

Appendix E: 2D Modelling Results

The following figures are the results from the NovaSPAN line 2D models. These cross-sections show the heat flow, the temperature, the maturity, the transformation ratio and the critical moment of the potential Lower Jurassic source rock. The heat flow output shows the distribution of vertical heat flow within the model. The temperature output shows the temperature distribution within the model. The maturity output is a calculated vitrinite reflectance of the model based on the EASY%Ro algorithm (Sweeney and Burnham, 1990). The transformation ratio shows the percentage of the total potential primary generation of the potential Lower Jurassic source rock that has been generated. The critical moment in this study is shown as the time when the source rock reached 20% transformation ratio, an estimate of the time at which the petroleum system becomes effective regarding generation, migration and accumulation.

E.1 NovaSPAN 1100

Heat flow

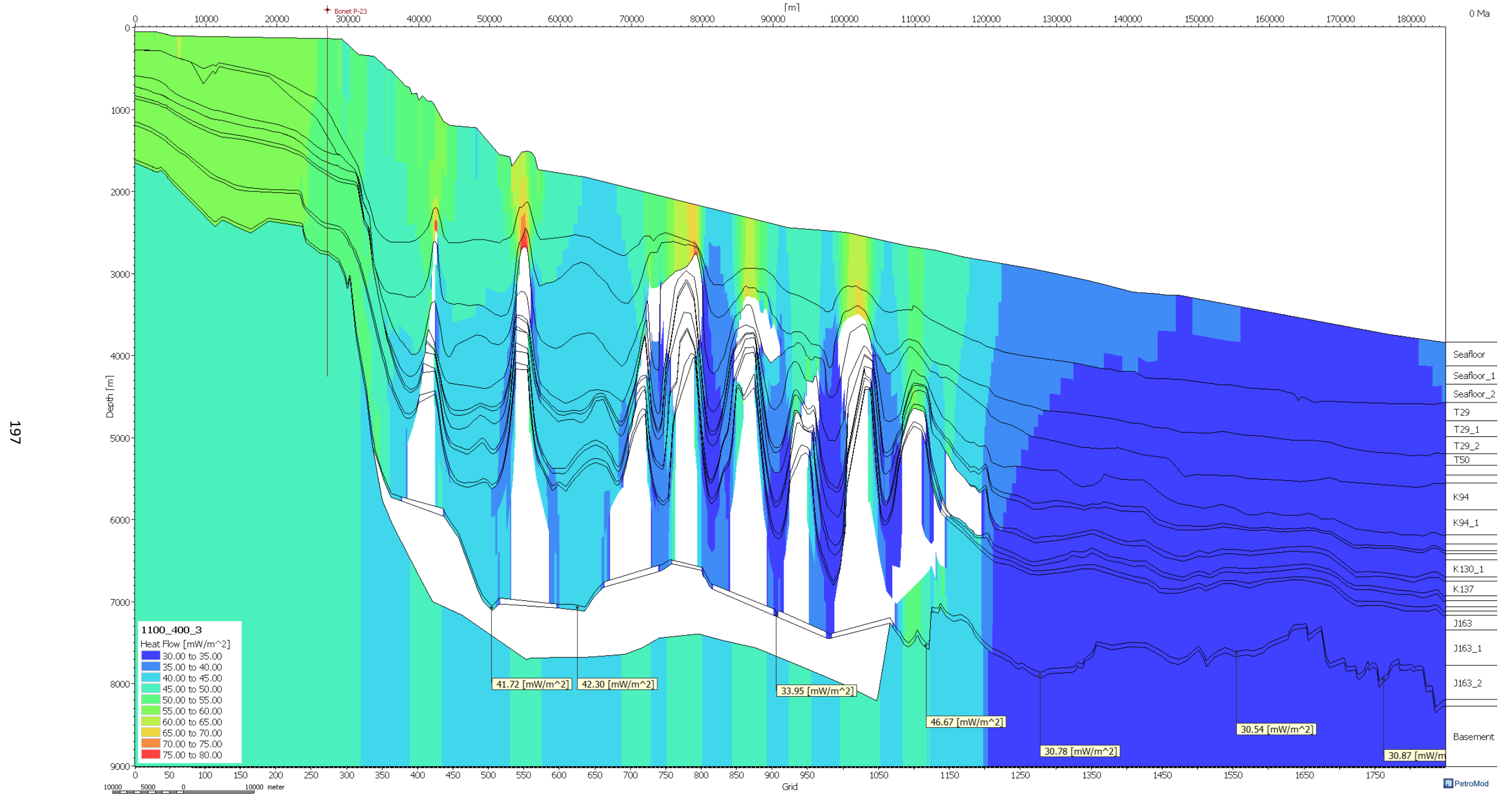


Figure E.1: Model of heat flow distribution for NovaSPAN 1100 line. The data points indicate the heat flow value of the potential Lower Jurassic source rock layer. The white areas are the salt structures from the Argo Formation.

Temperature

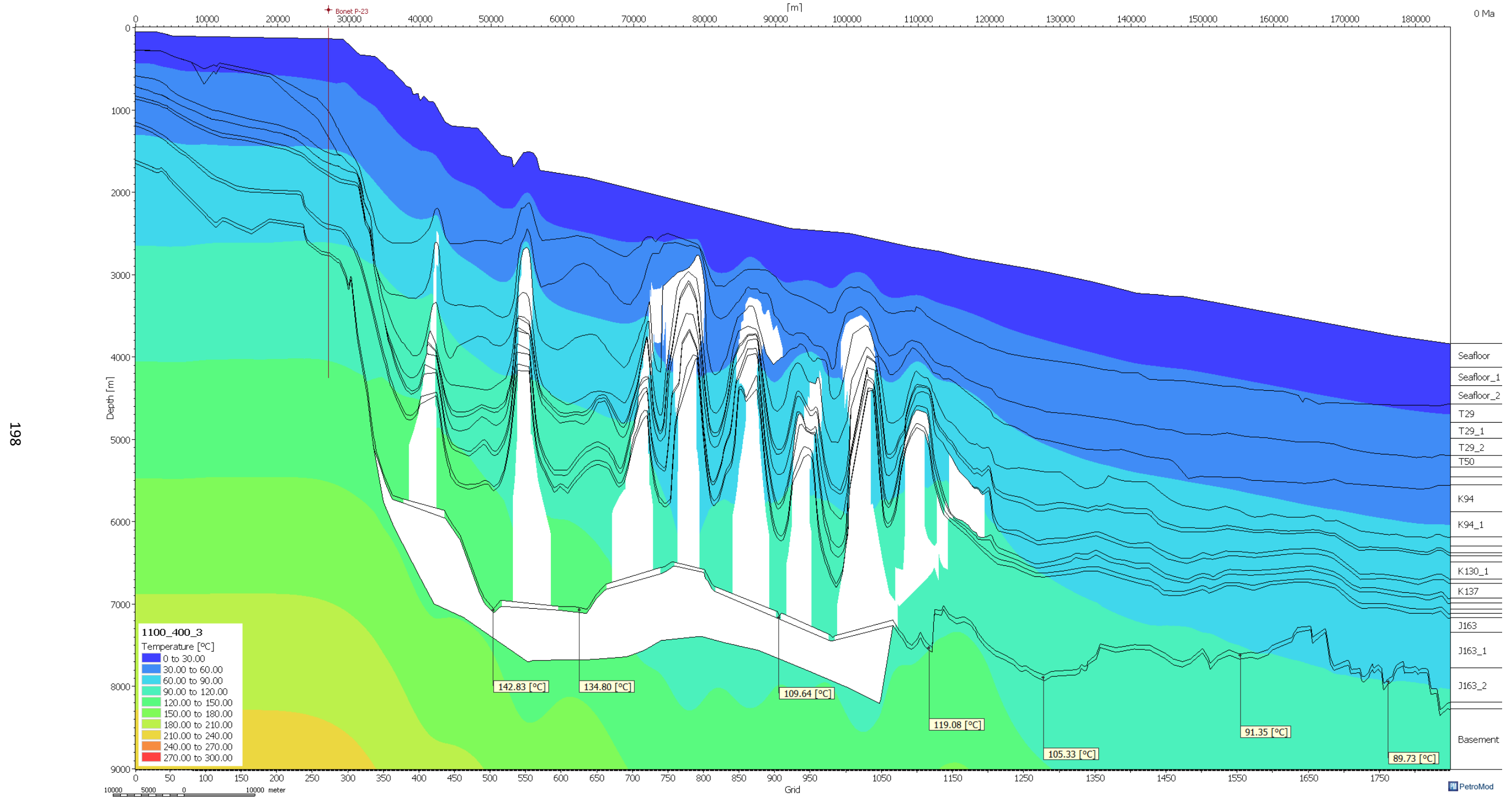


Figure E.2: Model of temperature distribution for NovaSPAN 1100 line. The data points indicate the temperature value of the potential Lower Jurassic source rock layer. The white areas are the salt structures from the Argo Formation.

Vitrinite Reflectance

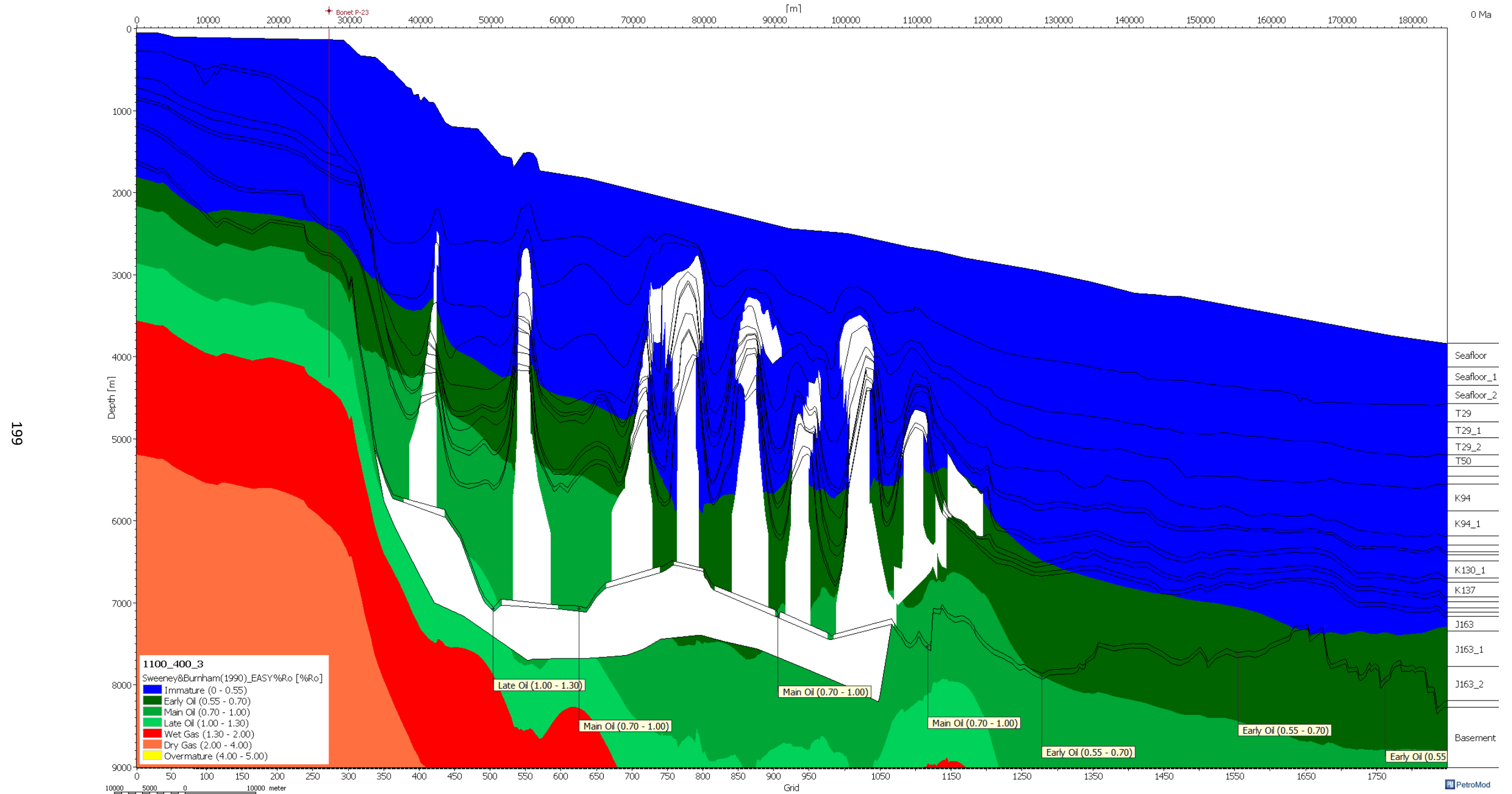


Figure E.3: Model of Vitrinite reflectance distribution for NovaSPAN 1100. The data points indicate the Vitrinite reflectance value based on the Sweeney and Burnham (1990) algorithm for the potential Lower Jurassic source rock layer. The white areas are the salt structures from the Argo Formation. The potential Lower Jurassic source rock is in the oil window.

Transformation Ratio – Pliensbachian Source Rock (Kerogen Type III)

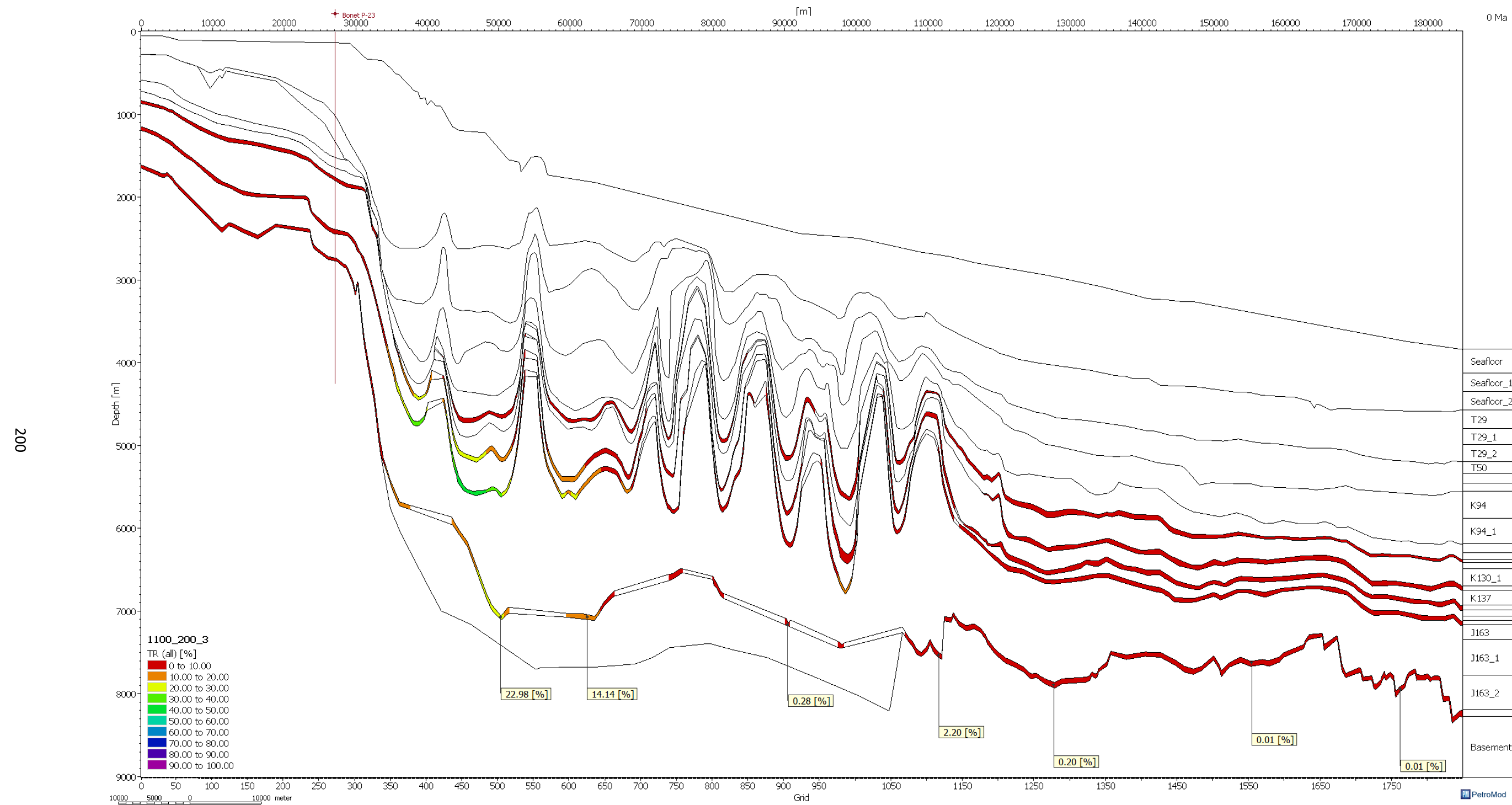


Figure E.4: Model of transformation ratio for Pliensbachian source rock (Type III) for NovaSPAN 1100 line. Here we can observe the five different source rocks in the model; the Lower Jurassic source rock is the bottommost layer. The data points indicate the percentage of the value of hydrocarbons generated from the potential Lower Jurassic source rock layer.

