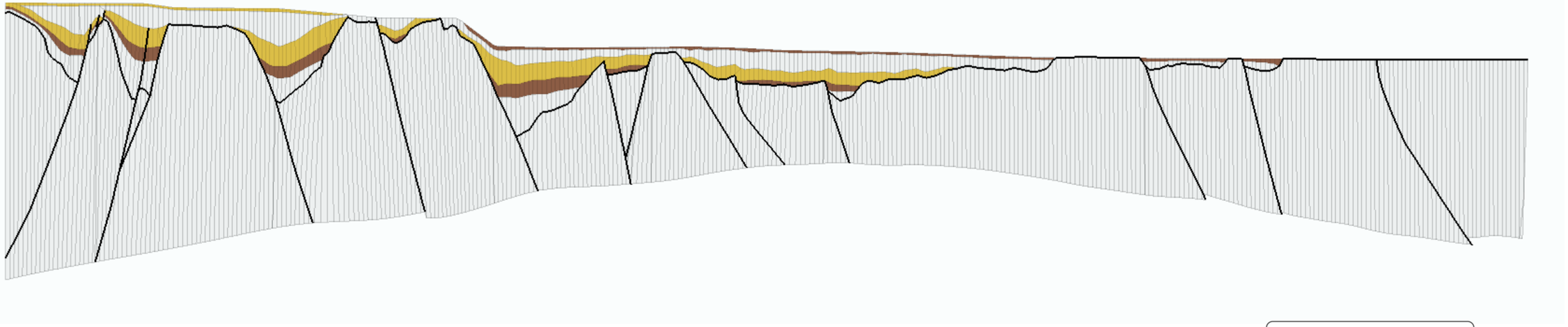
Vertical Exageration x4

0 25 50 km

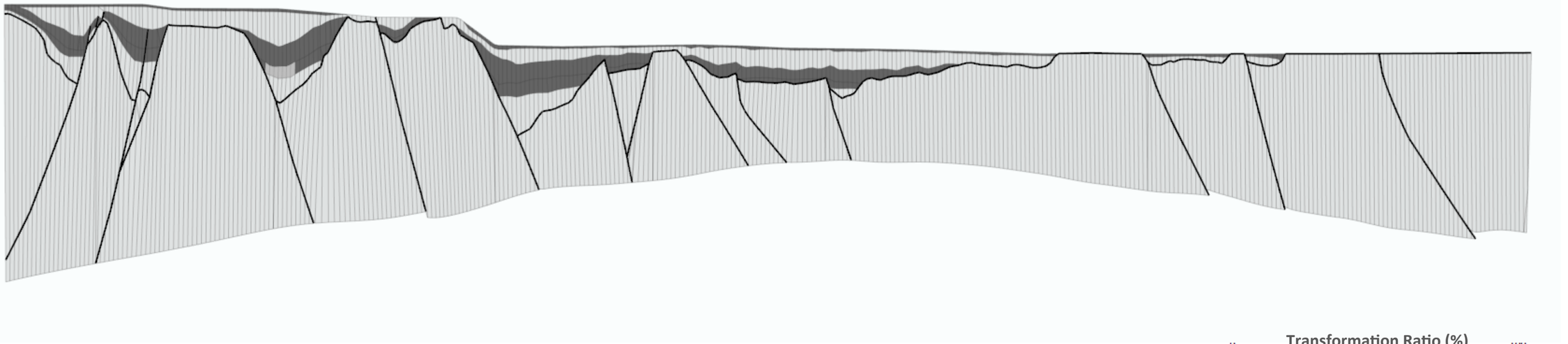
Source Rock **Maturity**

65 Ma

KEROGENS



TRANSFORMATION RATIO



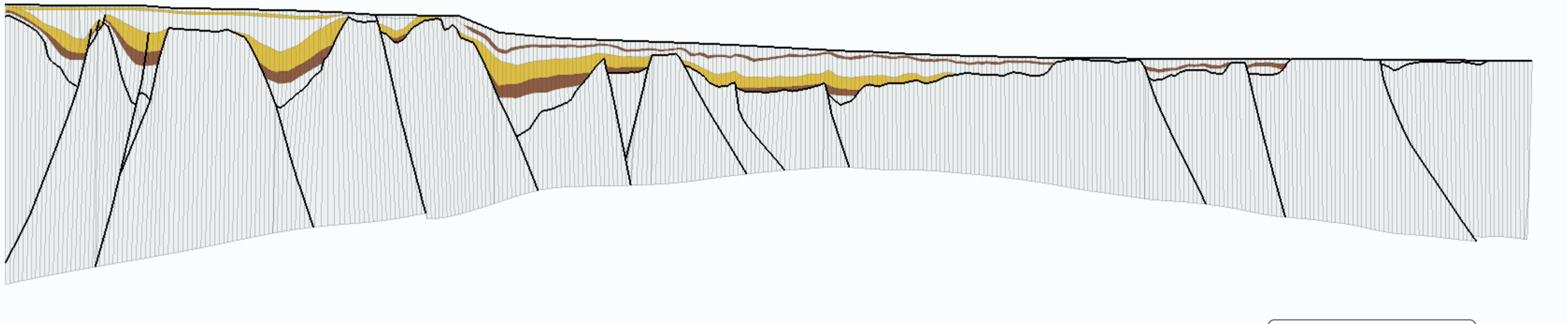
Vertical Exageration x4

0 25 50 km

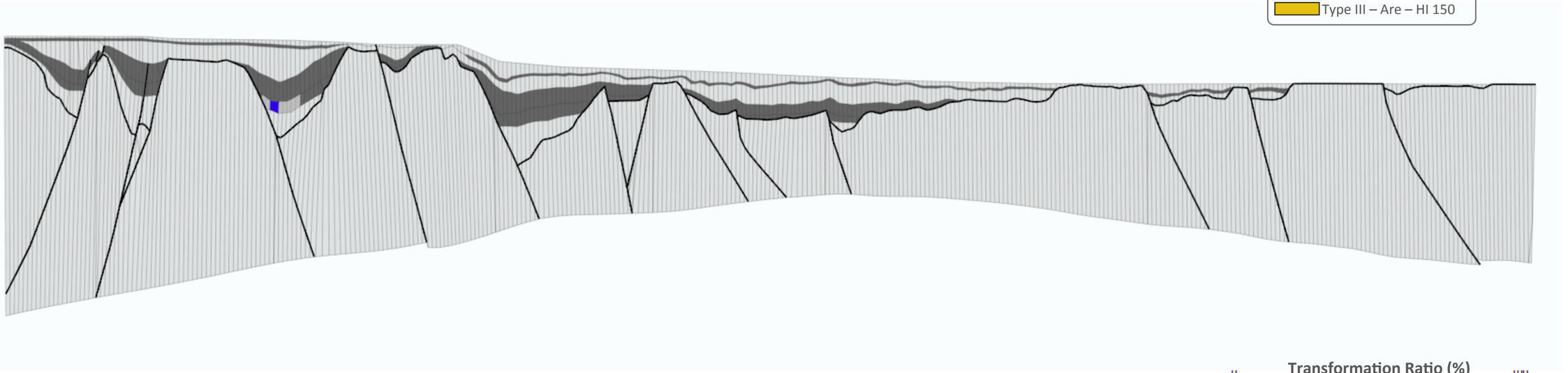
Source Rock **Maturity**

62 Ma

KEROGENS



TRANSFORMATION RATIO



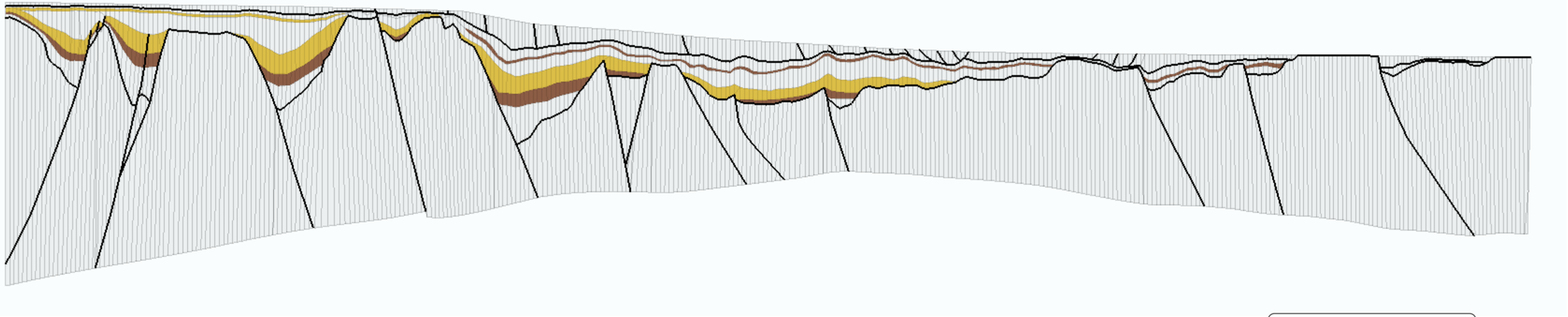
Vertical Exageration x4

0 25 50 km

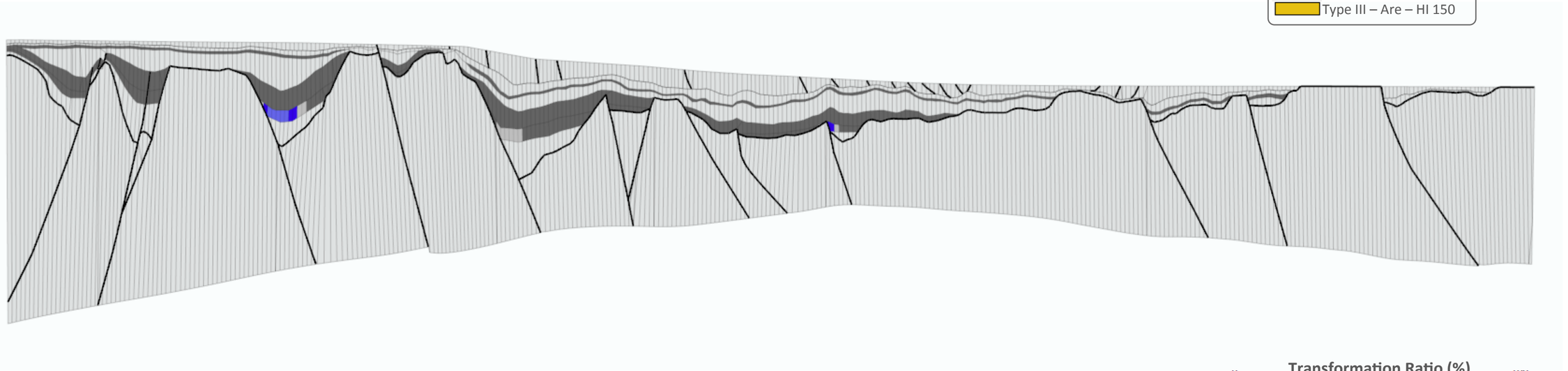
Source Rock **Maturity**

56 Ma

KEROGENS



TRANSFORMATION RATIO



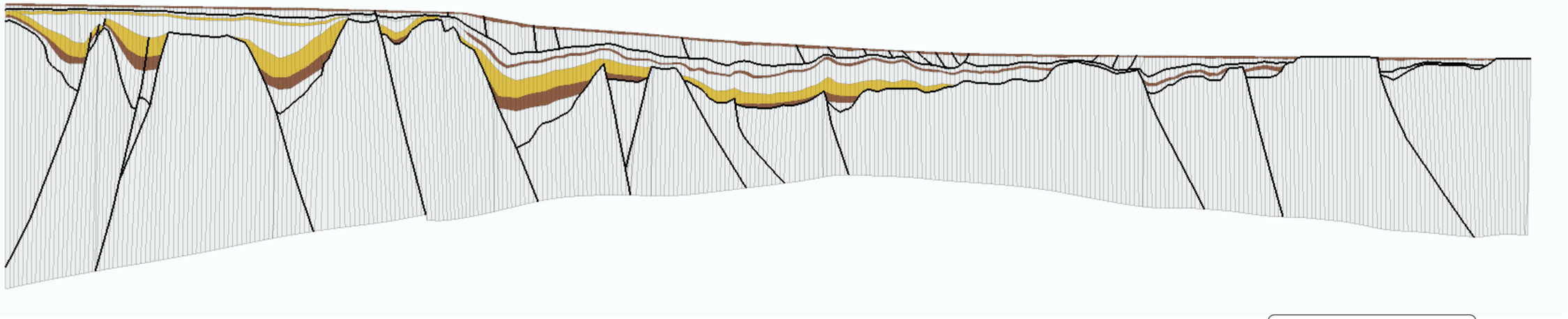
Vertical Exageration x4

0 25 50 km

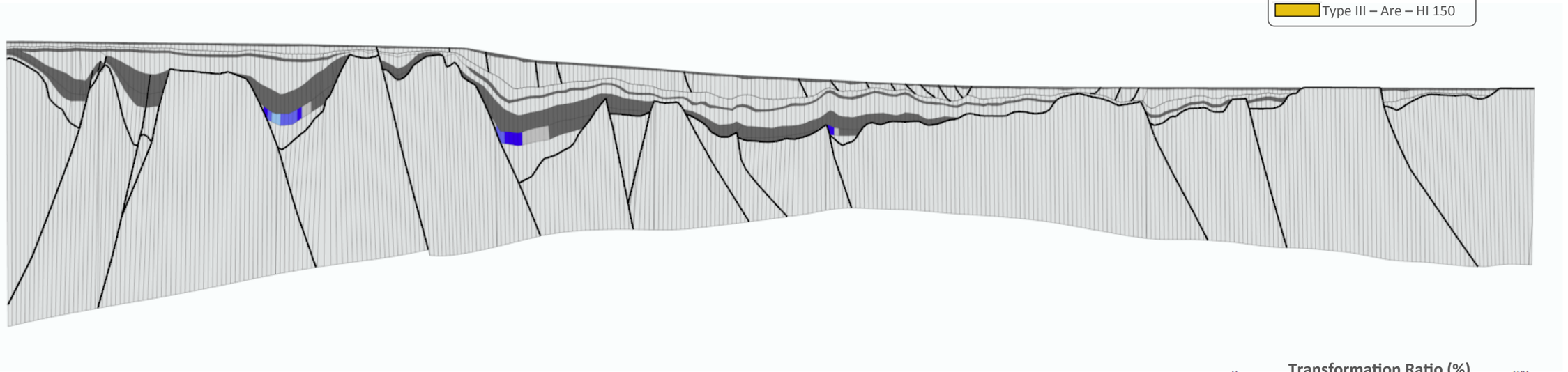
Source Rock **Maturity**

54 Ma

KEROGENS



TRANSFORMATION RATIO



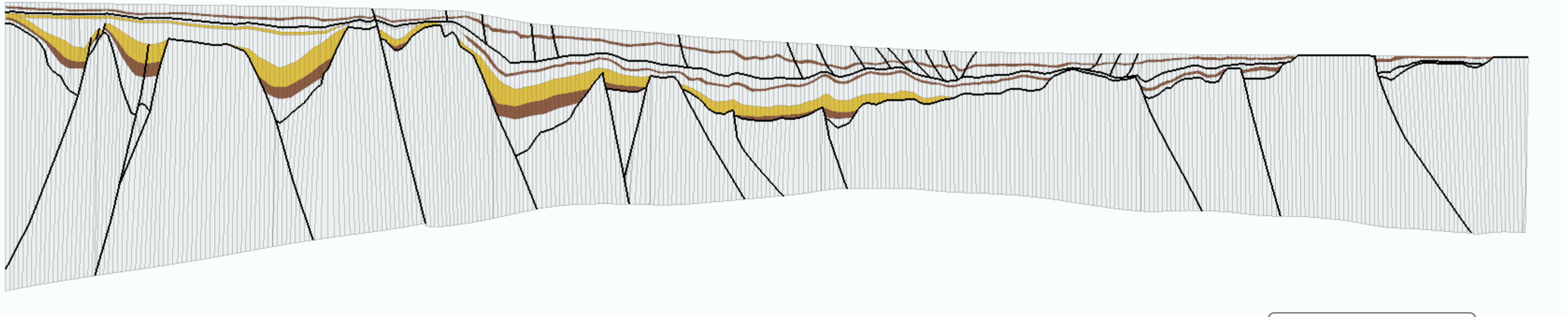
Vertical Exageration x4

0 25 50 km

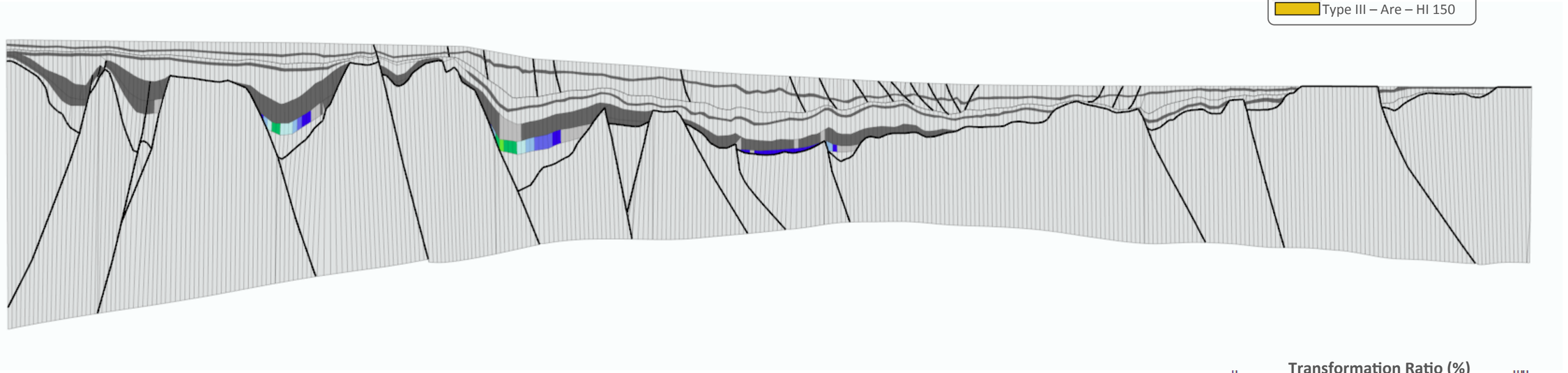
Source Rock **Maturity**

51 Ma

KEROGENS



TRANSFORMATION RATIO



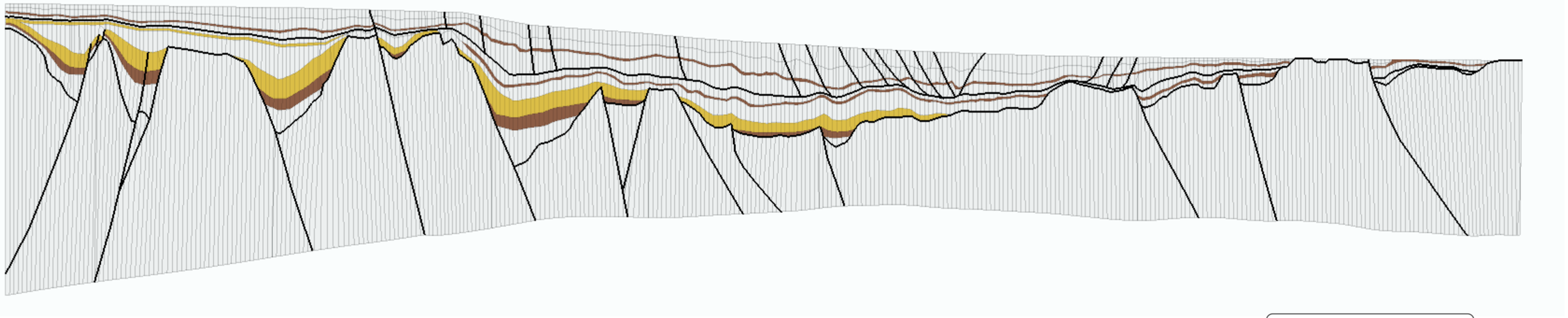
Vertical Exageration x4

0 25 50 km

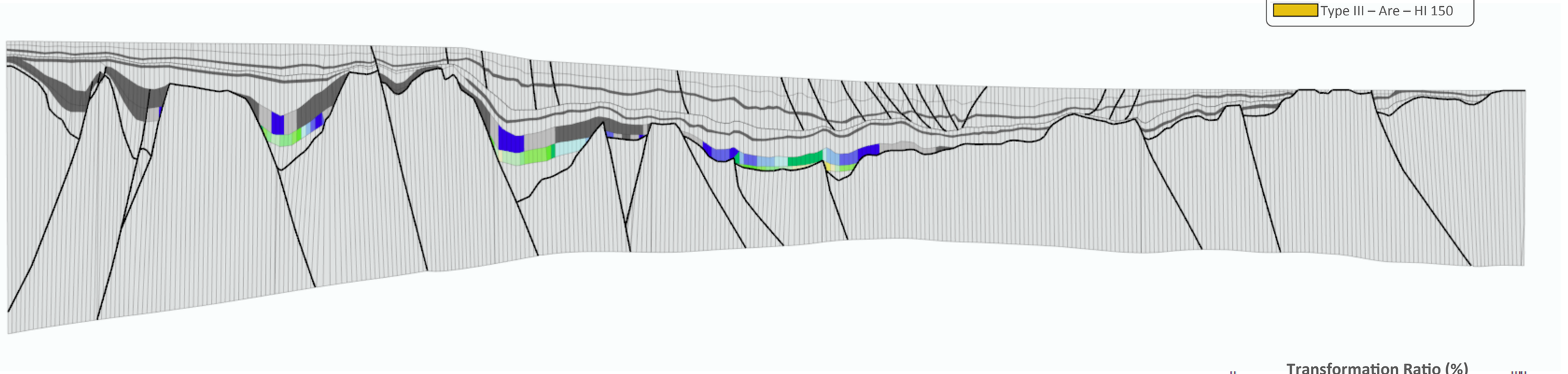
Source Rock **Maturity**

49 Ma

KEROGENS



TRANSFORMATION RATIO



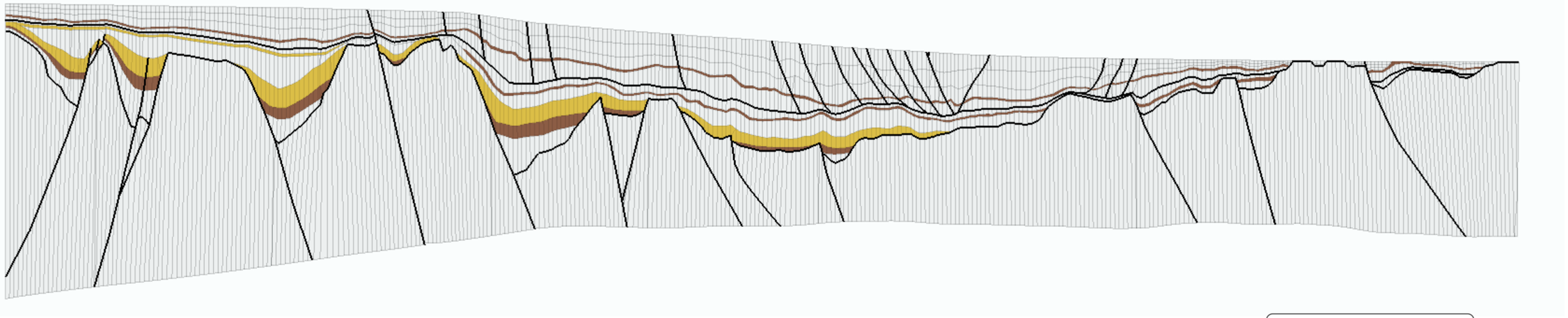
Vertical Exageration x4

0 25 50 km