Transformation Ratio – Pliensbachian Source Rock (Kerogen Type II)

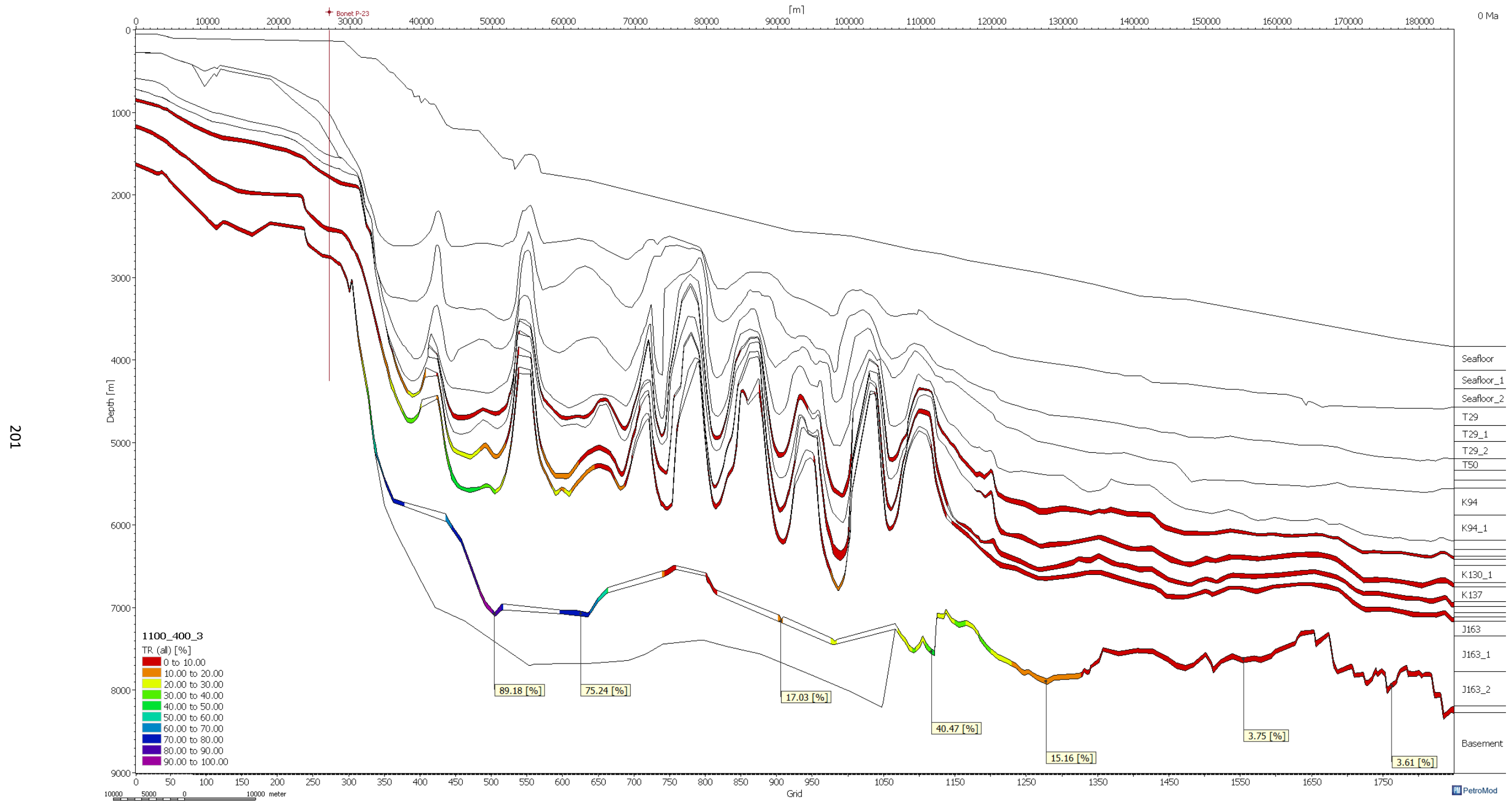


Figure E.5: Model of transformation ratio for Pliensbachian source rock (Type II) for NovaSPAN 1100 line. Here we can observe the five different source rocks in the model; the Lower Jurassic source rock is the bottommost layer. The data points indicate the percentage of the value of hydrocarbons generated from the potential Lower Jurassic source rock layer.

Transformation Ratio – Pliensbachian Source Rock (Kerogen Type I)

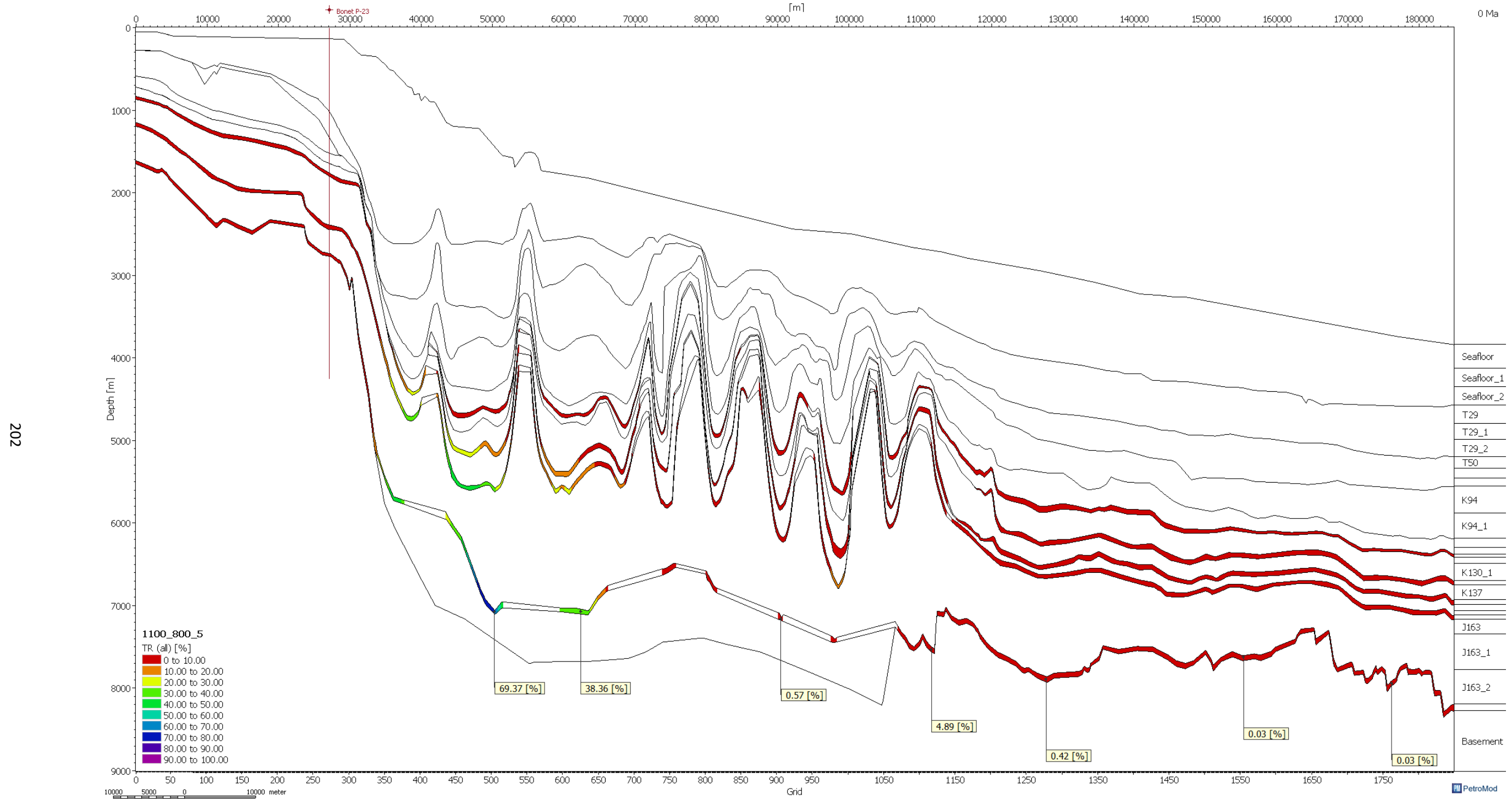


Figure E.6: Model of transformation ratio for Pliensbachian source rock (Type I) for NovaSPAN 1100 line. Here we can observe the five different source rocks in the model; the Lower Jurassic source rock is the bottommost layer. The data points indicate the percentage of the value of hydrocarbons generated from the potential Lower Jurassic source rock layer.

Critical Moment – Pliensbachian Source Rock (Kerogen Type III)

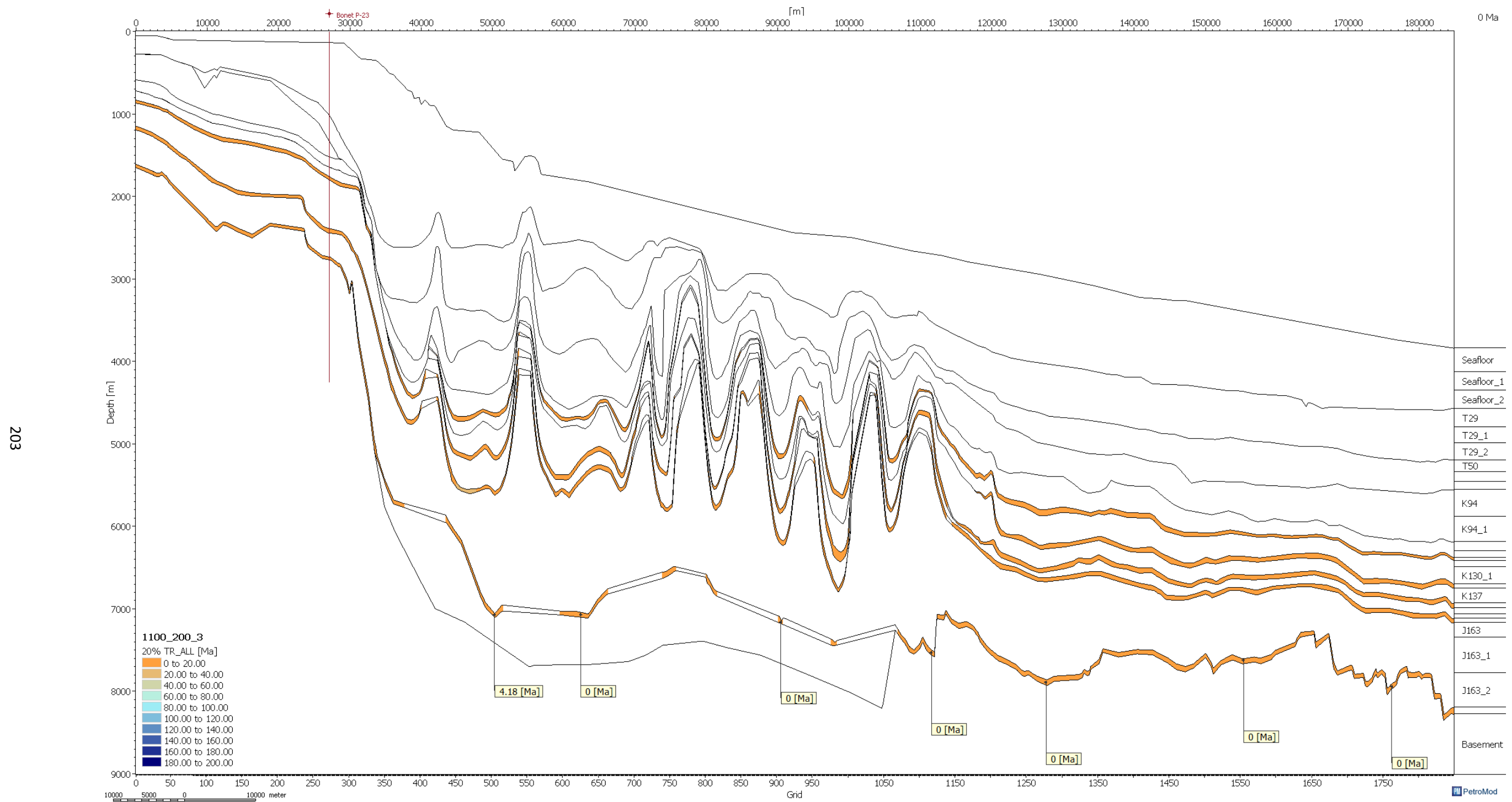


Figure E.7: Model of the critical moment for the Pliensbachian source rock (Type III) for NovaSPAN 1100 line. Here we can observe the five different source rocks in the model; the Lower Jurassic source rock is the bottommost layer. The data points indicate the critical moment age that the potential Lower Jurassic had generated hydrocarbons exceeding the threshold.

Critical Moment – Pliensbachian Source Rock (Kerogen Type II)