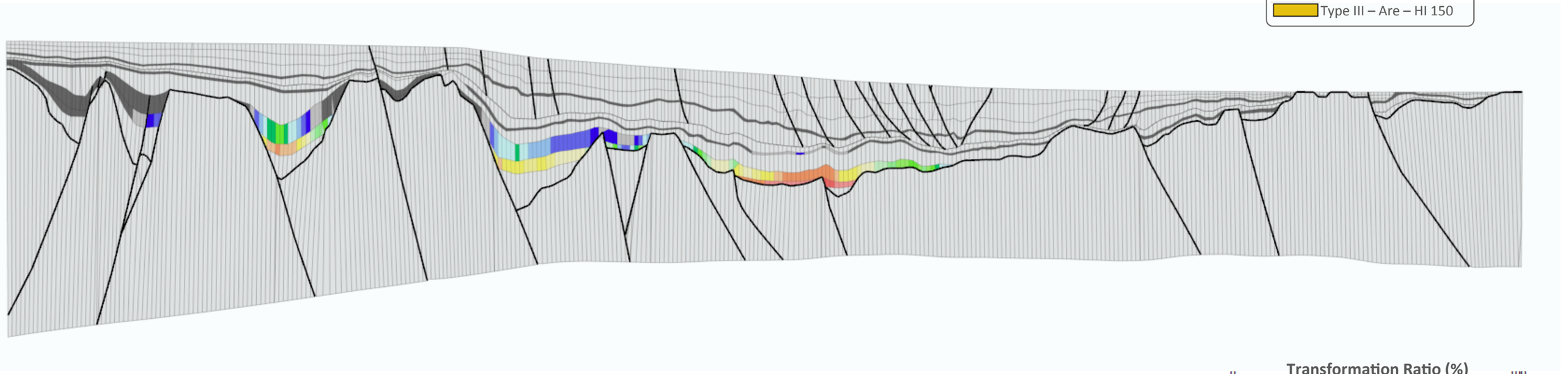
Source Rock **Maturity**

47 Ma

KEROGENS



TRANSFORMATION RATIO



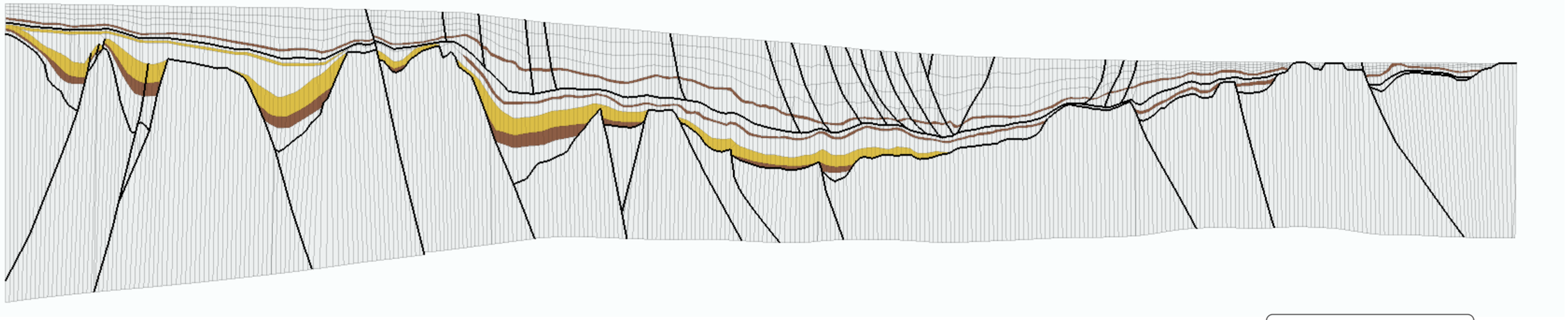
Vertical Exageration x4

0 25 50 km

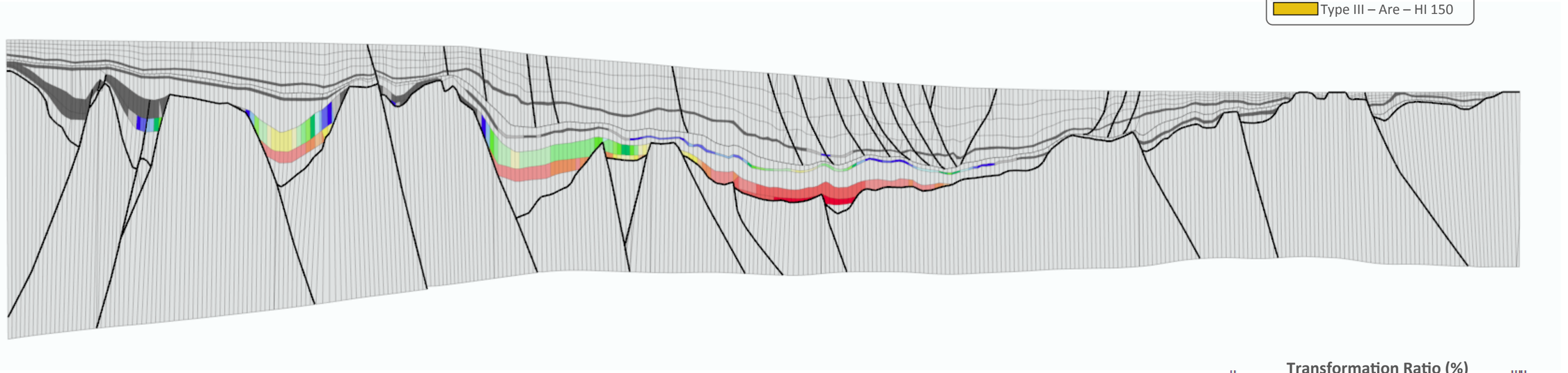
Source Rock **Maturity**

45 Ma

KEROGENS



TRANSFORMATION RATIO



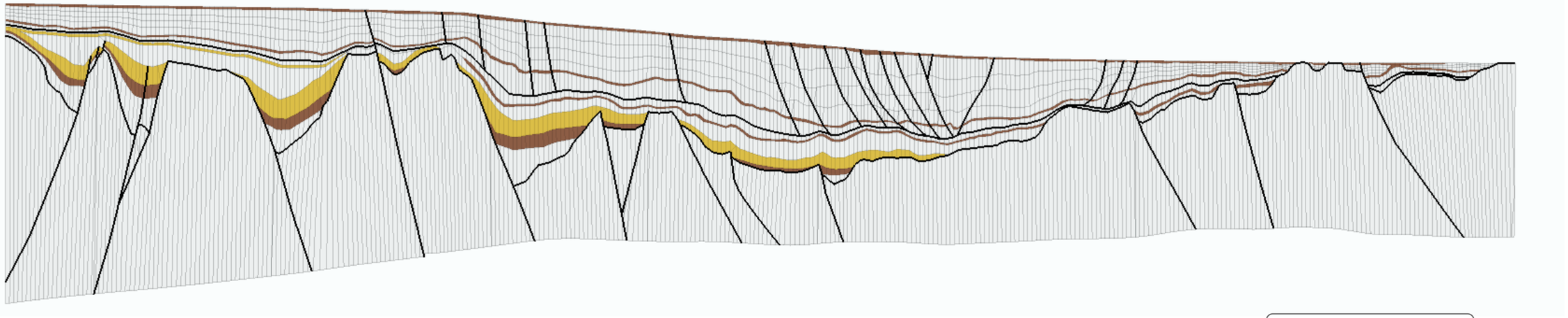
Vertical Exageration x4

0 25 50 km

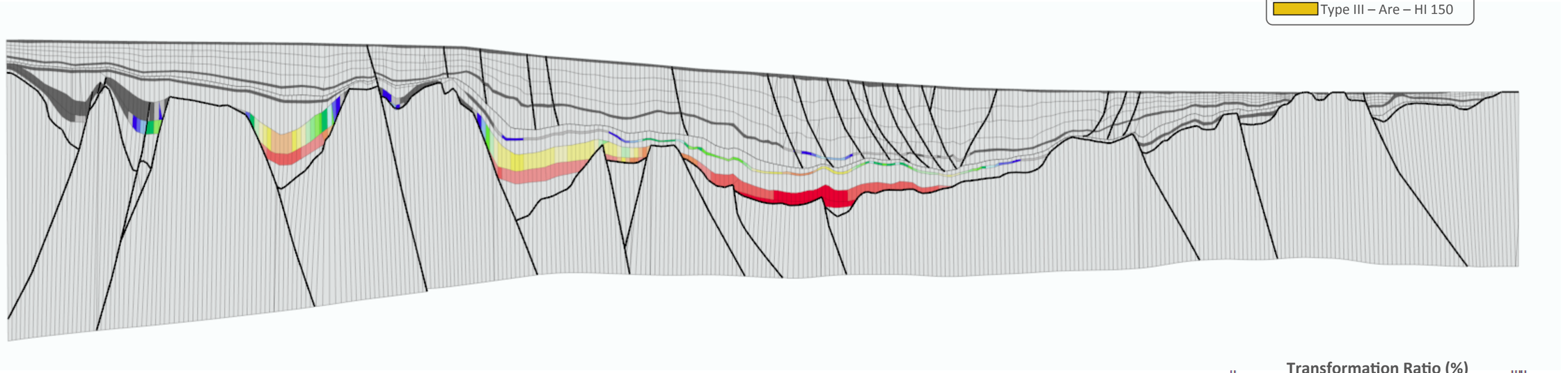
Source Rock **Maturity**

44 Ma

KEROGENS



TRANSFORMATION RATIO



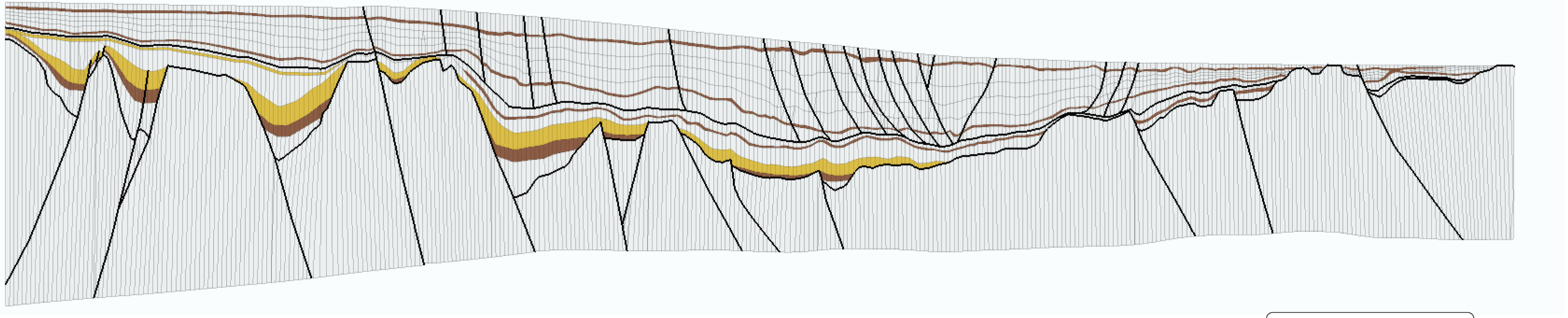
Vertical Exageration x4

0 25 50 km

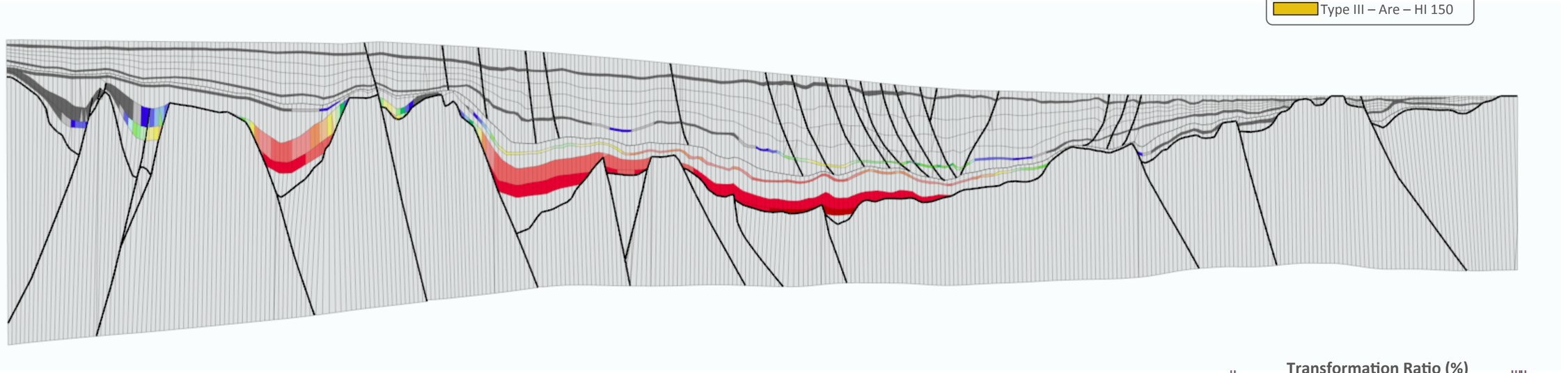
Source Rock **Maturity**

39 Ma

KEROGENS



TRANSFORMATION RATIO



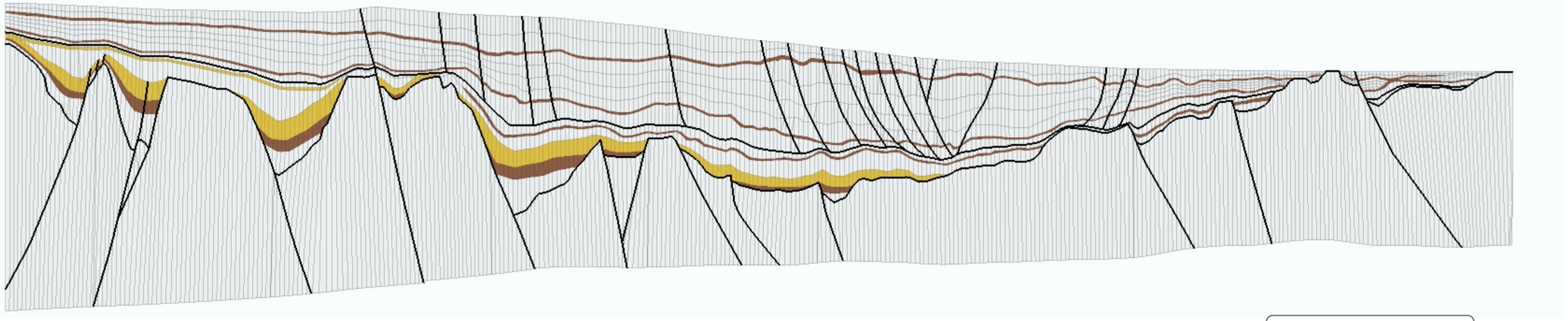
Vertical Exageration x4

0 25 50 km

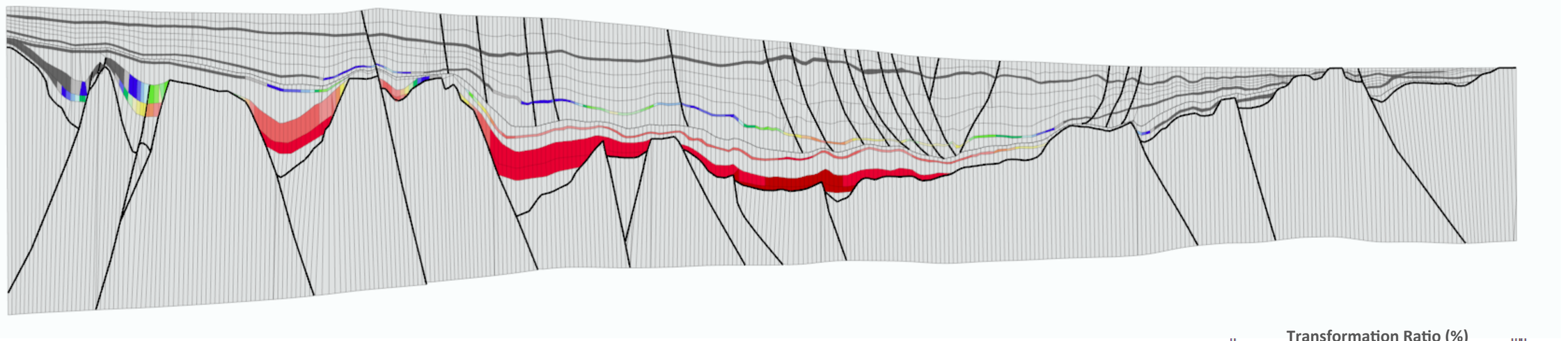
Source Rock **Maturity**

34 Ma

KEROGENS



TRANSFORMATION RATIO



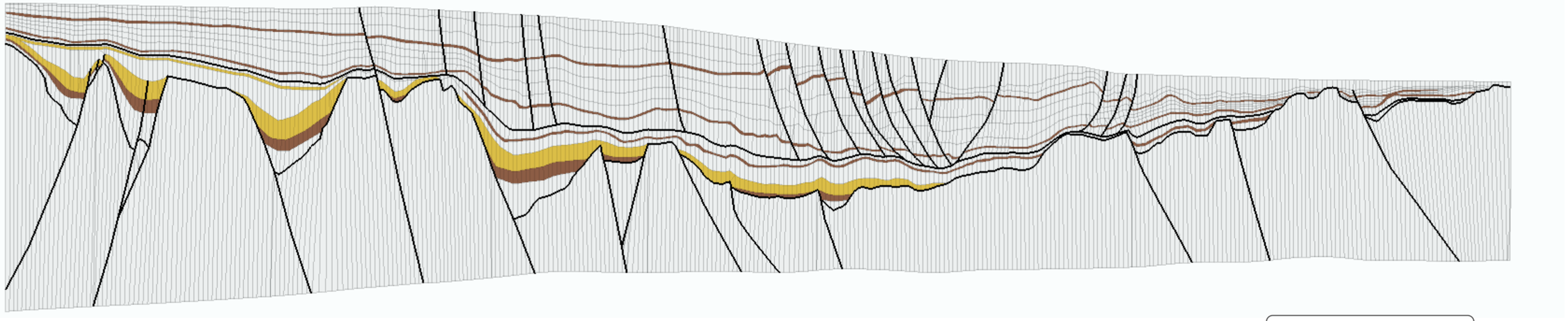
Vertical Exageration x4

0 25 50 km

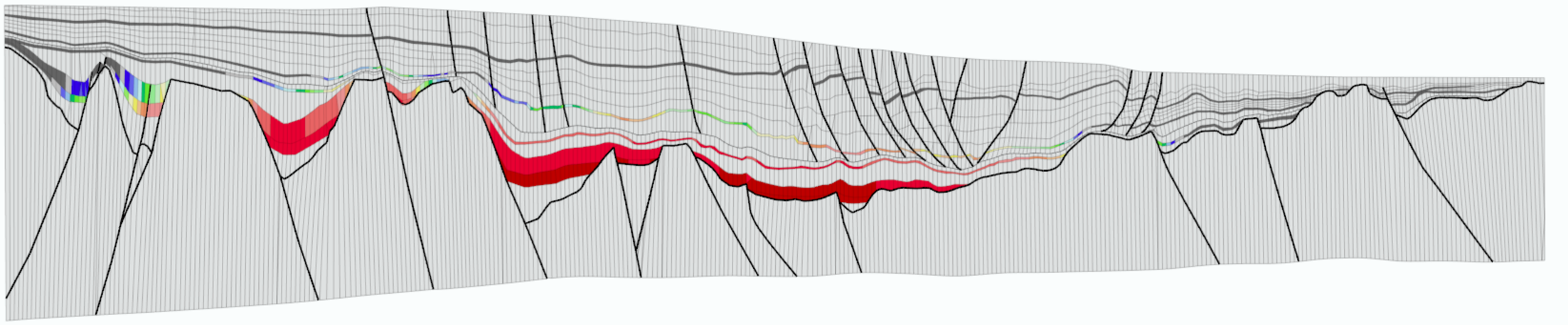
Source Rock **Maturity**

30 Ma

KEROGENS



TRANSFORMATION RATIO



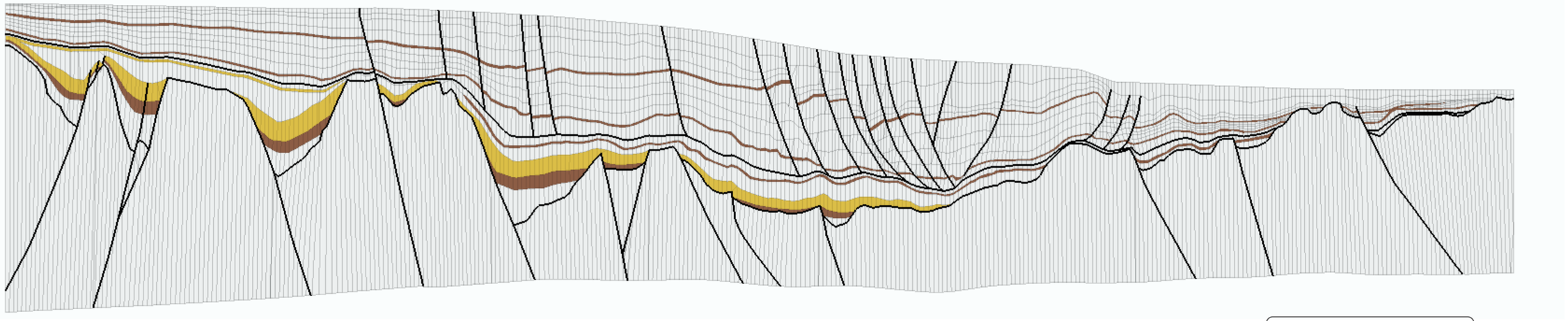
Vertical Exageration x4

0 25 50 km

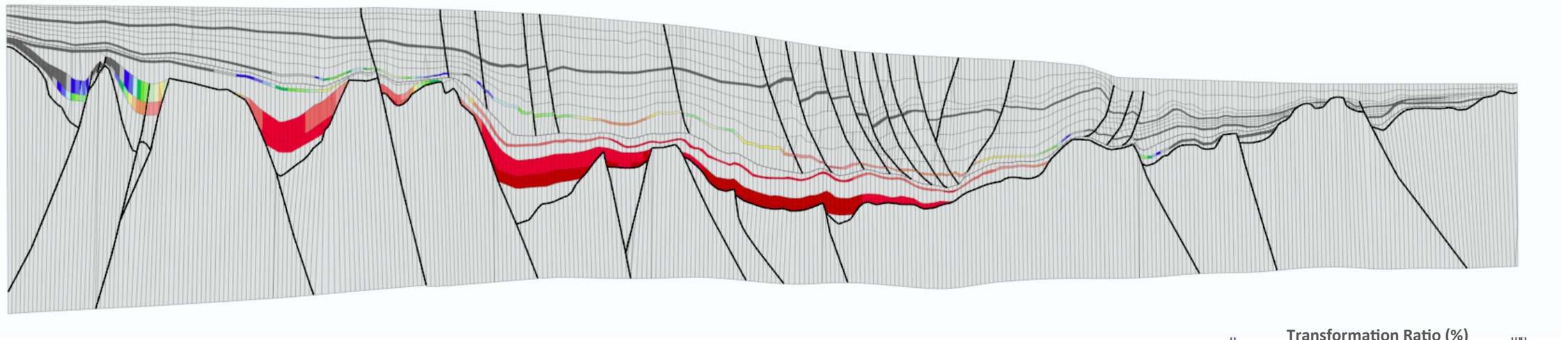
Source Rock **Maturity**

27 Ma

KEROGENS