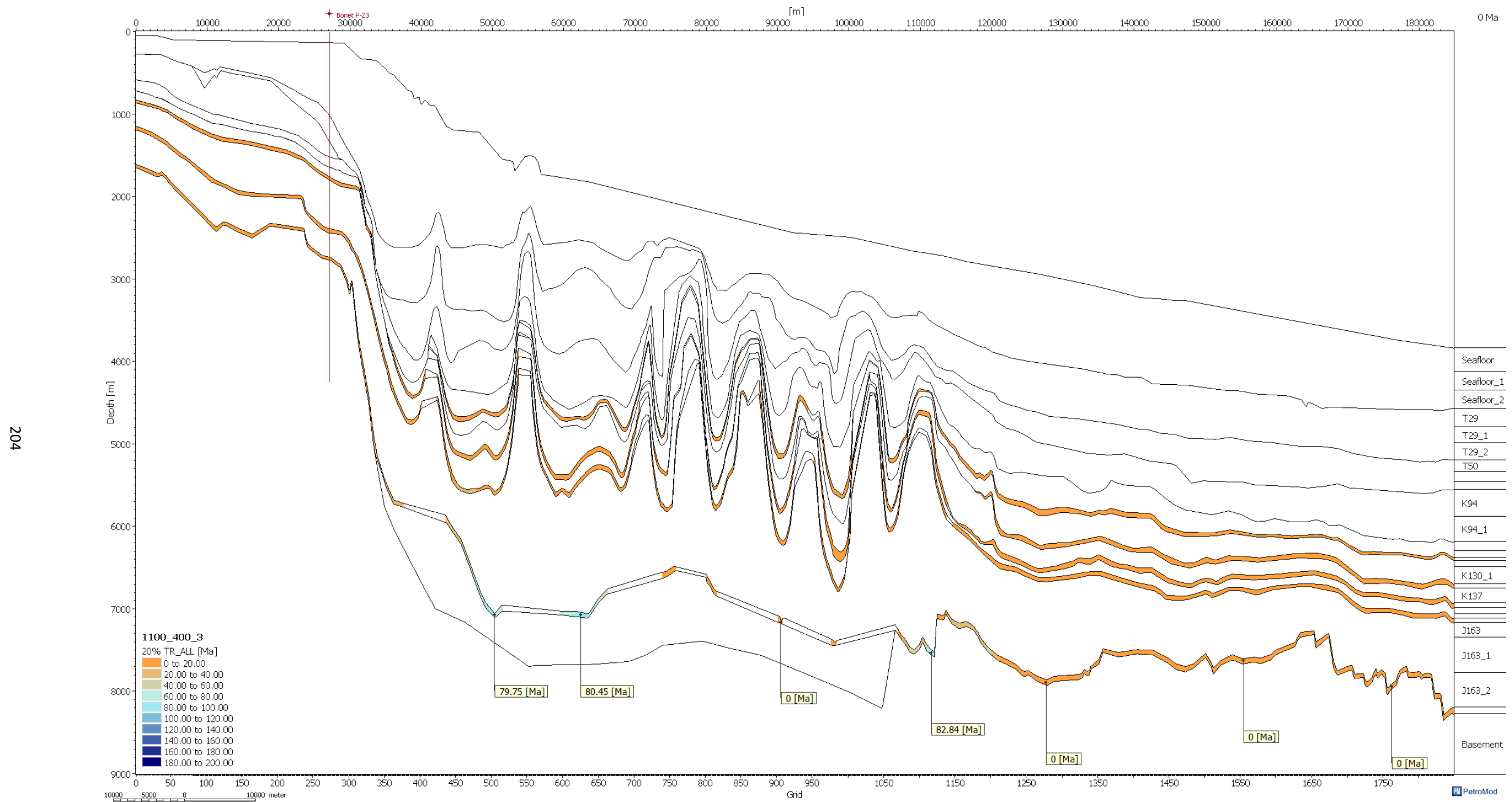
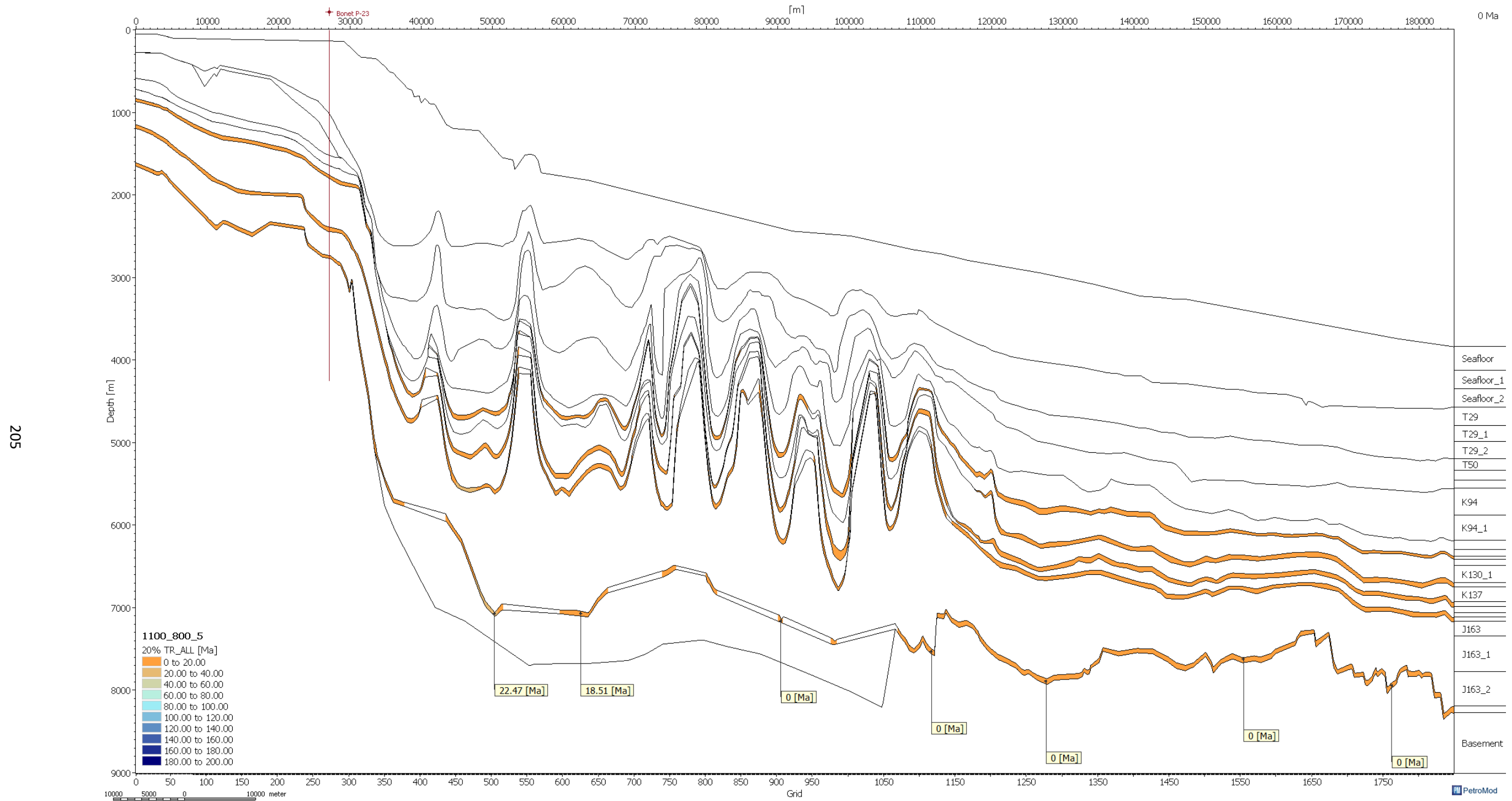


Figure E.8: Model of the critical moment for the Pliensbachian source rock (Type II) for NovaSPAN 1100 line. Here we can observe the five different source rocks in the model; the Lower Jurassic source rock is the bottommost layer. The data points indicate the critical moment age that the potential Lower Jurassic had generated hydrocarbons exceeding the threshold.

Critical Moment – Pliensbachian Source Rock (Kerogen Type I)



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Figure E.9: Model of the critical moment for the Pliensbachian source rock (Type I) for NovaSPAN 1100 line. Here we can observe the five different source rocks in the model; the Lower Jurassic source rock is the bottommost layer. The data points indicate the critical moment age that the potential Lower Jurassic had generated hydrocarbons exceeding the threshold.

E.2 NovaSPAN 1400

Heat flow

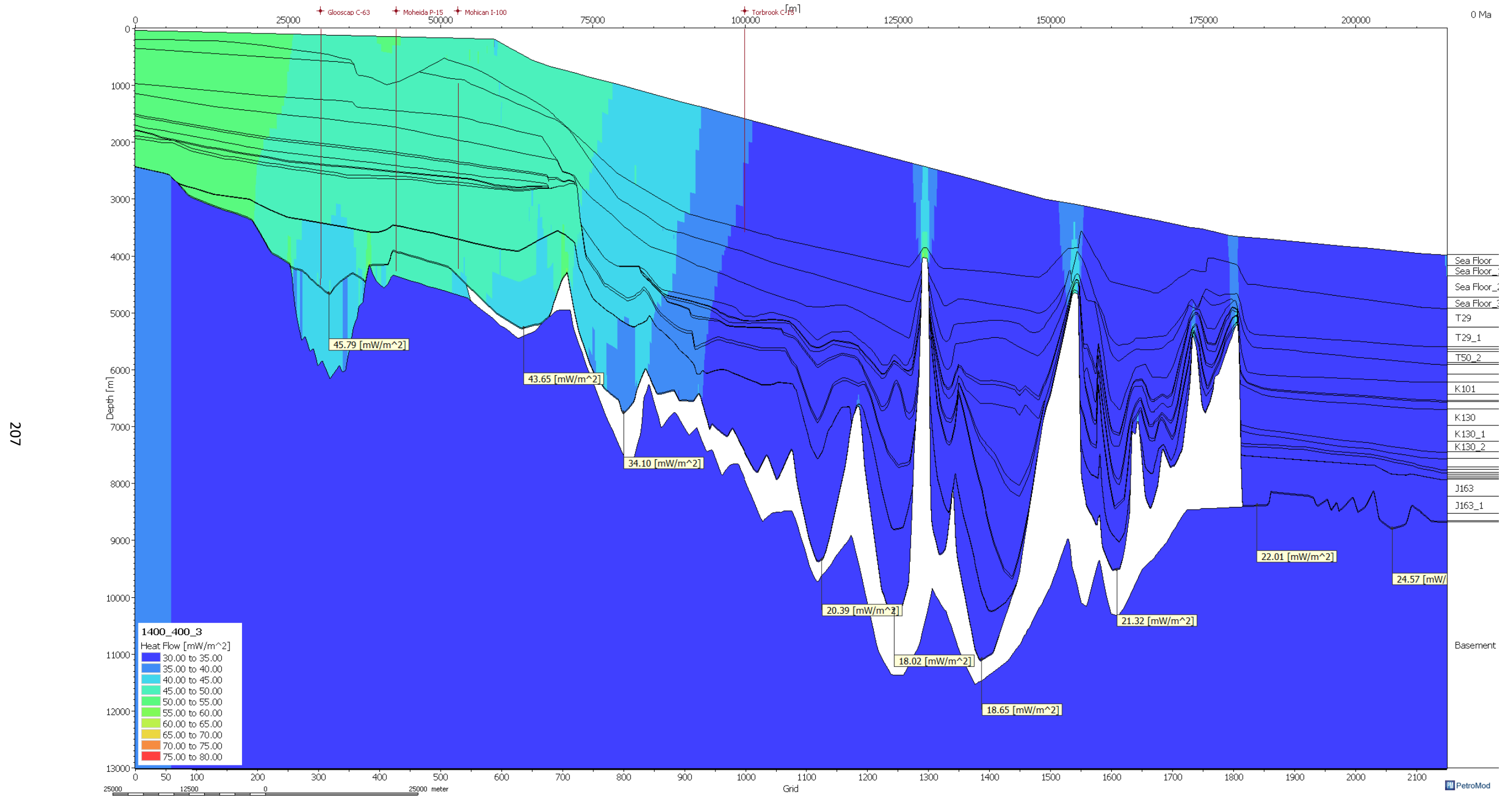


Figure E.10: Model of heat flow distribution for NovaSPAN 1400 line. The data points indicate the heat flow value of the potential Lower Jurassic source rock layer. The white areas are the salt structures from the Argo Formation.

Temperature

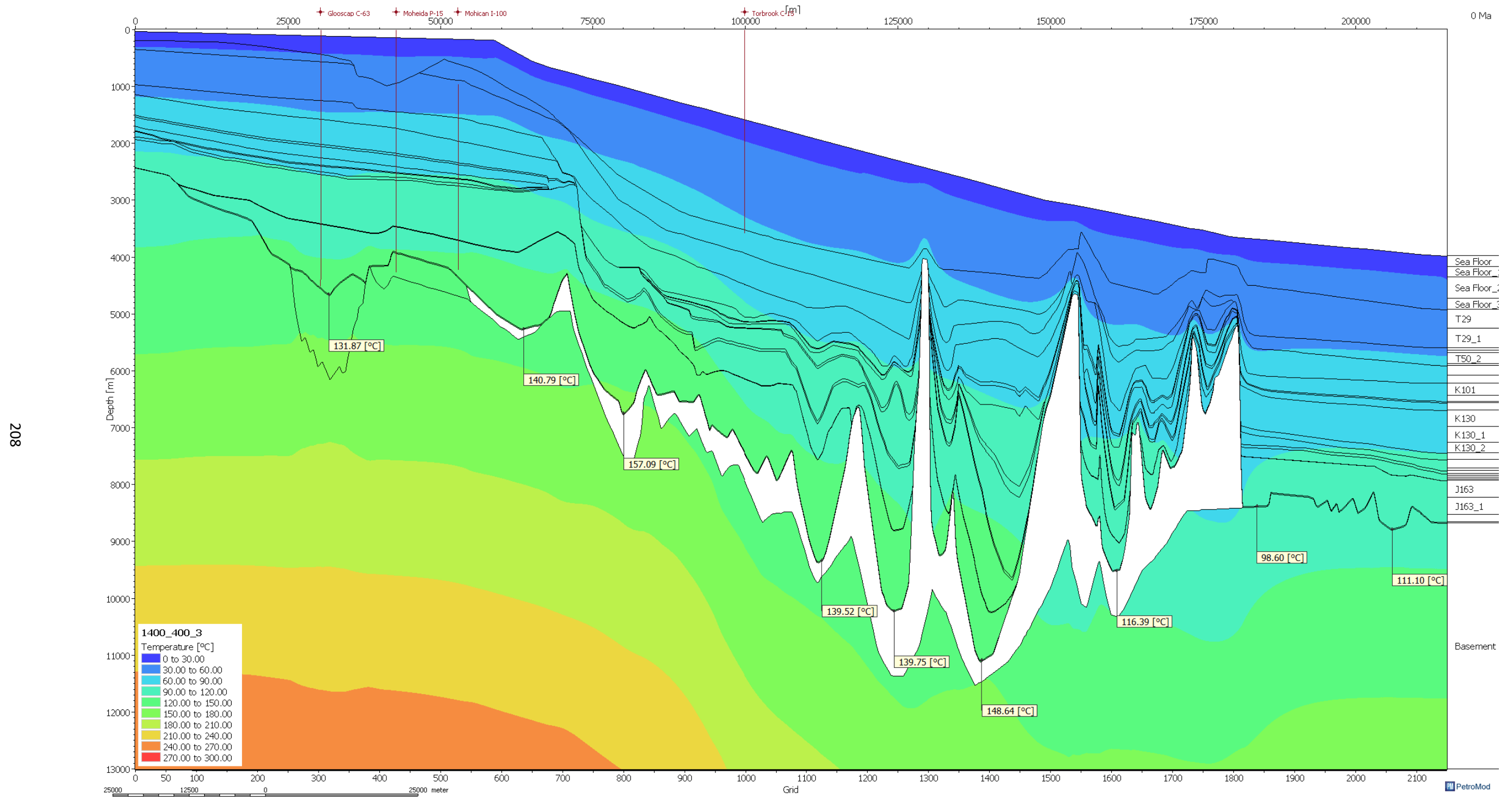


Figure E.11: Model of temperature distribution for NovaSPAN 1400 line. The data points indicate the temperature value of the potential Lower Jurassic source rock layer. The white areas are the salt structures from the Argo Formation.

Vitrinite Reflectance

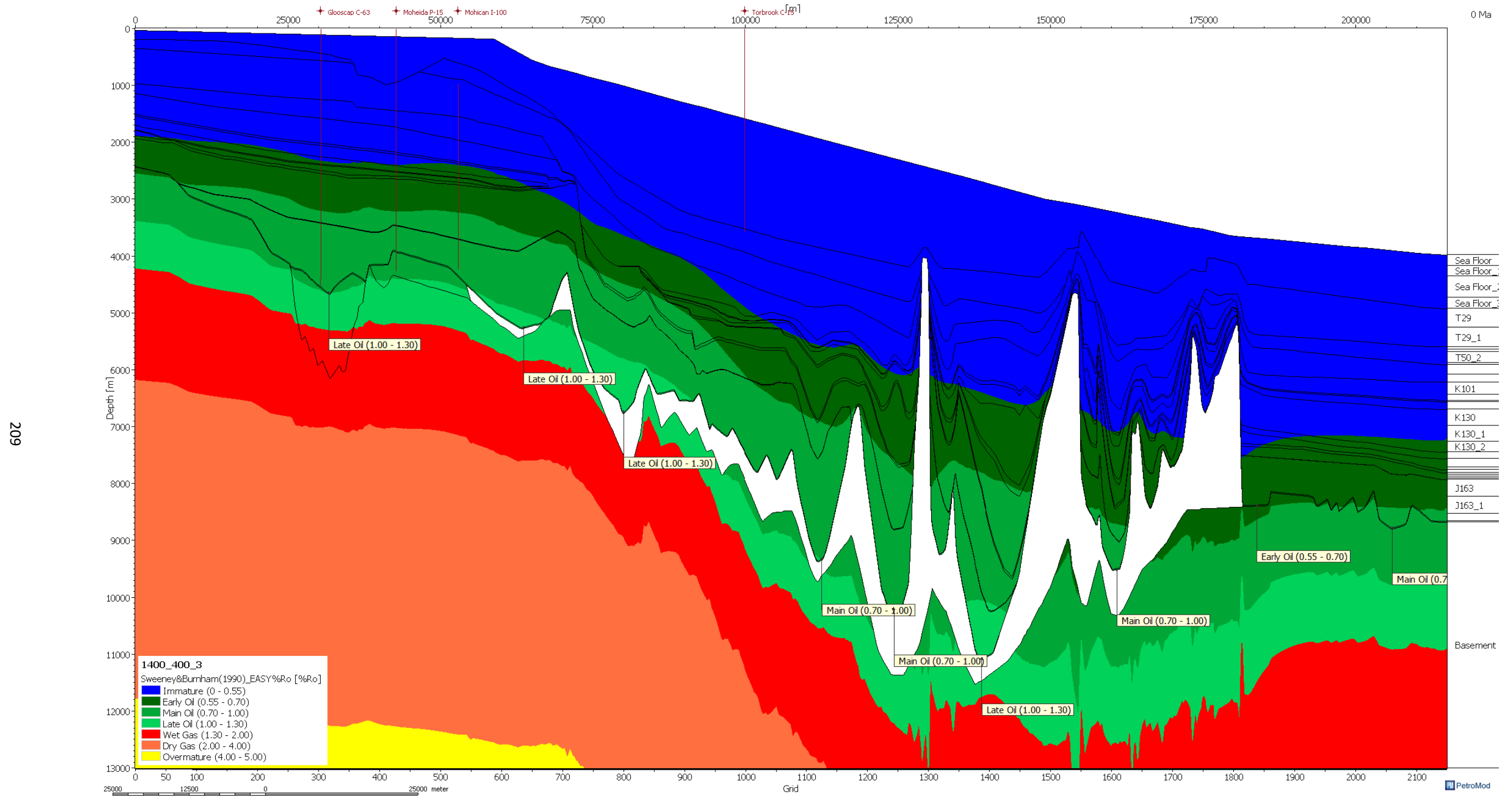


Figure E.12: Model of Vitrinite reflectance distribution for NovaSPAN 1400 line. The data points indicate the Vitrinite reflectance value based on the Sweeney and Burnham (1990) algorithm for the potential Lower Jurassic source rock layer. The white areas are the salt structures from the Argo Formation. The potential Lower Jurassic source rock is in the oil window.