TRANSFORMATION RATIO



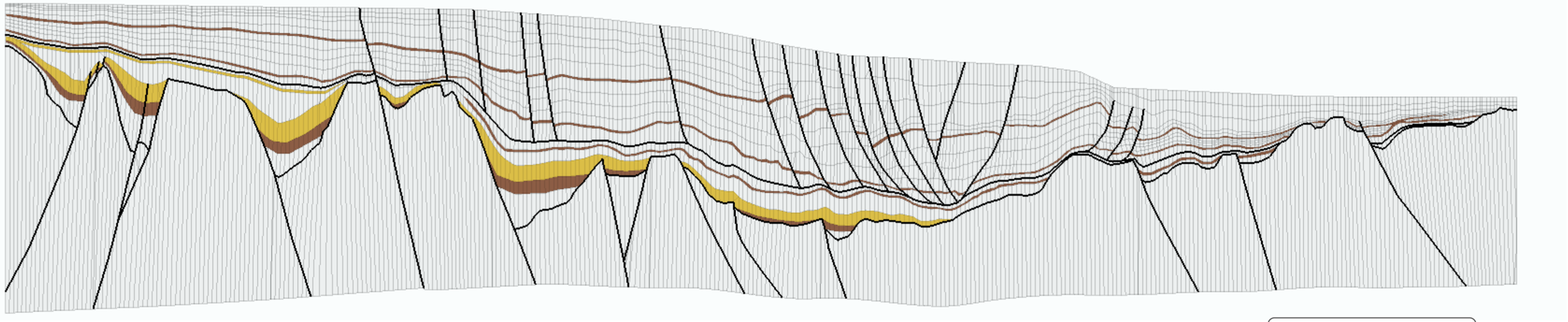
Vertical Exageration x4

0 25 50 km

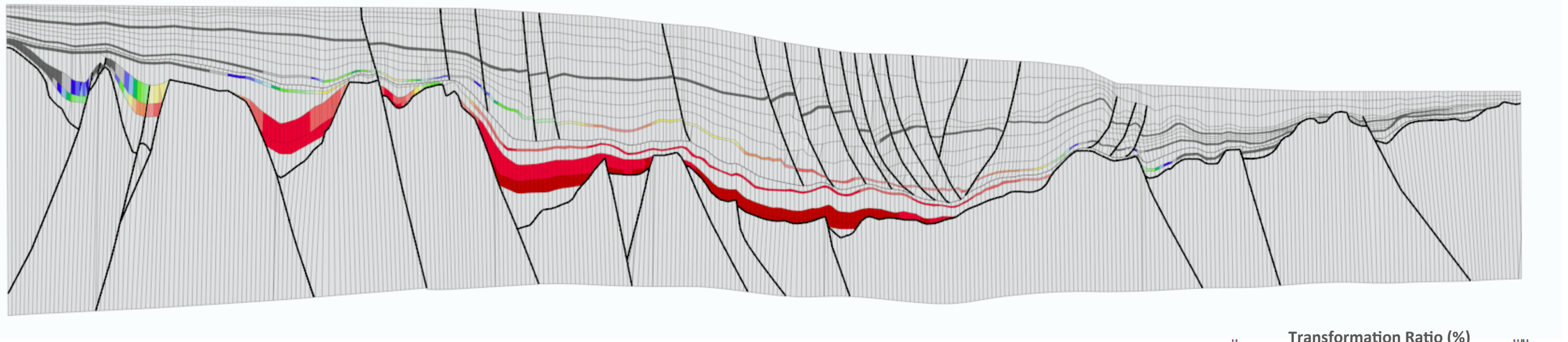
Source Rock **Maturity**

24 Ma

KEROGENS



TRANSFORMATION RATIO



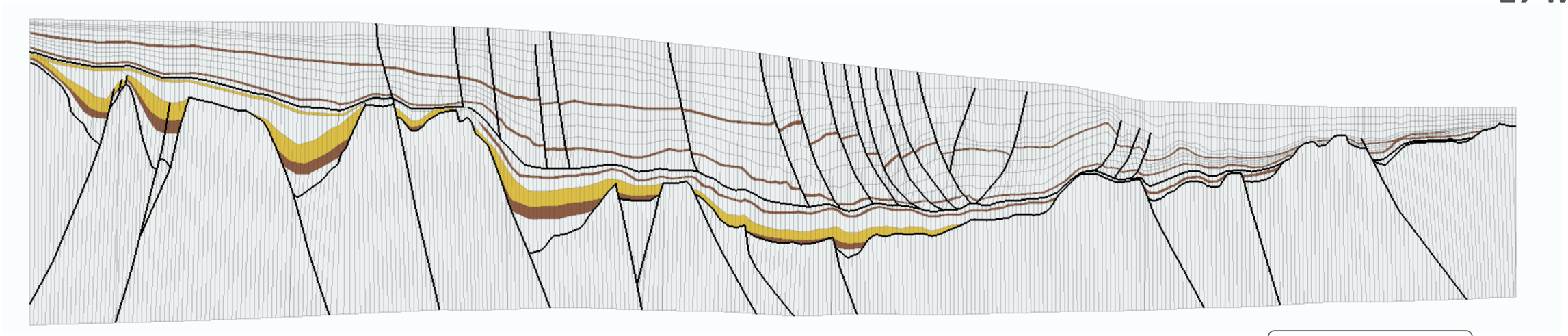
Vertical Exageration x4

0 25 50 km

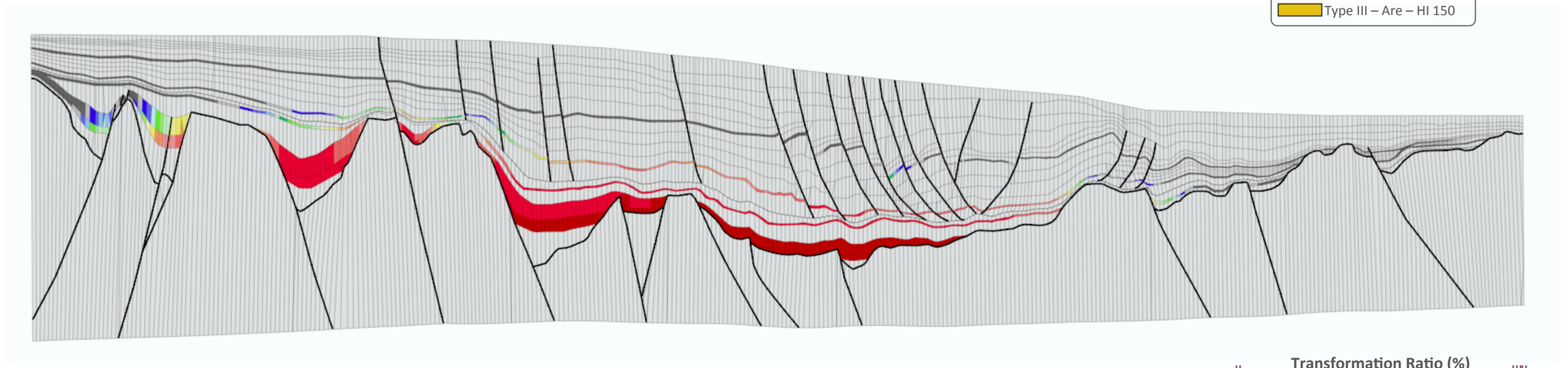
Source Rock **Maturity**

17 Ma

KEROGENS



TRANSFORMATION RATIO



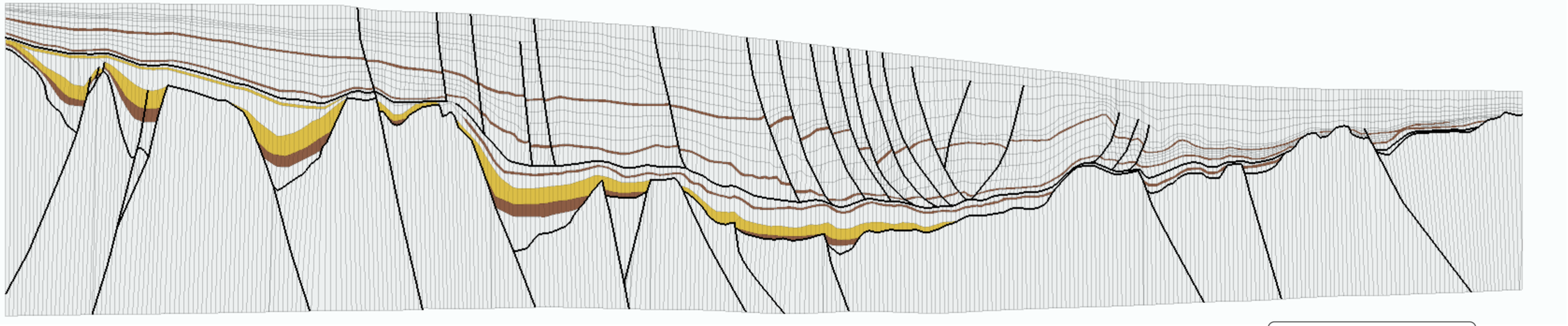
Vertical Exageration x4

0 25 50 km

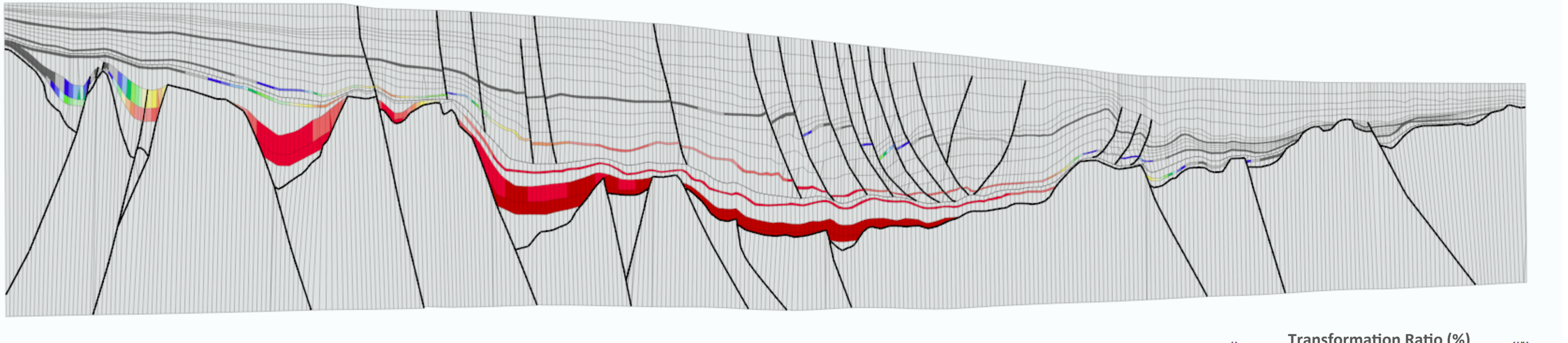
Source Rock **Maturity**

10 Ma

KEROGENS



TRANSFORMATION RATIO



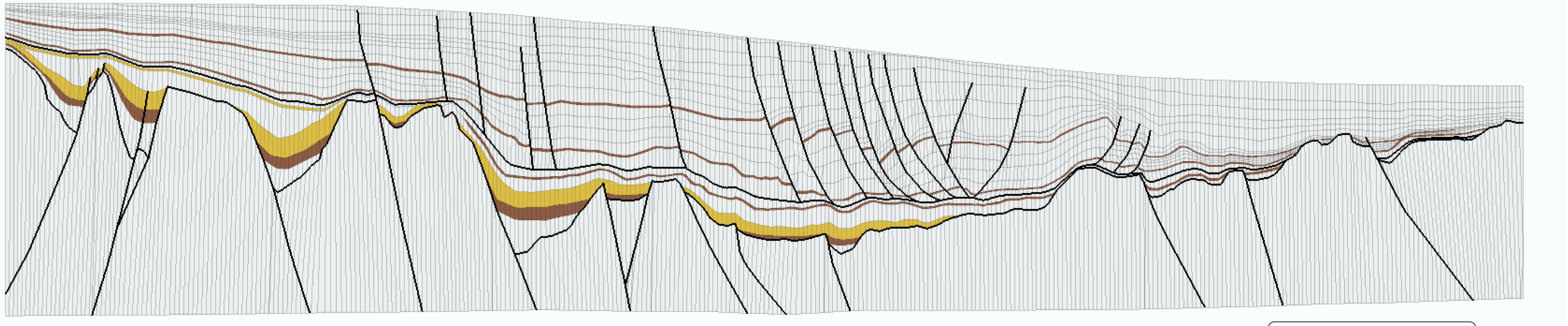