Transformation Ratio – Pliensbachian Source Rock (Kerogen Type III)

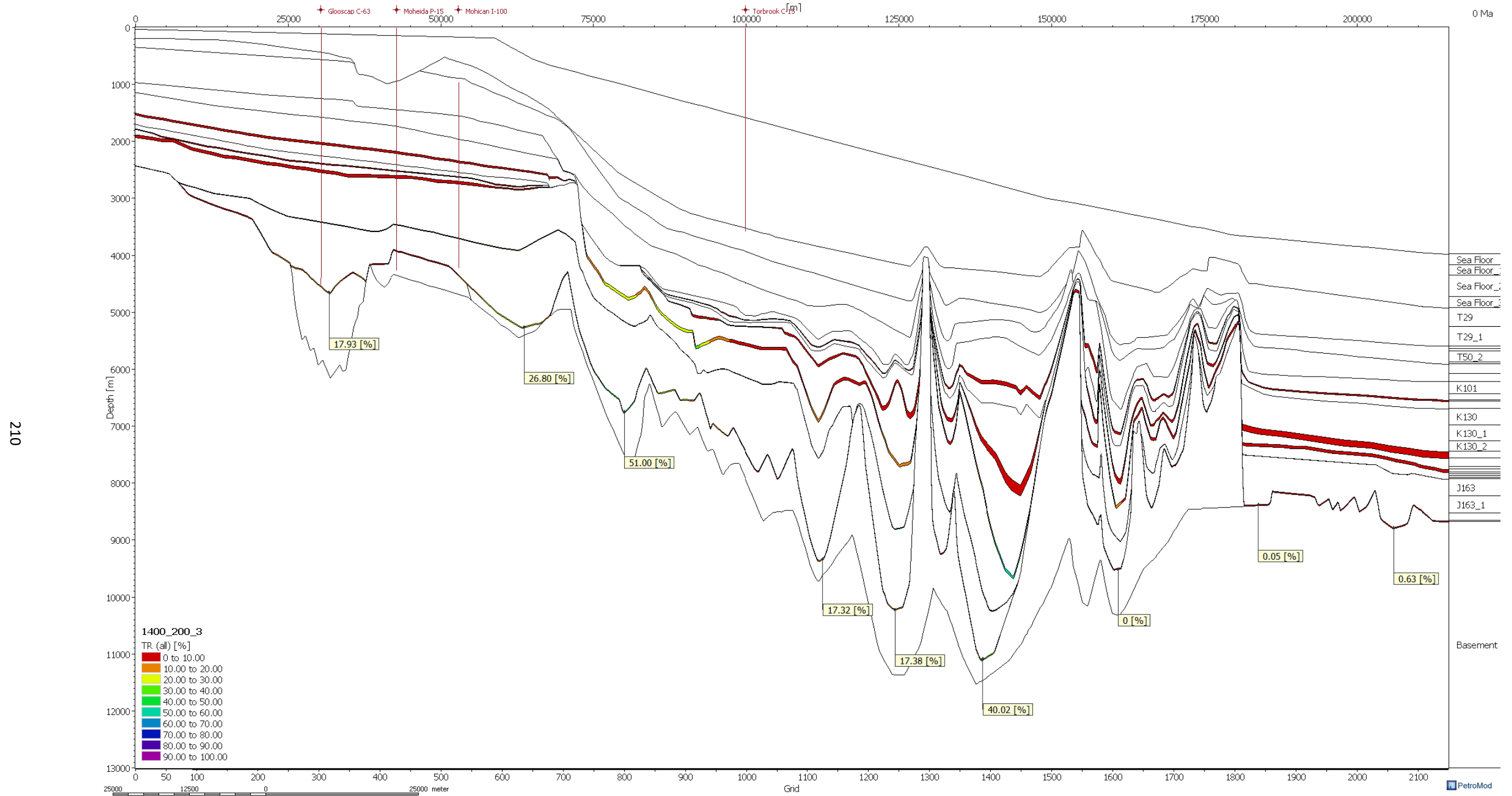


Figure E.13: Model of transformation ratio for Pliensbachian source rock (Type III) for NovaSPAN 1400 line. Here we can observe the five different source rocks in the model; the Lower Jurassic source rock is the bottommost layer. The data points indicate the percentage of the value of hydrocarbons generated from the potential Lower Jurassic source rock layer.

Transformation Ratio – Pliensbachian Source Rock (Kerogen Type II)

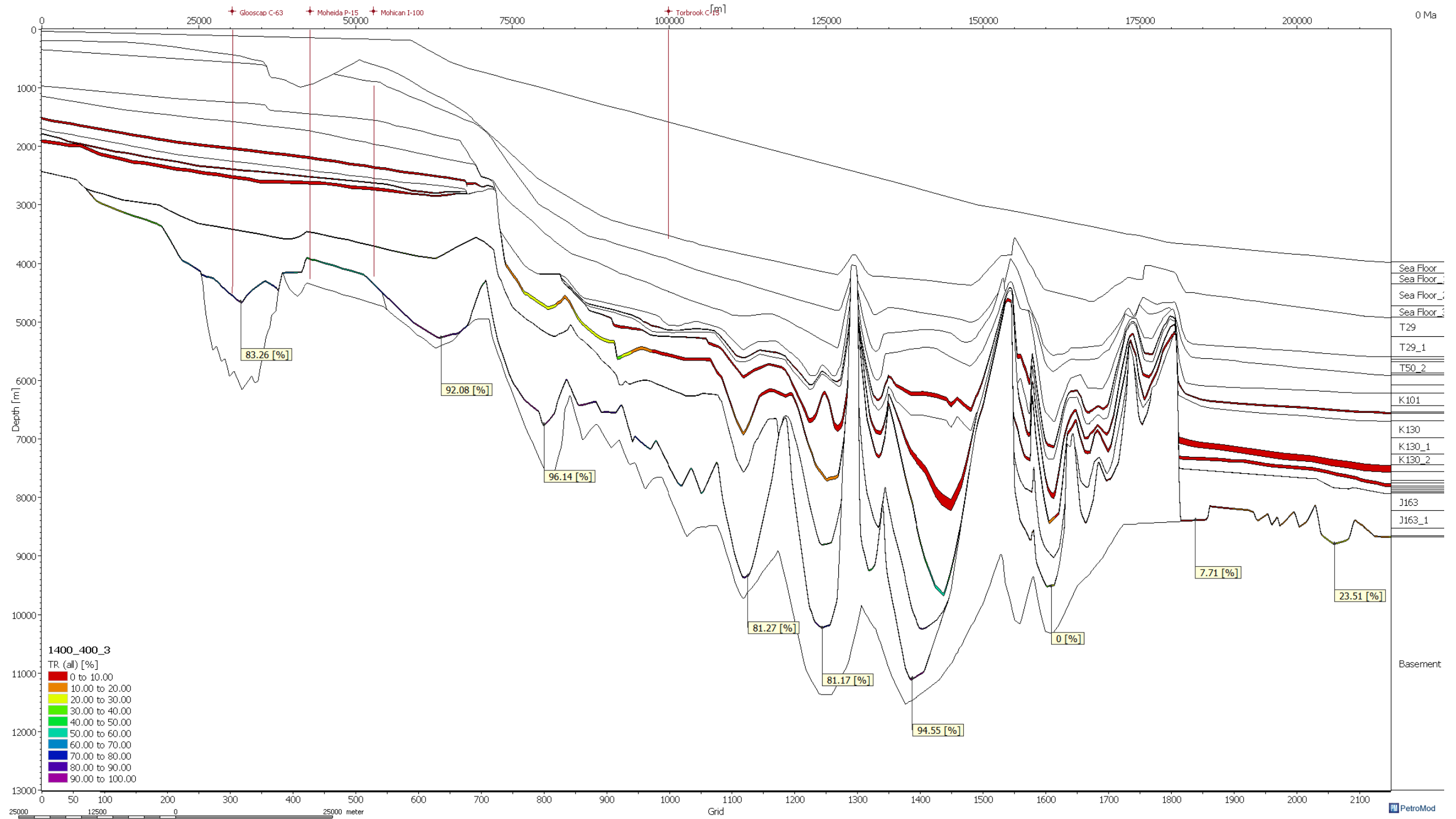
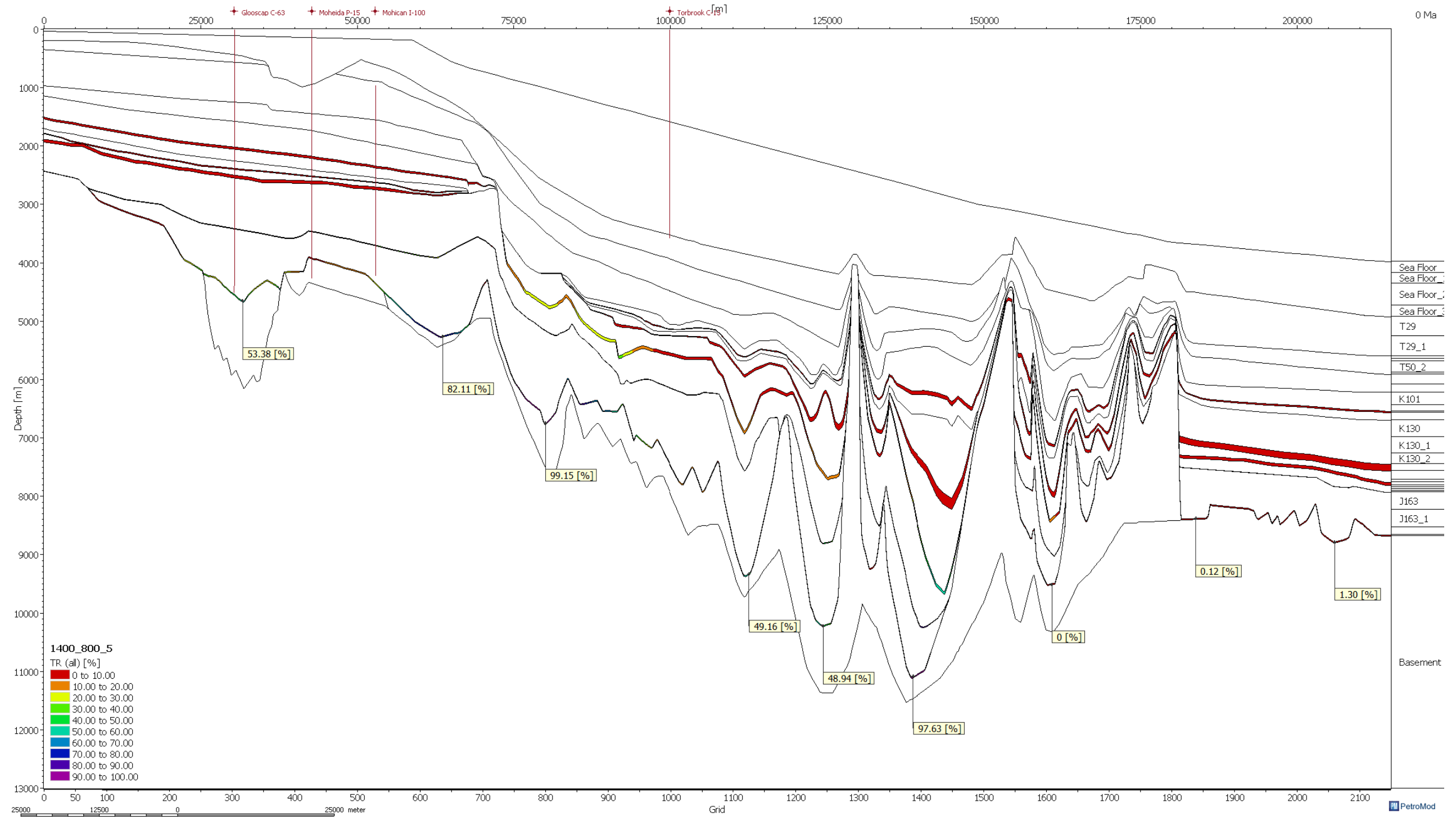


Figure E.14: Model of transformation ratio for Pliensbachian source rock (Type II) for NovaSPAN 1400 line. Here we can observe the five different source rocks in the model; the Lower Jurassic source rock is the bottommost layer. The data points indicate the percentage of the value of hydrocarbons generated from the potential Lower Jurassic source rock layer.

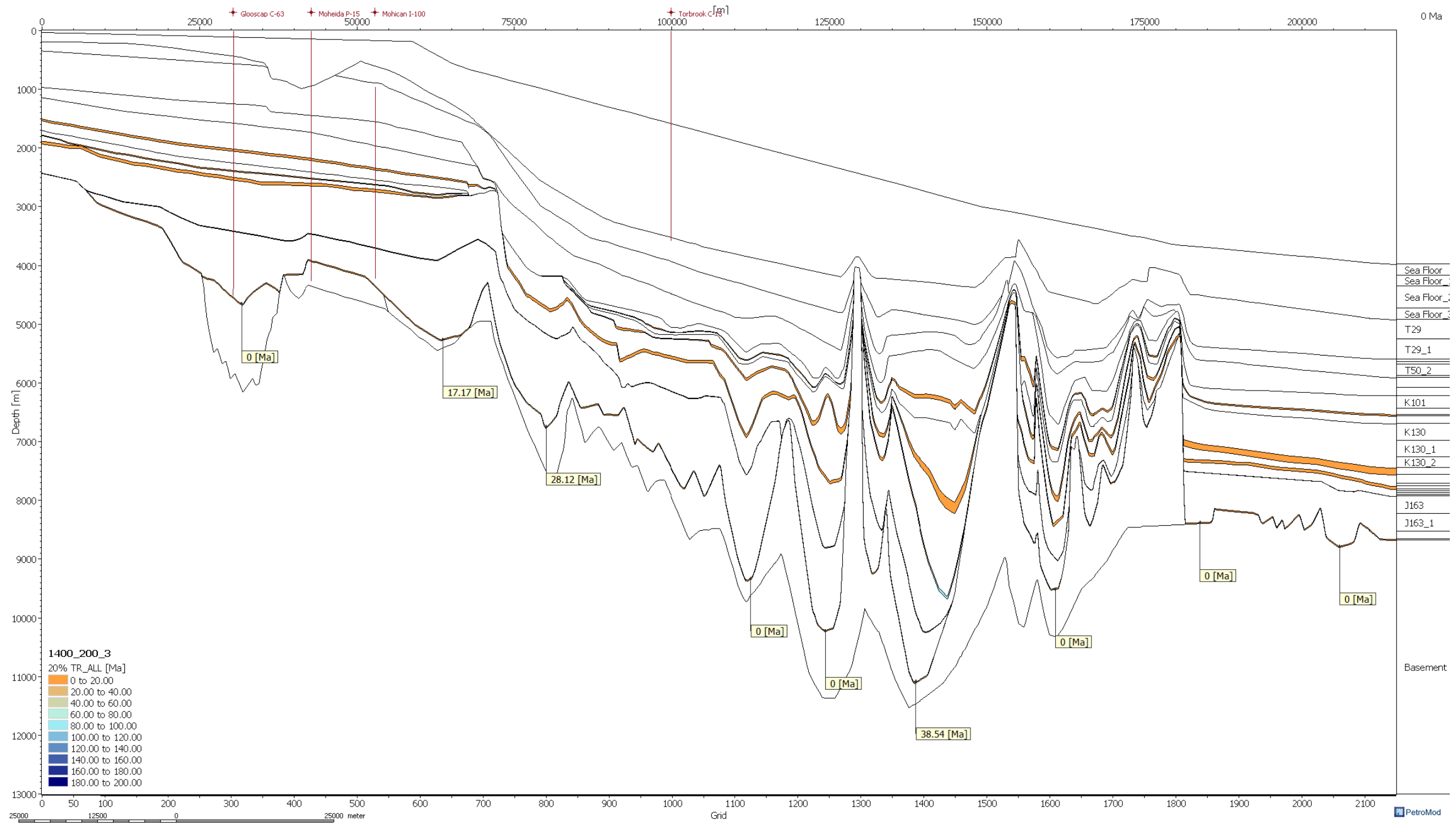
Transformation Ratio – Pliensbachian Source Rock (Kerogen Type I)



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Figure E.15: Model of transformation ratio for Pliensbachian source rock (Type I) for NovaSPAN 1400 line. Here we can observe the five different source rocks in the model; the Lower Jurassic source rock is the bottommost layer. The data points indicate the percentage of the value of hydrocarbons generated from the potential Lower Jurassic source rock layer.

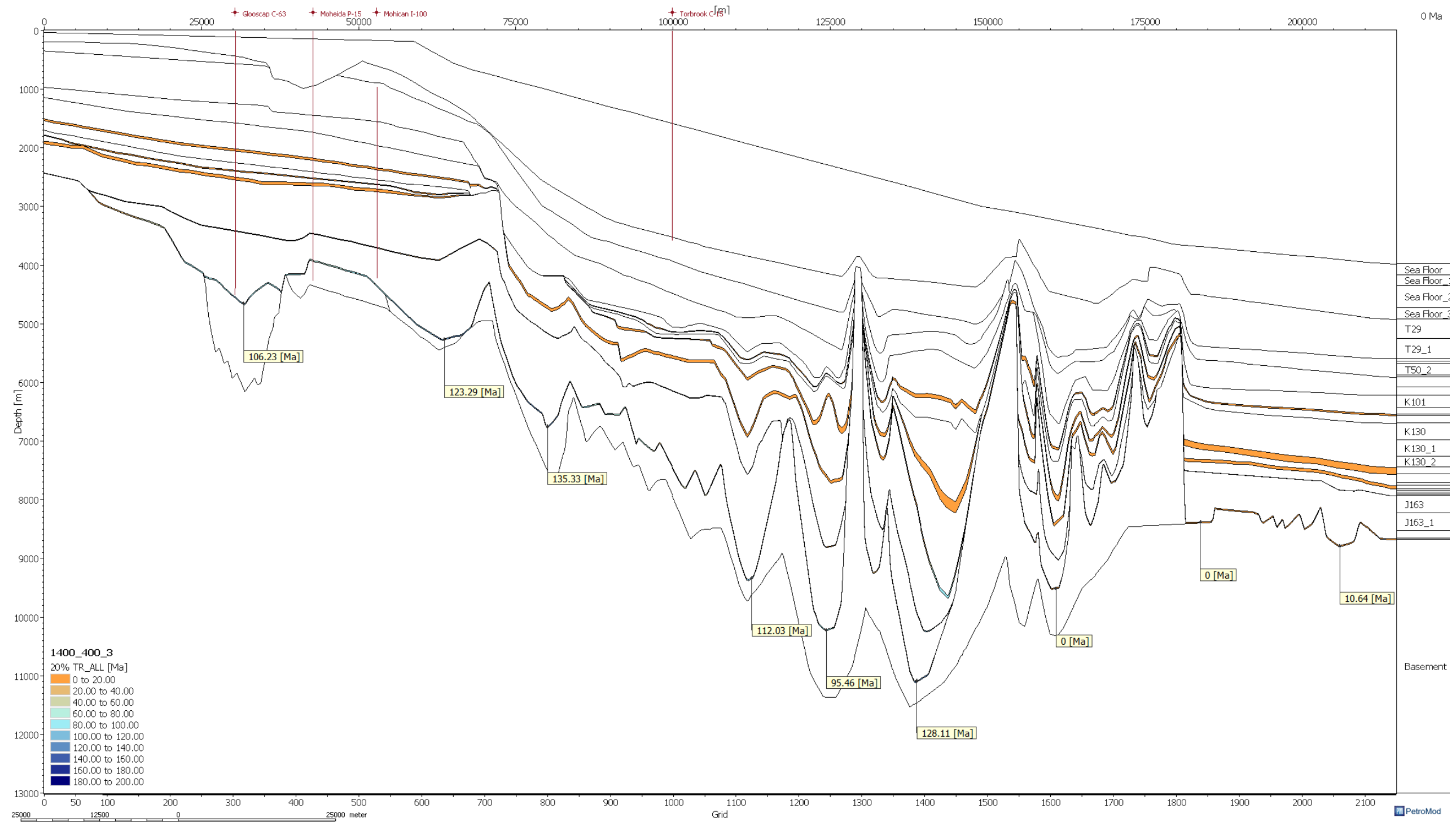
Critical Moment – Pliensbachian Source Rock (Kerogen Type III)



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Figure E.16: Model of the critical moment for the Pliensbachian source rock (Type III) for NovaSPAN 1400 line. Here we can observe the five different source rocks in the model; the Lower Jurassic source rock is the bottommost layer. The data points indicate the critical moment age that the potential Lower Jurassic had generated hydrocarbons exceeding the threshold.

Critical Moment – Pliensbachian Source Rock (Kerogen Type II)



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Figure E.17: Model of the critical moment for the Pliensbachian source rock (Type III) for NovaSPAN 1400 line. Here we can observe the five different source rocks in the model; the Lower Jurassic source rock is the bottommost layer. The data points indicate the critical moment age that the potential Lower Jurassic had generated hydrocarbons exceeding the threshold.

Critical Moment – Pliensbachian Source Rock (Kerogen Type I)

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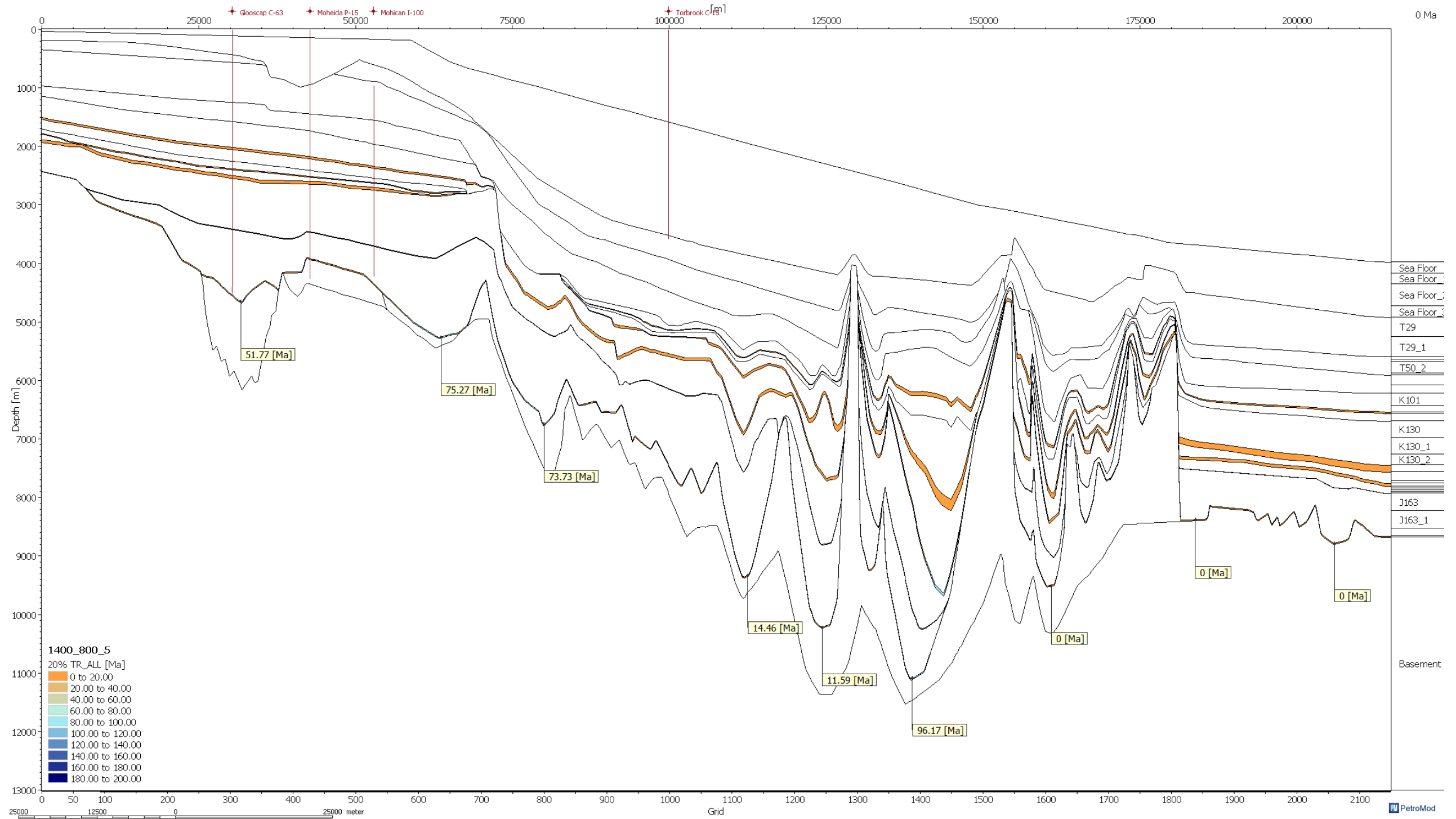


Figure E.18: Model of the critical moment for the Pliensbachian source rock (Type I) for NovaSPAN 1400 line. Here we can observe the five different source rocks in the model; the Lower Jurassic source rock is the bottommost layer. The data points indicate the critical moment age that the potential Lower Jurassic had generated hydrocarbons exceeding the threshold.

E.3 NovaSPAN 1800

Heat flow

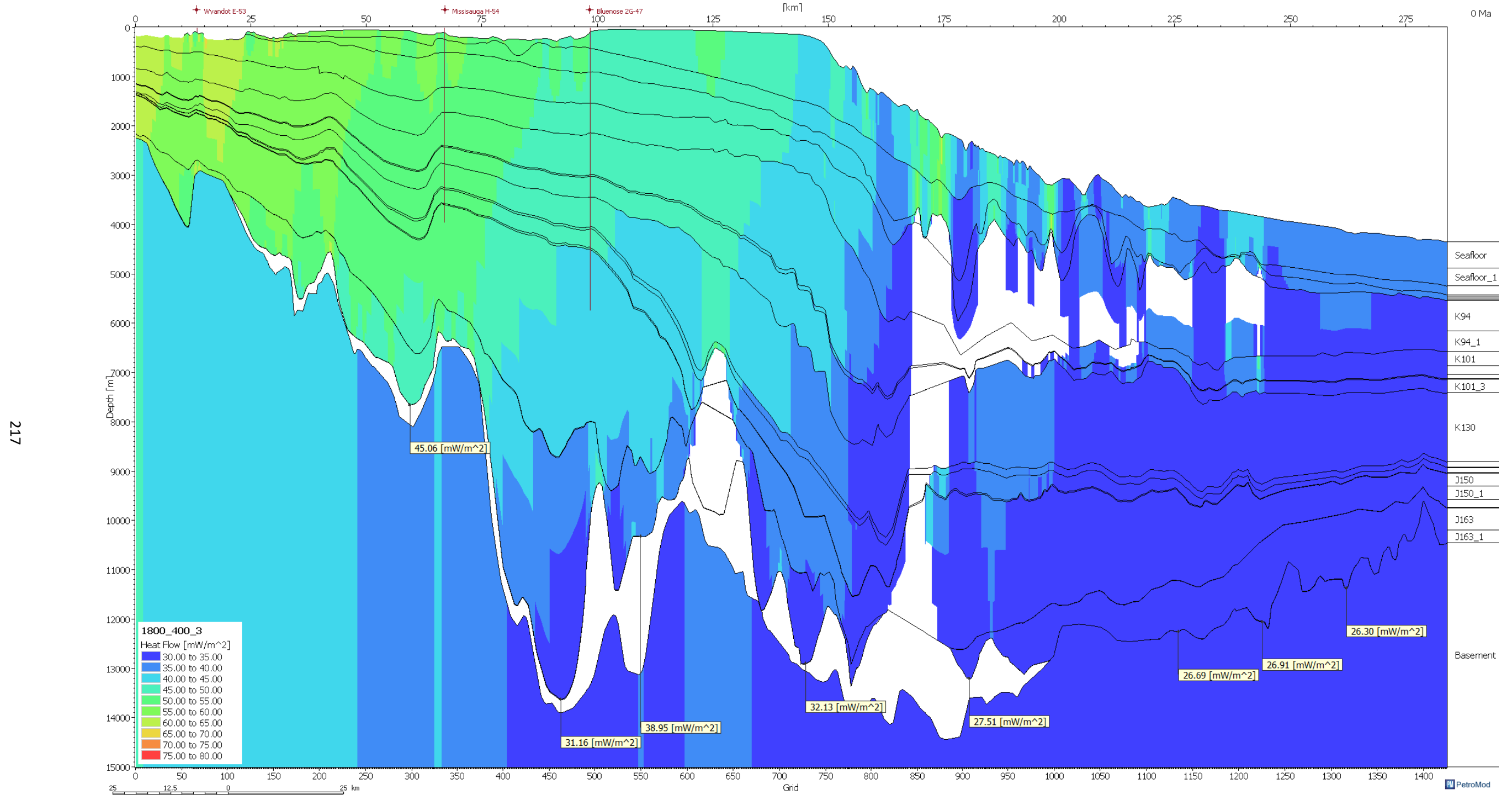
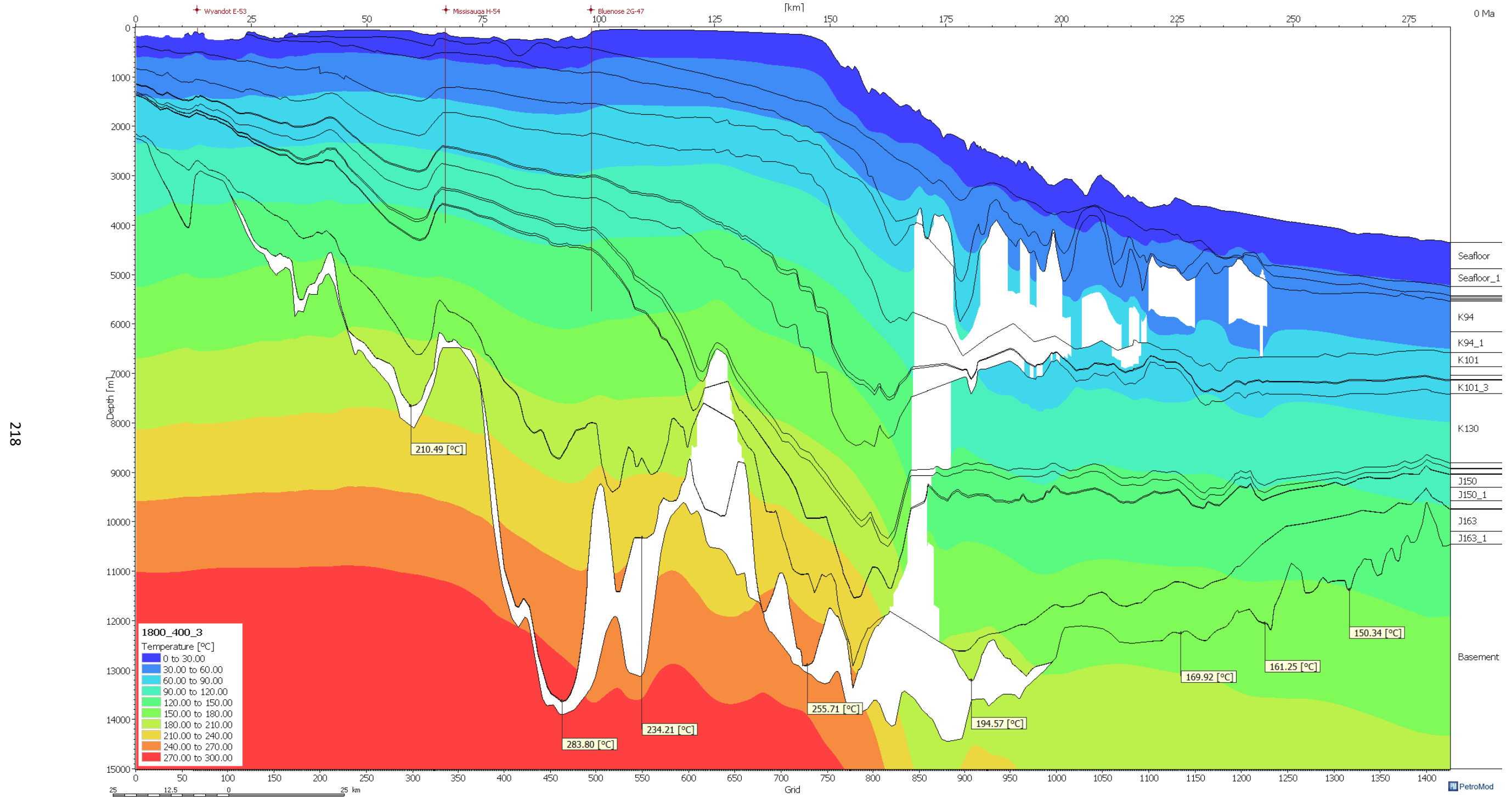


Figure E.19: Model of heat flow distribution for NovaSPAN 1800 line. The data points indicate the heat flow value of the potential Lower Jurassic source rock layer. The white areas are the salt structures from the Argo Formation.