Vertical Exageration x4

0 25 50 km

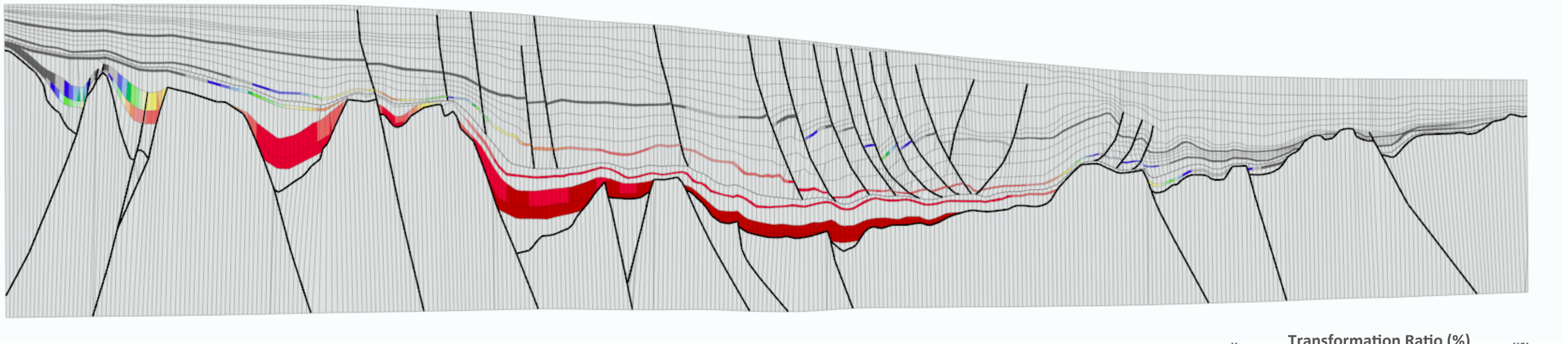
Source Rock **Maturity**

8 Ma

KEROGENS



TRANSFORMATION RATIO



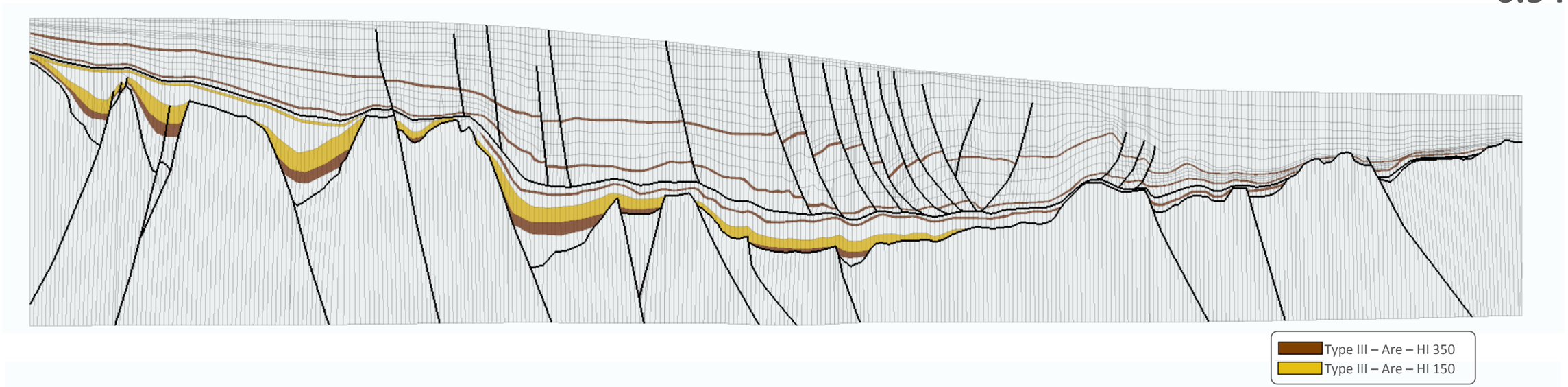
Vertical Exageration x4

0 25 50 km

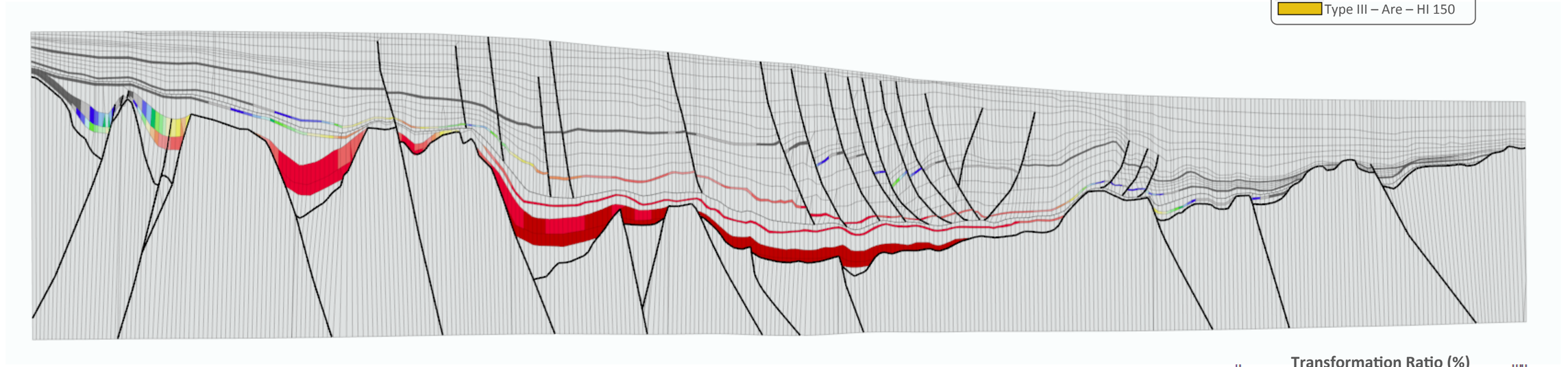
Source Rock **Maturity**

6.5 Ma

KEROGENS



TRANSFORMATION RATIO



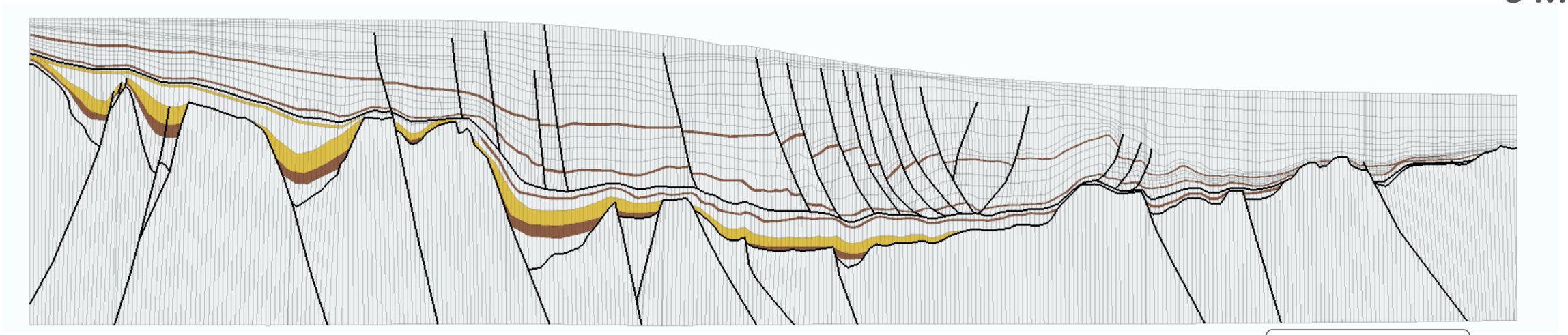
Vertical Exageration x4

0 25 50 km

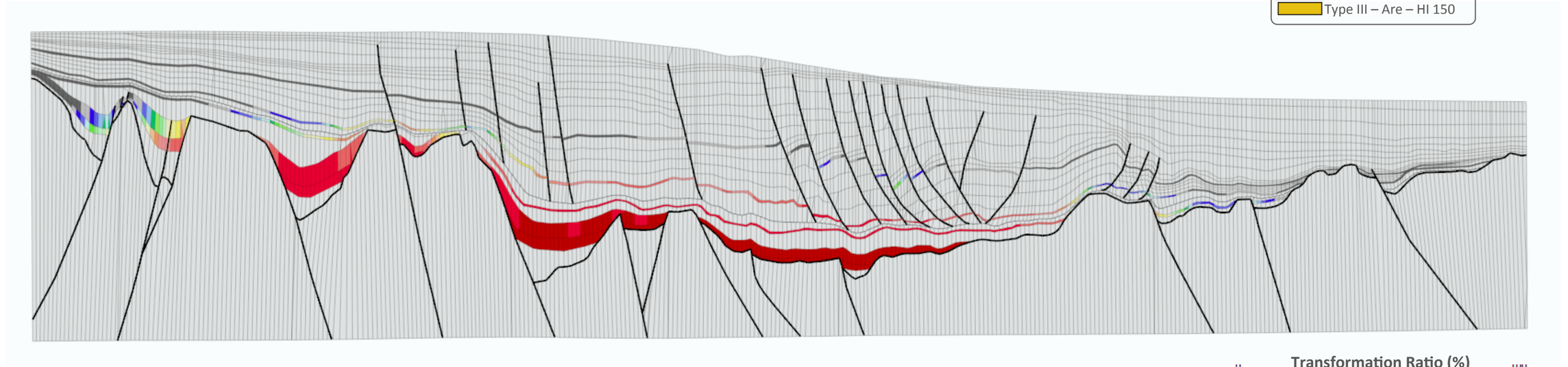
Source Rock **Maturity**

3 Ma

KEROGENS



TRANSFORMATION RATIO



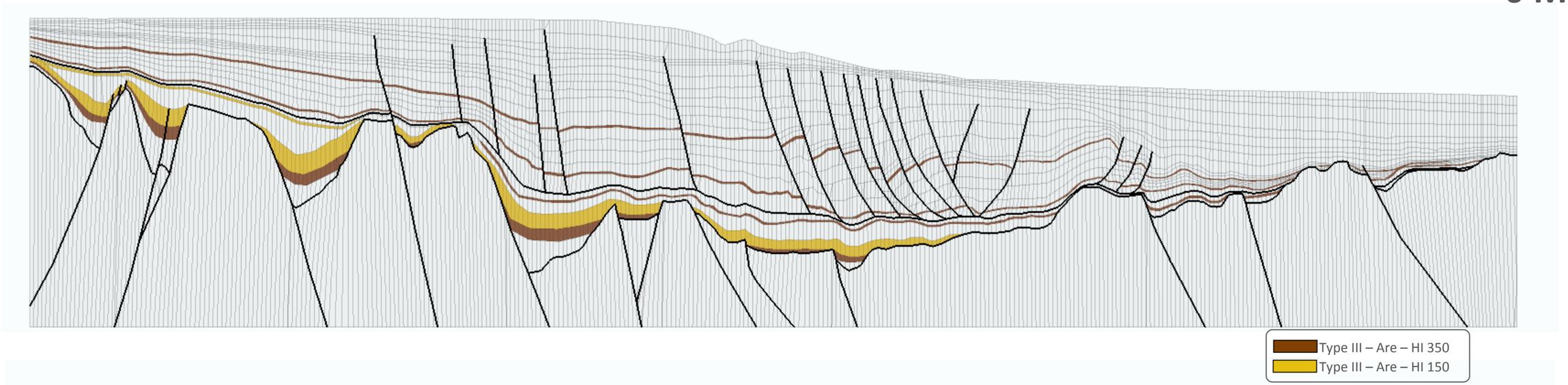
Vertical Exageration x4