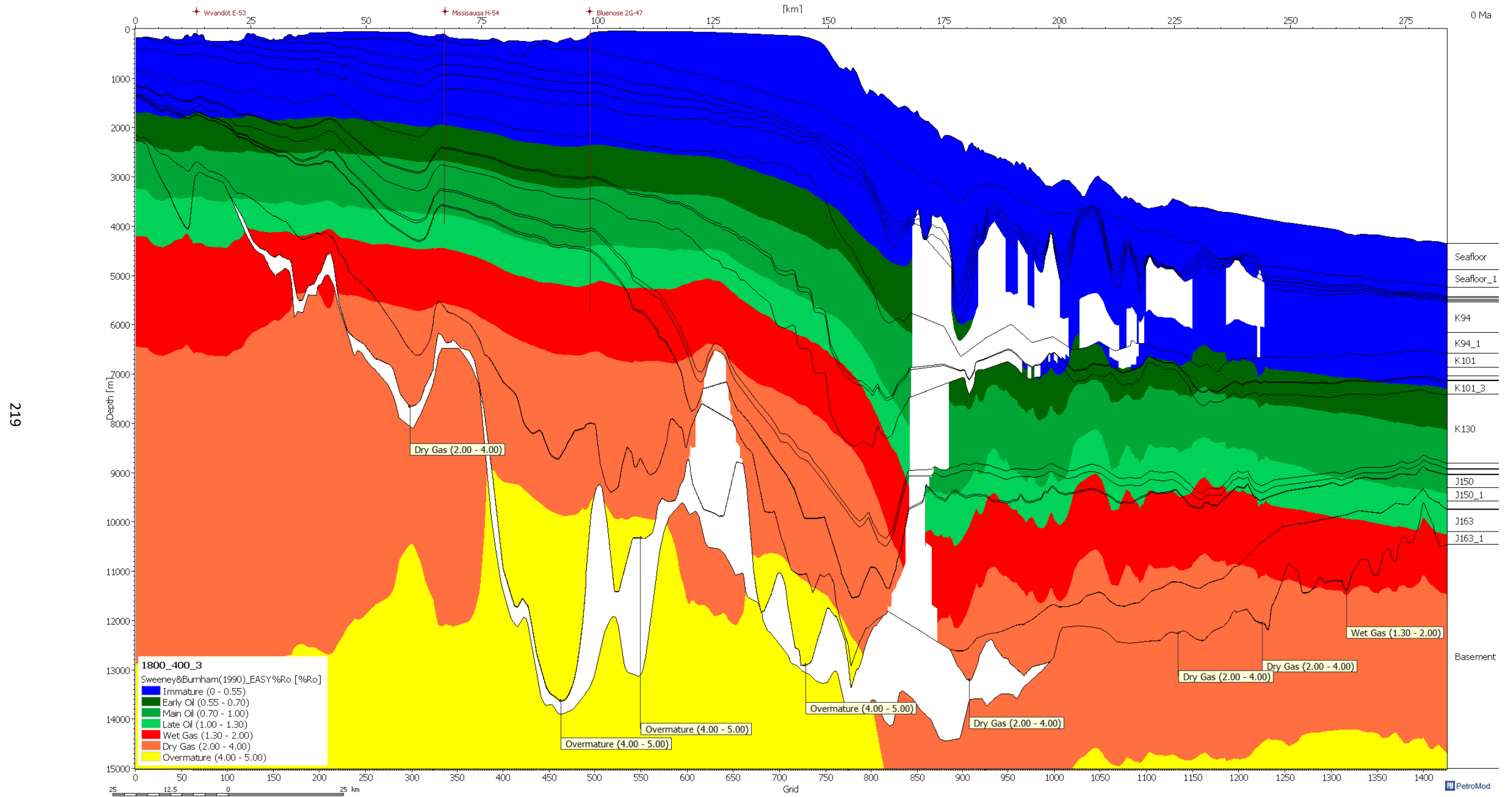
Temperature



218

Figure E.20: Model of temperature distribution for NovaSPAN 1800 line. The data points indicate the temperature value of the potential Lower Jurassic source rock layer. The white areas are the salt structures from the Argo Formation.

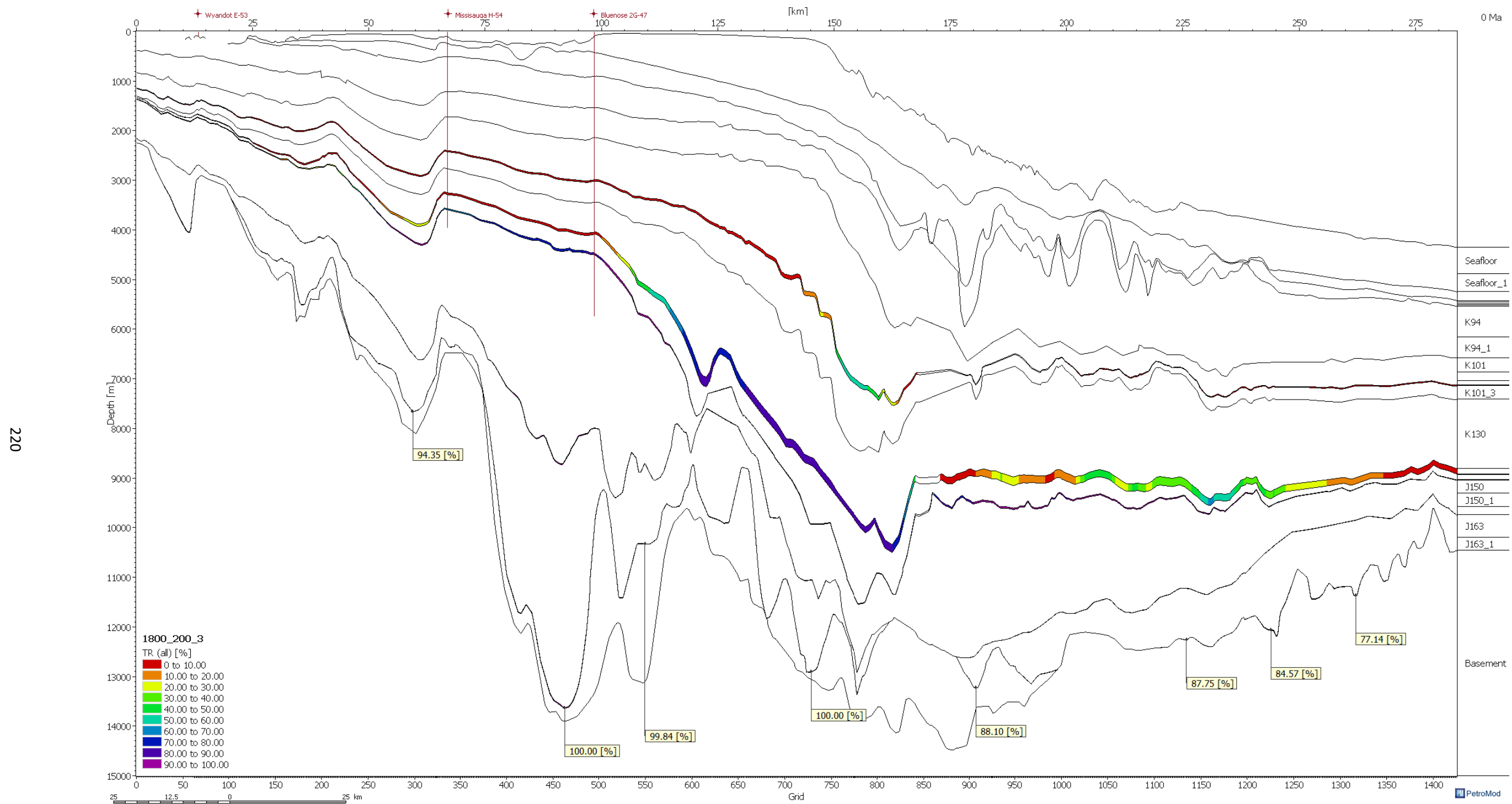
Vitrinite Reflectance



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Figure E.21: Model of Vitrinite reflectance distribution for NovaSPAN 1800 line. The data points indicate the Vitrinite reflectance value based on the Sweeney and Burnham (1990) algorithm for the potential Lower Jurassic source rock layer. The white areas are the salt structures from the Argo Formation. The potential Lower Jurassic source rock is in the oil.

Transformation Ratio – Pliensbachian Source Rock (Kerogen Type III)



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Figure E.22: Model of transformation ratio for Pliensbachian source rock (Type III) for NovaSPAN 1800 line. Here we can observe the five different source rocks in the model; the Lower Jurassic source rock is the bottommost layer. The data points indicate the percentage of the value of hydrocarbons generated from the potential Lower Jurassic source rock layer.

Transformation Ratio – Pliensbachian Source Rock (Kerogen Type II)

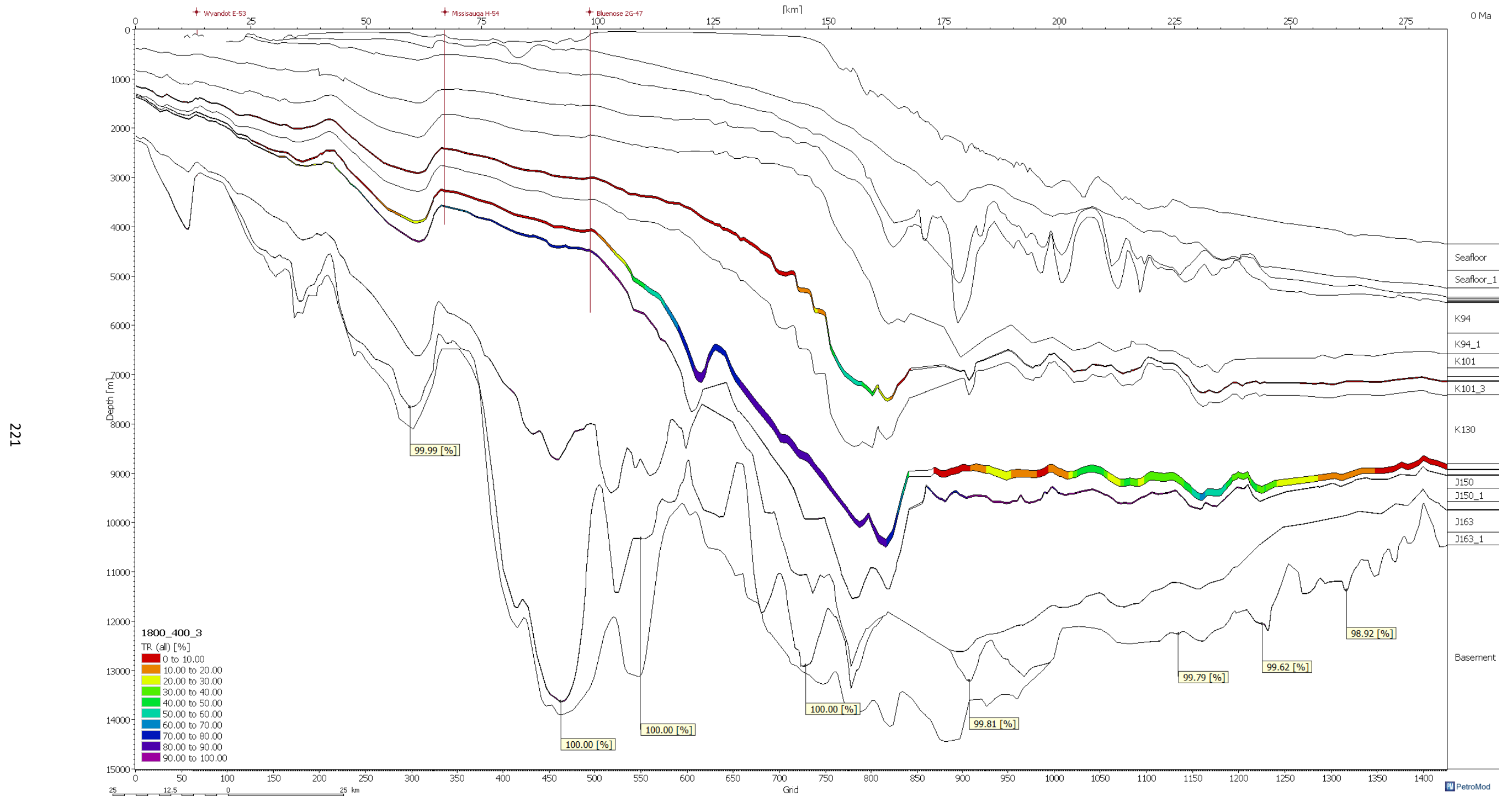


Figure E.23: Model of transformation ratio for Pliensbachian source rock (Type II) for NovaSPAN 1800 line. Here we can observe the five different source rocks in the model; the Lower Jurassic source rock is the bottommost layer. The data points indicate the percentage of the value of hydrocarbons generated from the potential Lower Jurassic source rock layer.

Transformation Ratio – Pliensbachian Source Rock (Kerogen Type I)

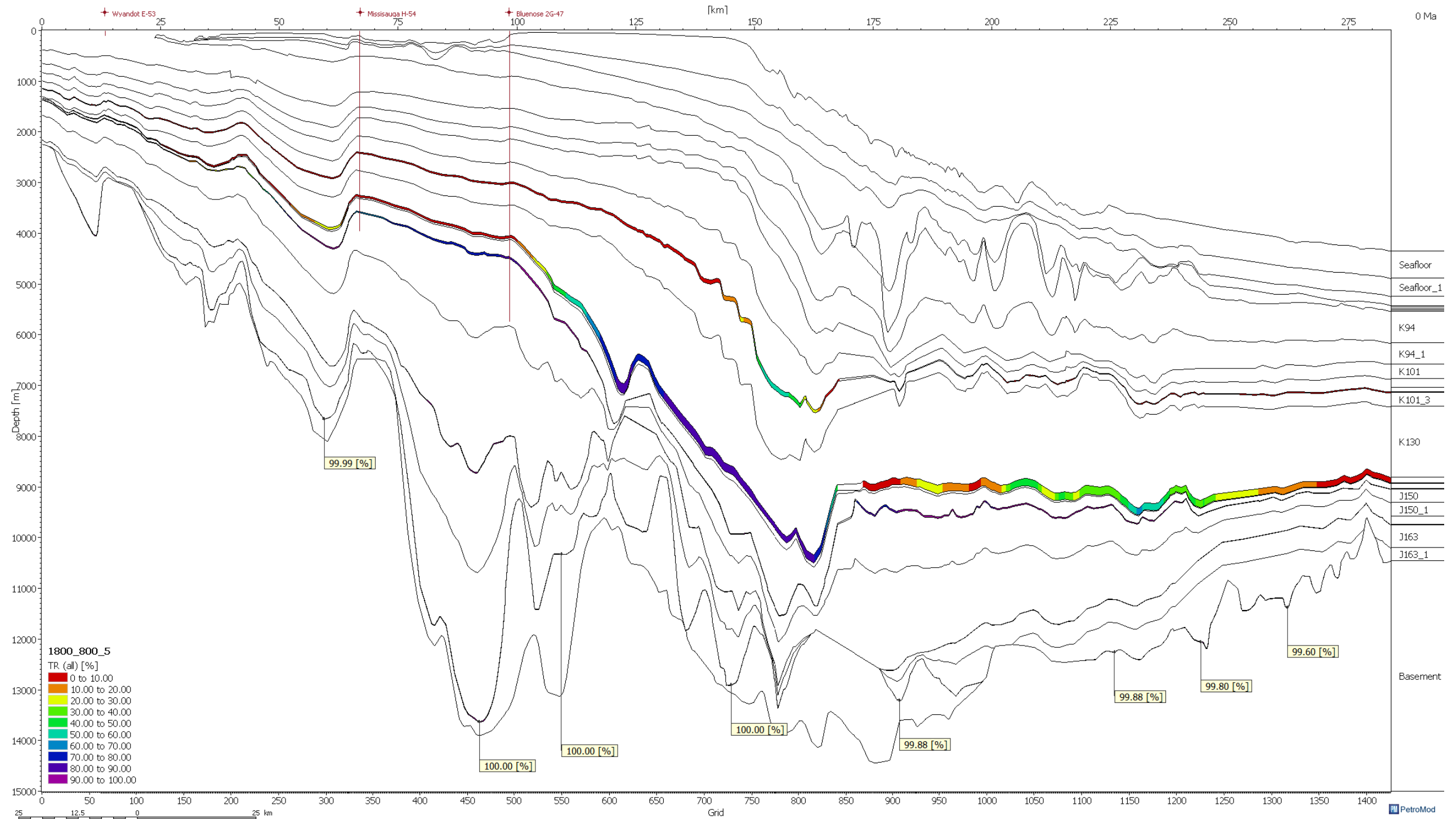


Figure E.24: Model of transformation ratio for Pliensbachian source rock (Type I) for NovaSPAN 1800 line. Here we can observe the five different source rocks in the model; the Lower Jurassic source rock is the bottommost layer. The data points indicate the percentage of the value of hydrocarbons generated from the potential Lower Jurassic source rock layer.

Critical Moment – Pliensbachian Source Rock (Kerogen Type III)

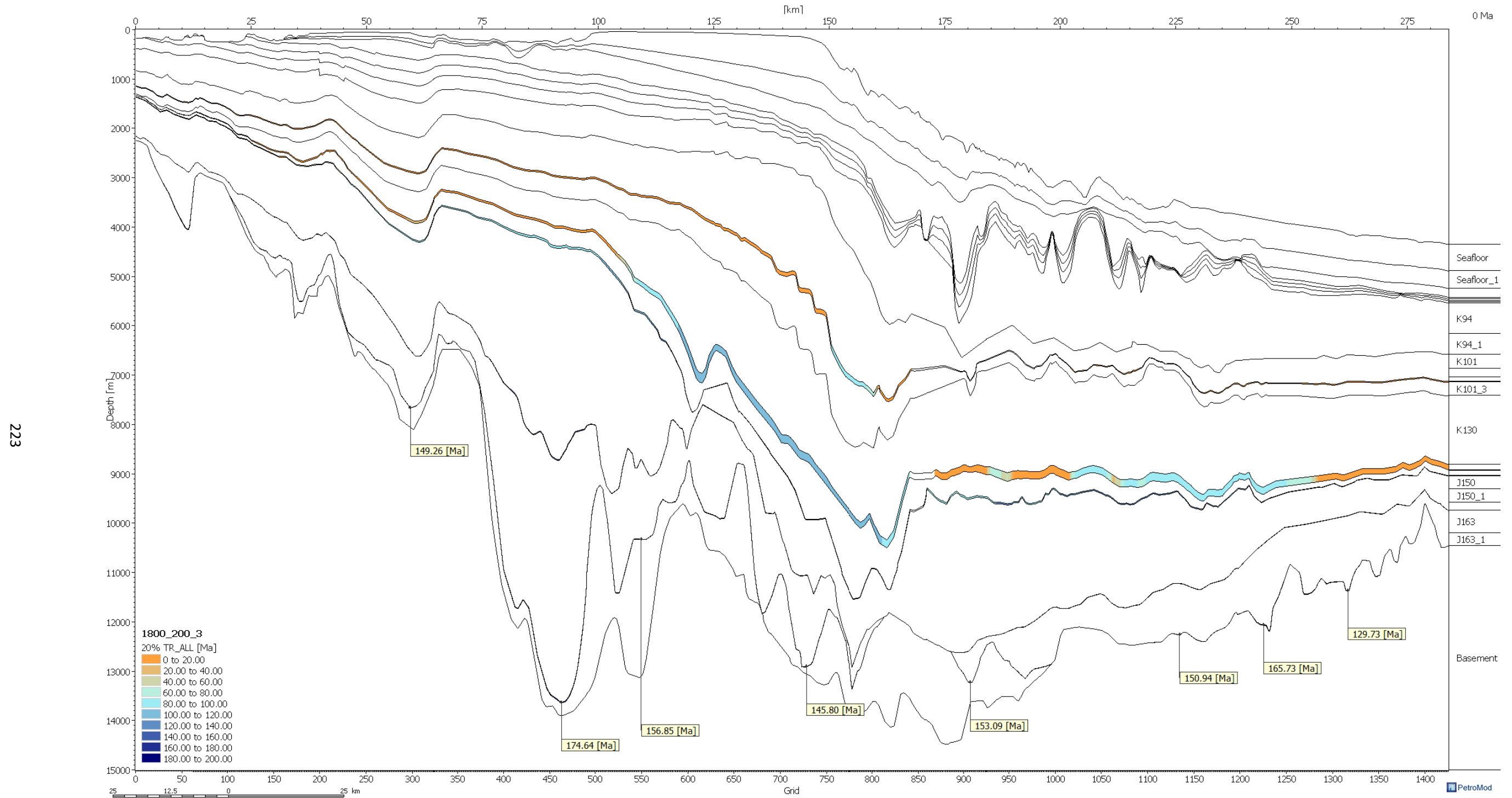


Figure E.25: Model of the critical moment for the Pliensbachian source rock (Type III) for NovaSPAN 1800 line. Here we can observe the five different source rocks in the model; the Lower Jurassic source rock is the bottommost layer. The data points indicate the critical moment age that the potential Lower Jurassic had generated hydrocarbons exceeding the threshold.

Critical Moment – Pliensbachian Source Rock (Kerogen Type II)

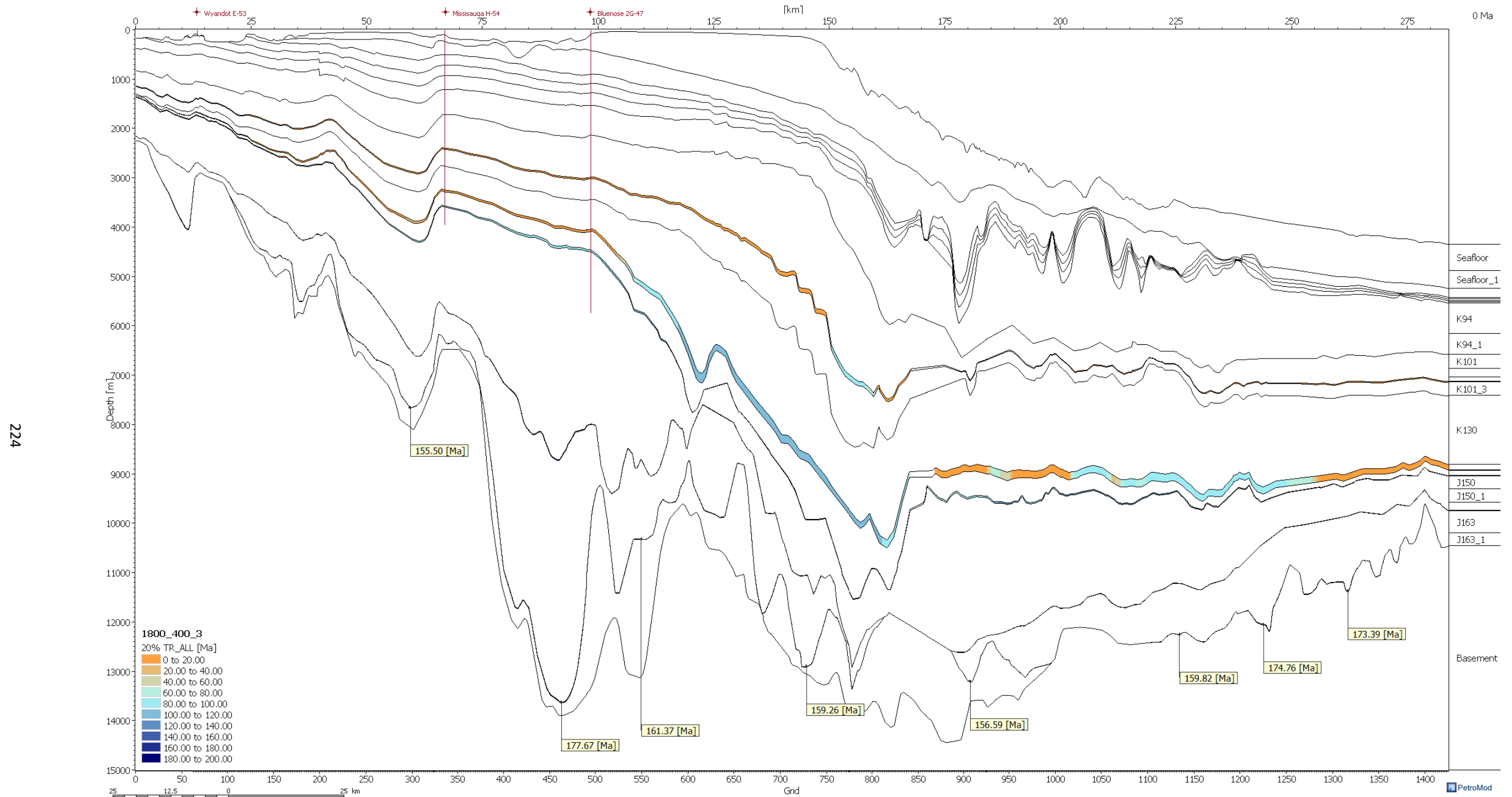


Figure E.26: Model of the critical moment for the Pliensbachian source rock (Type II) for NovaSPAN 1800 line. Here we can observe the five different source rocks in the model; the Lower Jurassic source rock is the bottommost layer. The data points indicate the critical moment age that the potential Lower Jurassic had generated hydrocarbons exceeding the threshold.

Critical Moment – Pliensbachian Source Rock (Kerogen Type I)

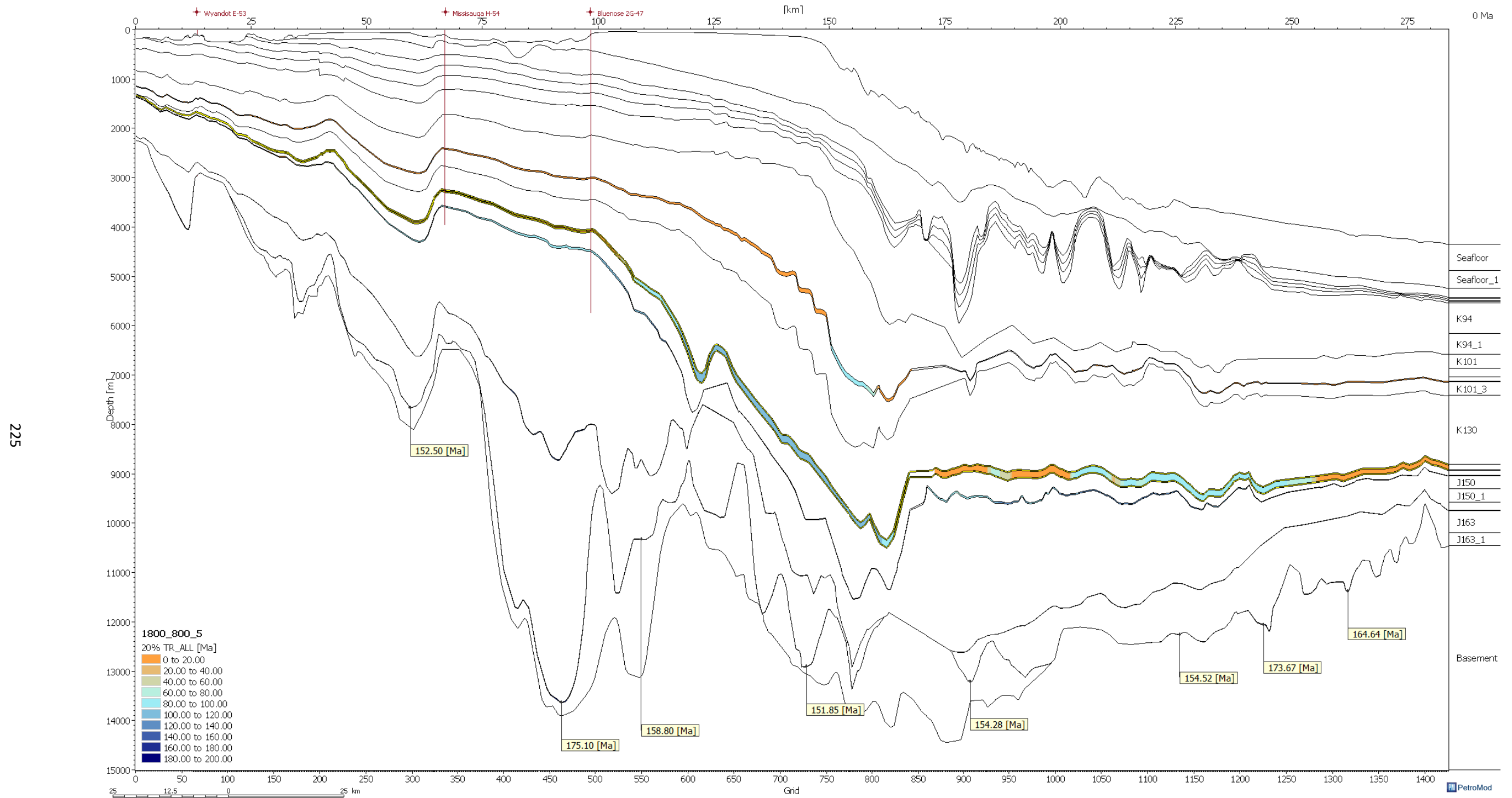


Figure E.27: Model of the critical moment for the Pliensbachian source rock (Type I) for NovaSPAN 1800 line. Here we can observe the five different source rocks in the model; the Lower Jurassic source rock is the bottommost layer. The data points indicate the critical moment age that the potential Lower Jurassic had generated hydrocarbons exceeding the threshold.

E.4 NovaSPAN 2000

Heat flow

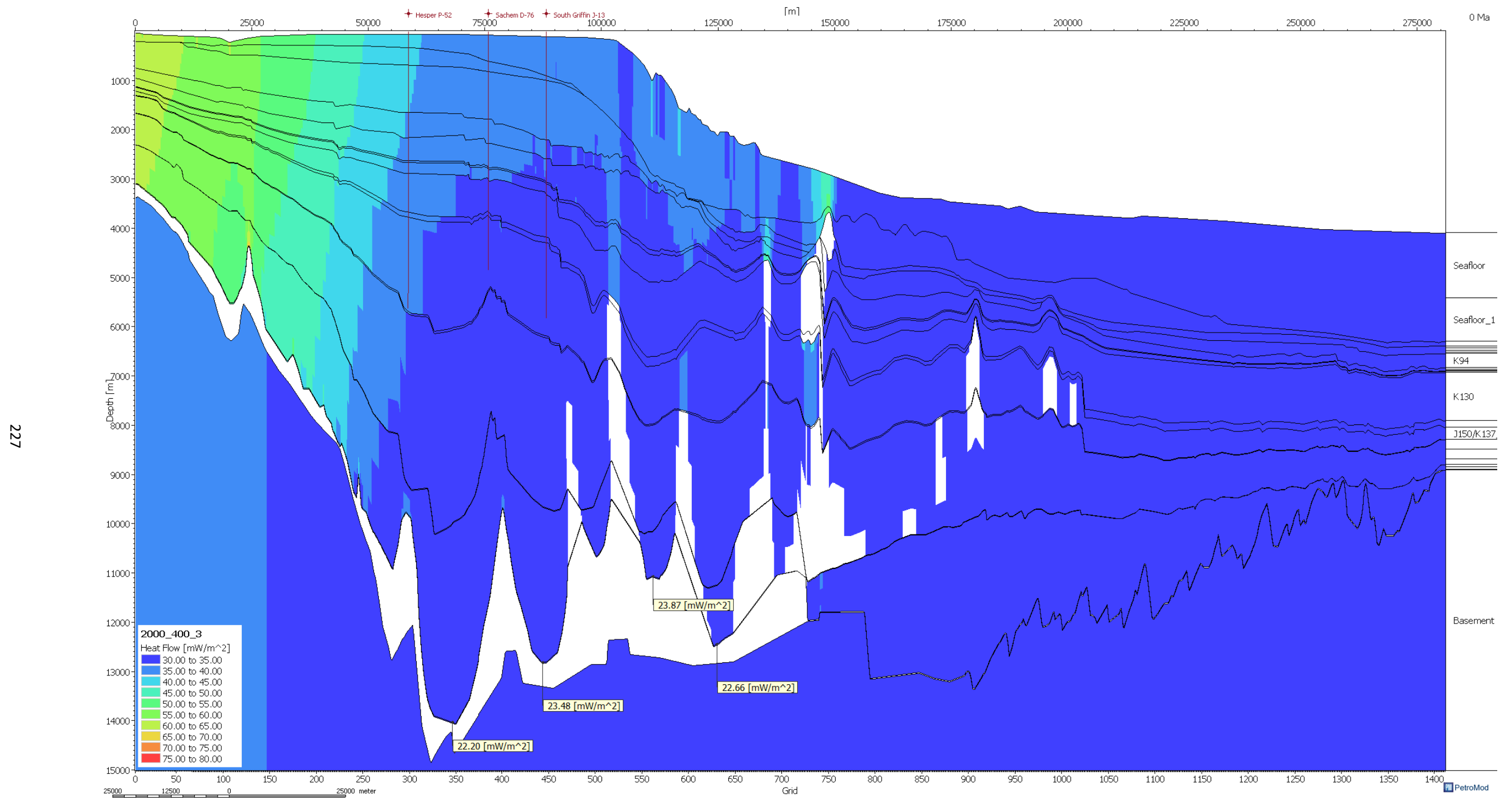


Figure E.28: Model of temperature distribution for NovaSPAN 2000 line. The data points indicate the temperature value of the potential Lower Jurassic source rock layer. The white areas are the salt structures from the Argo Formation.