0 25 50 km

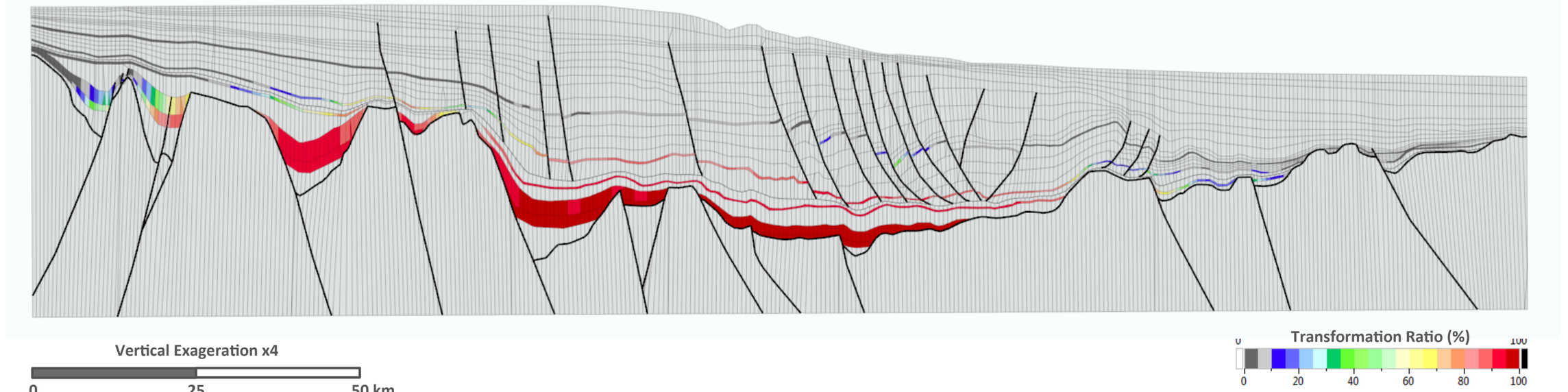
Source Rock **Maturity**

0 Ma

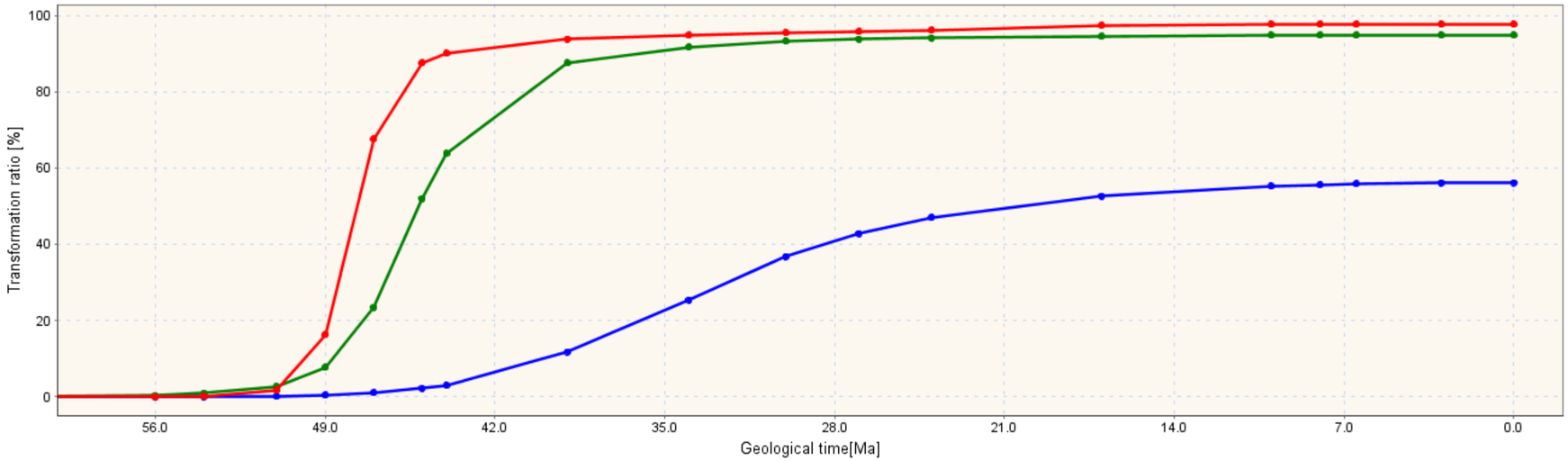
KEROGENS



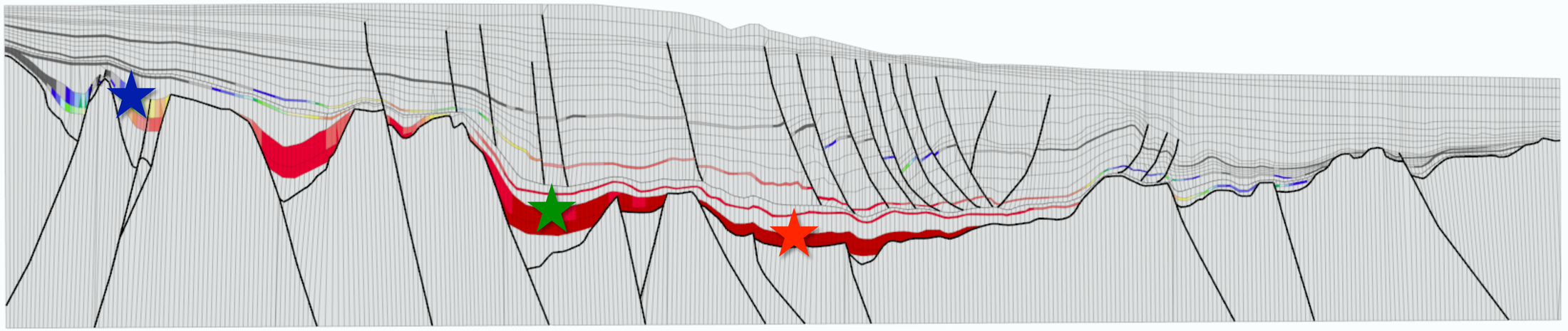
TRANSFORMATION RATIO



Source Rock **Maturity**



TRANSFORMATION RATIO



Vertical Exageration x4

0 25 50 km

Transformation Ratio (%)

0 20 40 60 80 100

PORE PRESSURE REGIME

Fault Behavior

Two scenarios are tested:

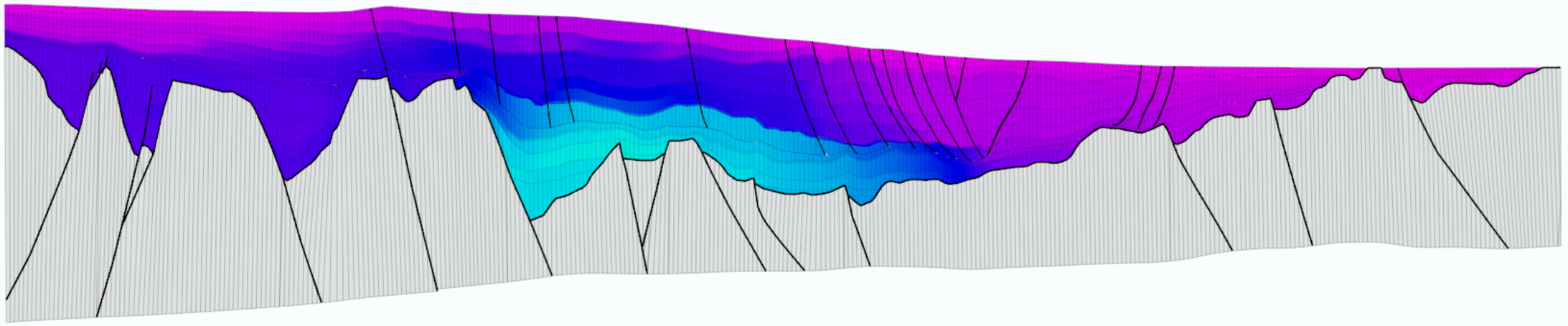
1. One where the faults remain « **transparent** » through time.
   - Their behavior therefore just depends on the evolution of the units in contact as the faults move.

2. A second one where the faults become **impermeable** when the faults are active.
   - No flow is allowed through the faults from 34Ma.

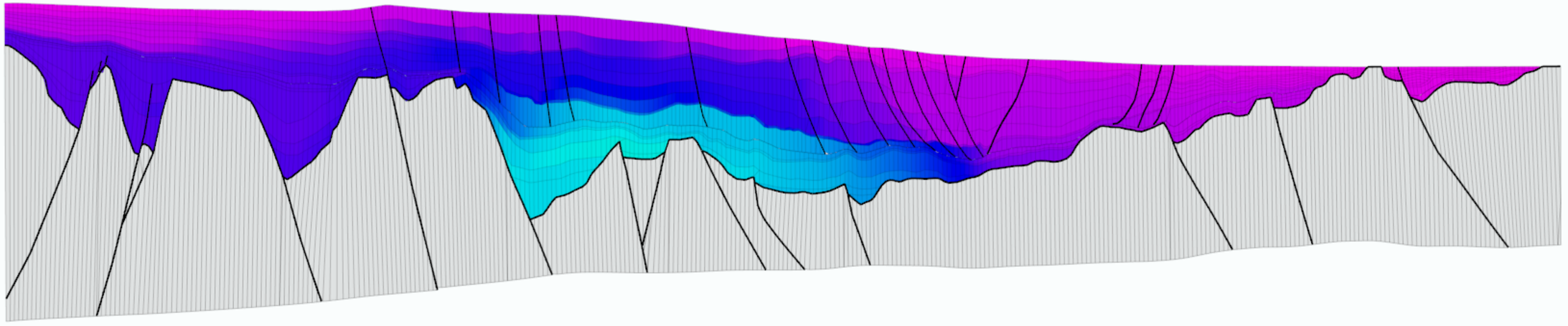
Water **OverPressure** Regime

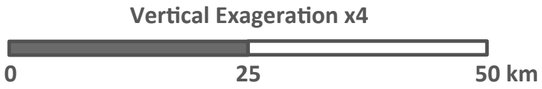
34 Ma

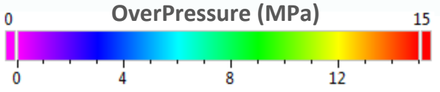
TRANSPARENT FAULTS



IMPERMEABLE FAULTS



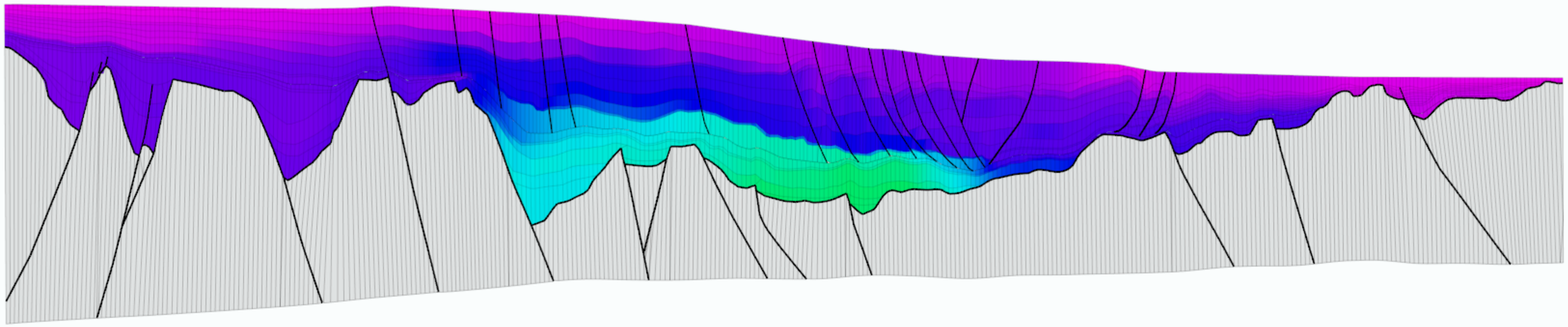




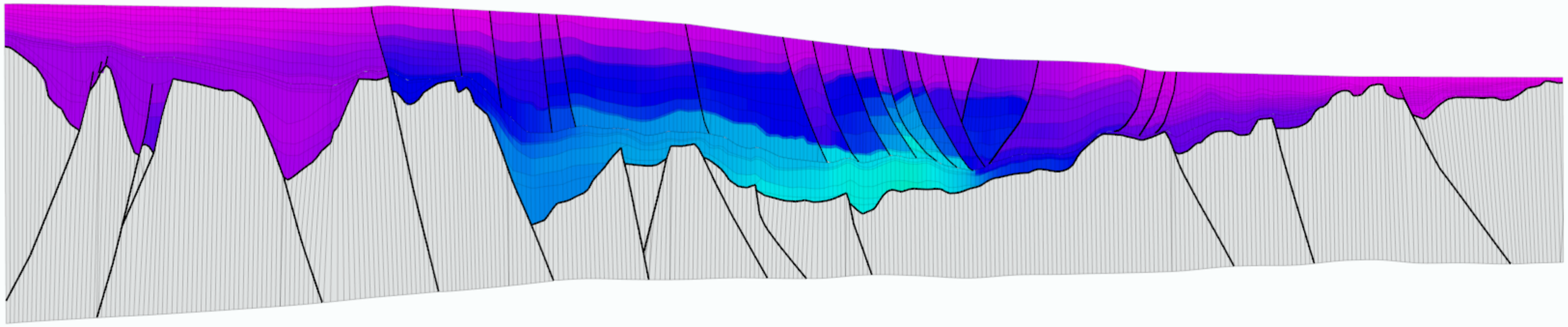
Water **OverPressure** Regime

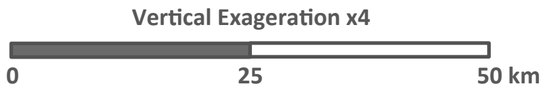
30 Ma

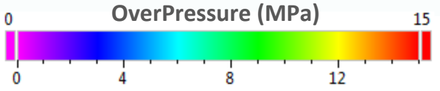
TRANSPARENT FAULTS



IMPERMEABLE FAULTS



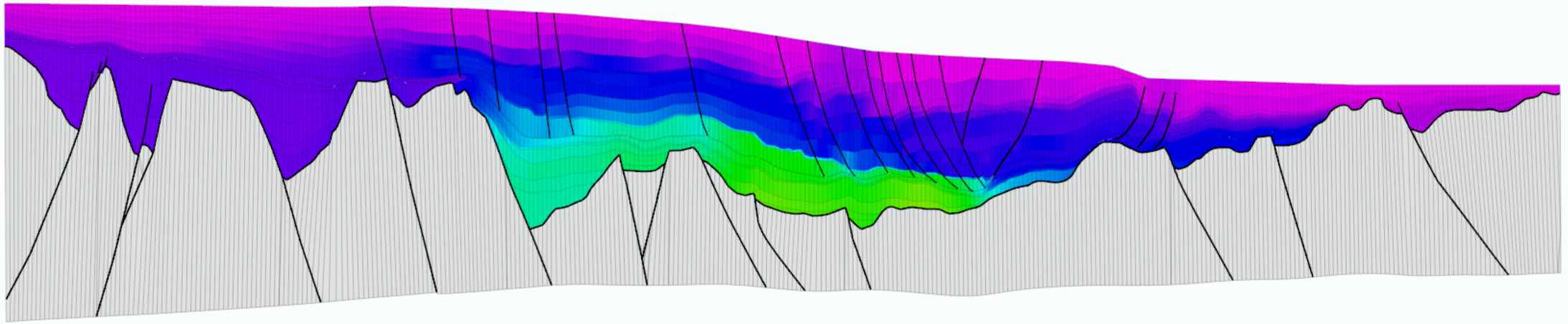




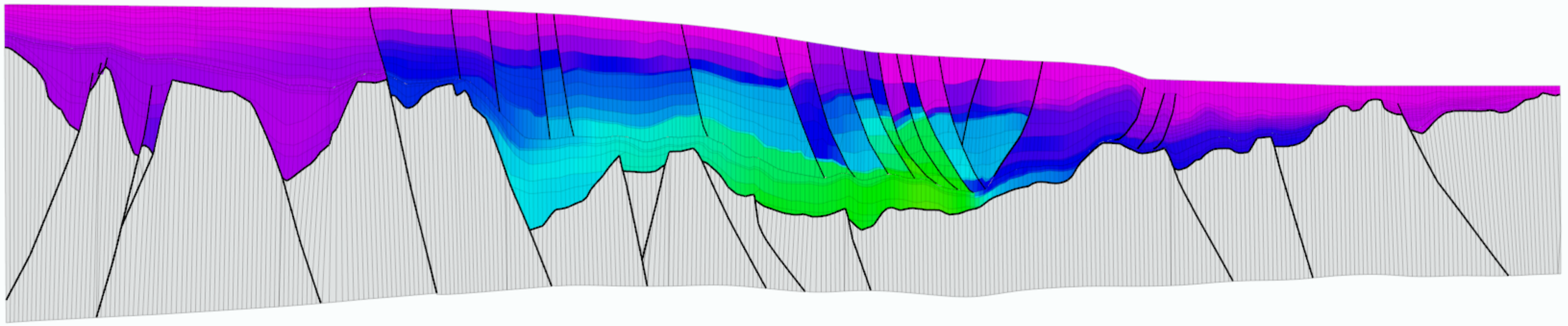
Water **OverPressure** Regime

27 Ma

TRANSPARENT FAULTS



IMPERMEABLE FAULTS



Vertical Exageration x4

0 25 50 km

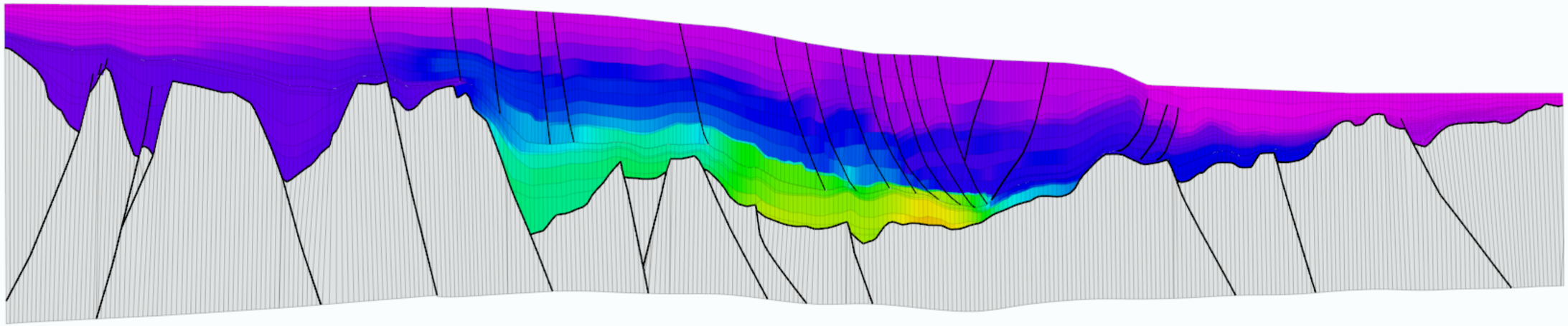
OverPressure (MPa)

0 4 8 12 15

Water **OverPressure** Regime

24 Ma

TRANSPARENT FAULTS



IMPERMEABLE FAULTS