Temperature

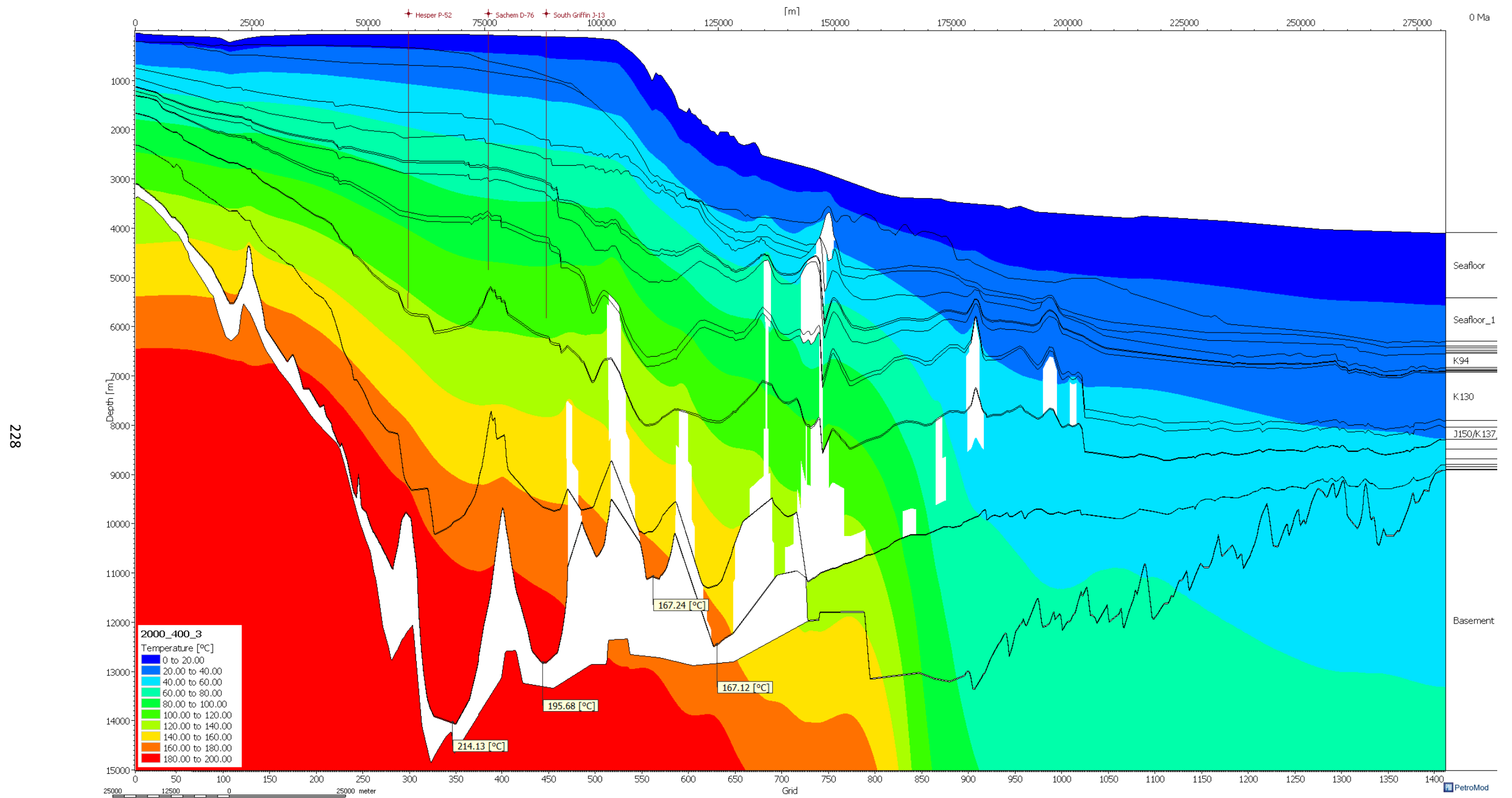


Figure E.29: Model of temperature distribution for NovaSPAN 2000 line. The data points indicate the temperature value of the potential Lower Jurassic source rock layer. The white areas are the salt structures from the Argo Formation.

Vitrinite Reflectance

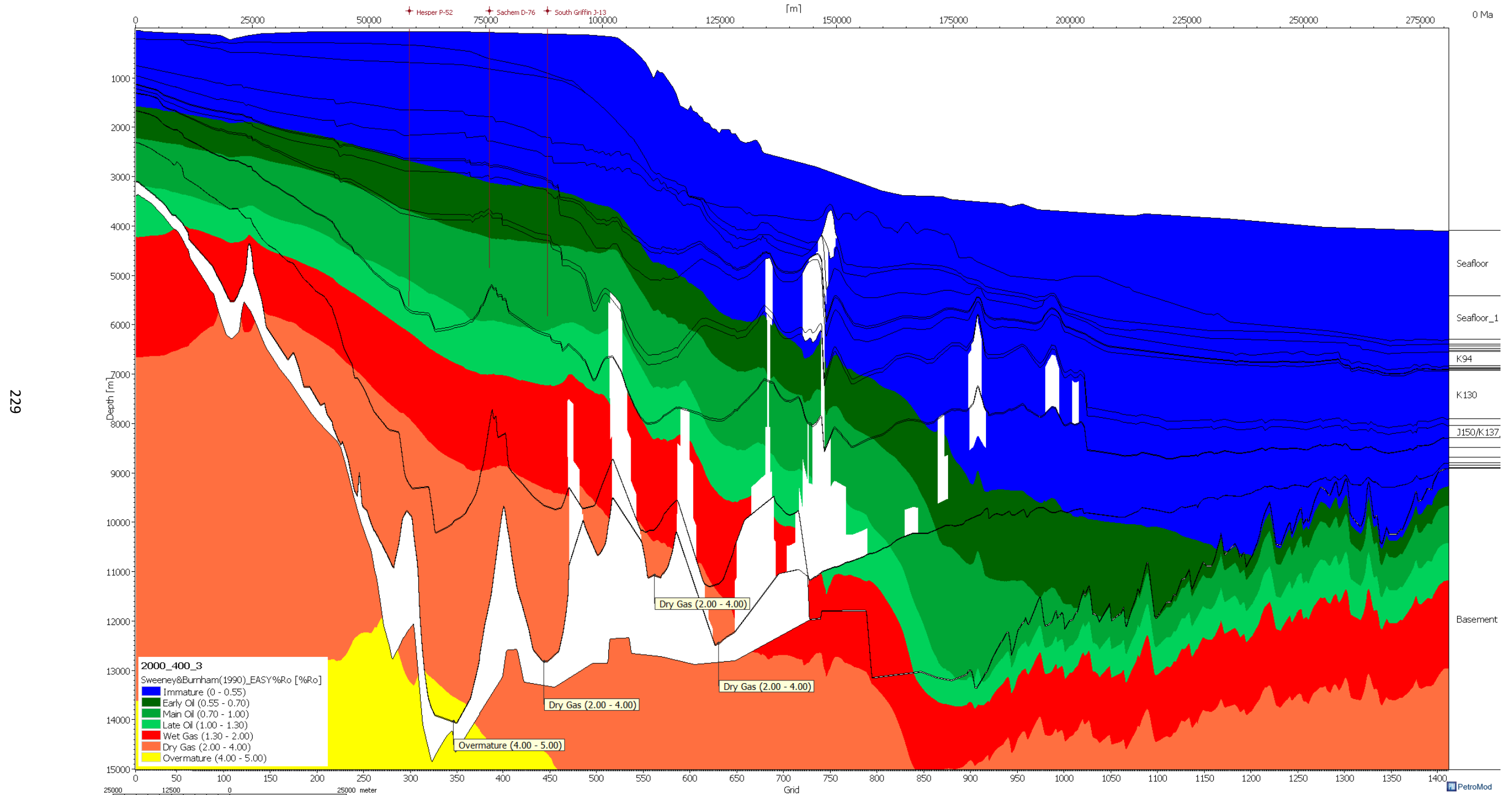


Figure E.30: Model of Vitrinite reflectance distribution for NovaSPAN 2000 line. The data points indicate the Vitrinite reflectance value based on the Sweeney and Burnham (1990) algorithm for the potential Lower Jurassic source rock layer. The white areas are the salt structures from the Argo Formation. The potential Lower Jurassic source rock is in the oil window.

Transformation Ratio – Pliensbachian Source Rock (Kerogen Type III)

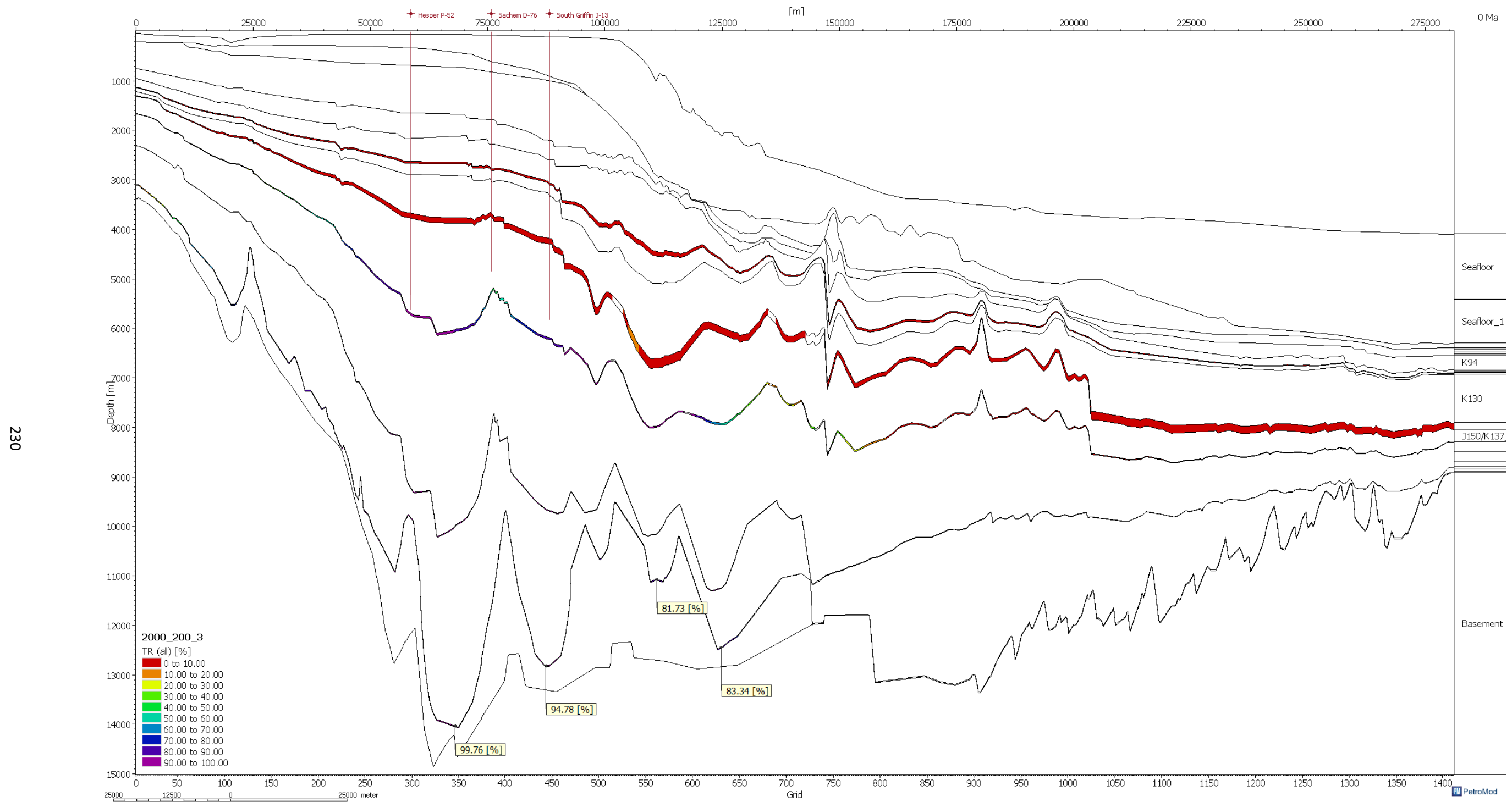


Figure E.31: Model of transformation ratio for Pliensbachian source rock (Type III) for NovaSPAN 2000 line. Here we can observe the five different source rocks in the model; the Lower Jurassic source rock is the bottommost layer. The data points indicate the percentage of the value of hydrocarbons generated from the potential Lower Jurassic source rock layer.

Transformation Ratio – Pliensbachian Source Rock (Kerogen Type II)

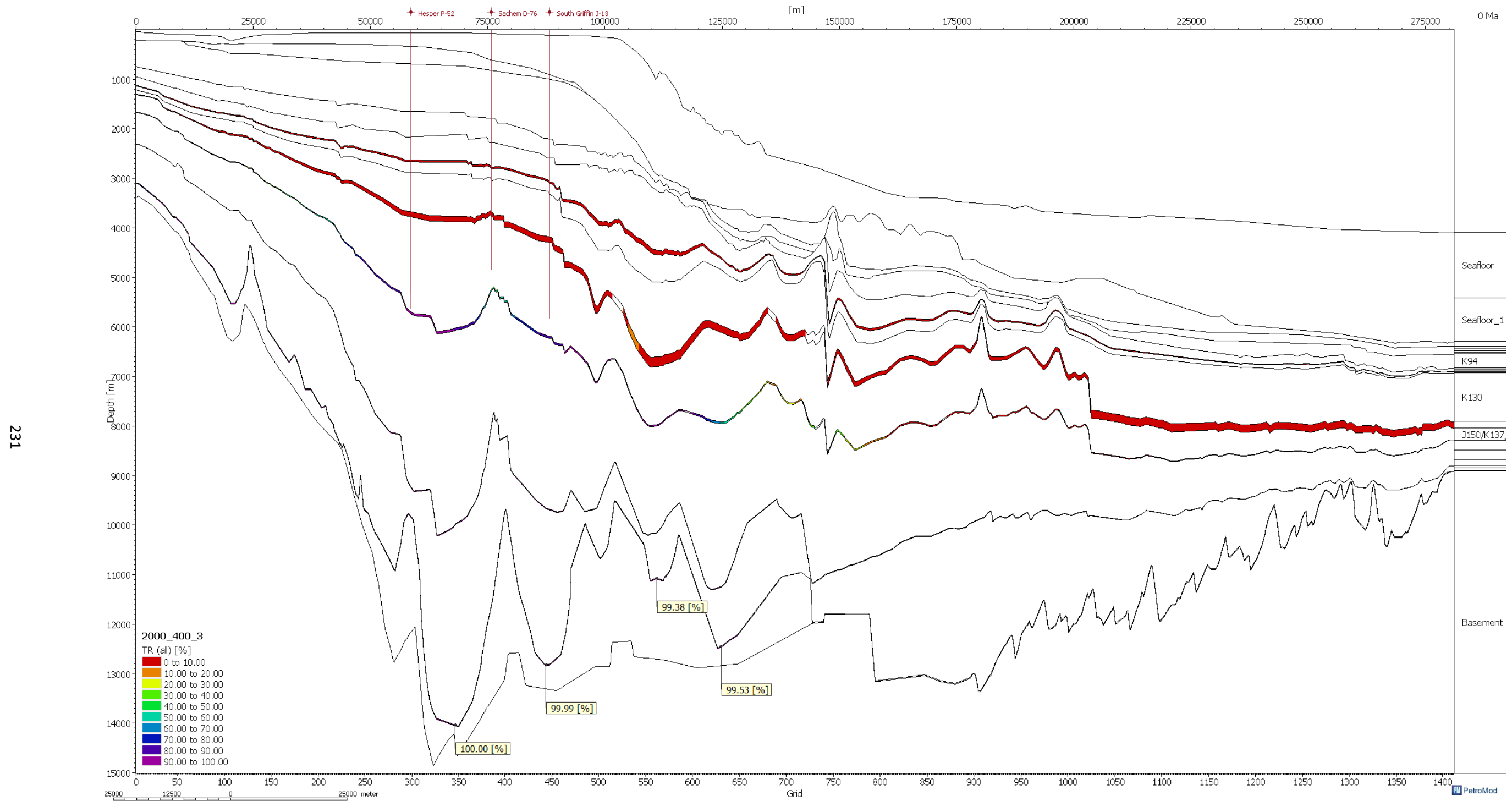
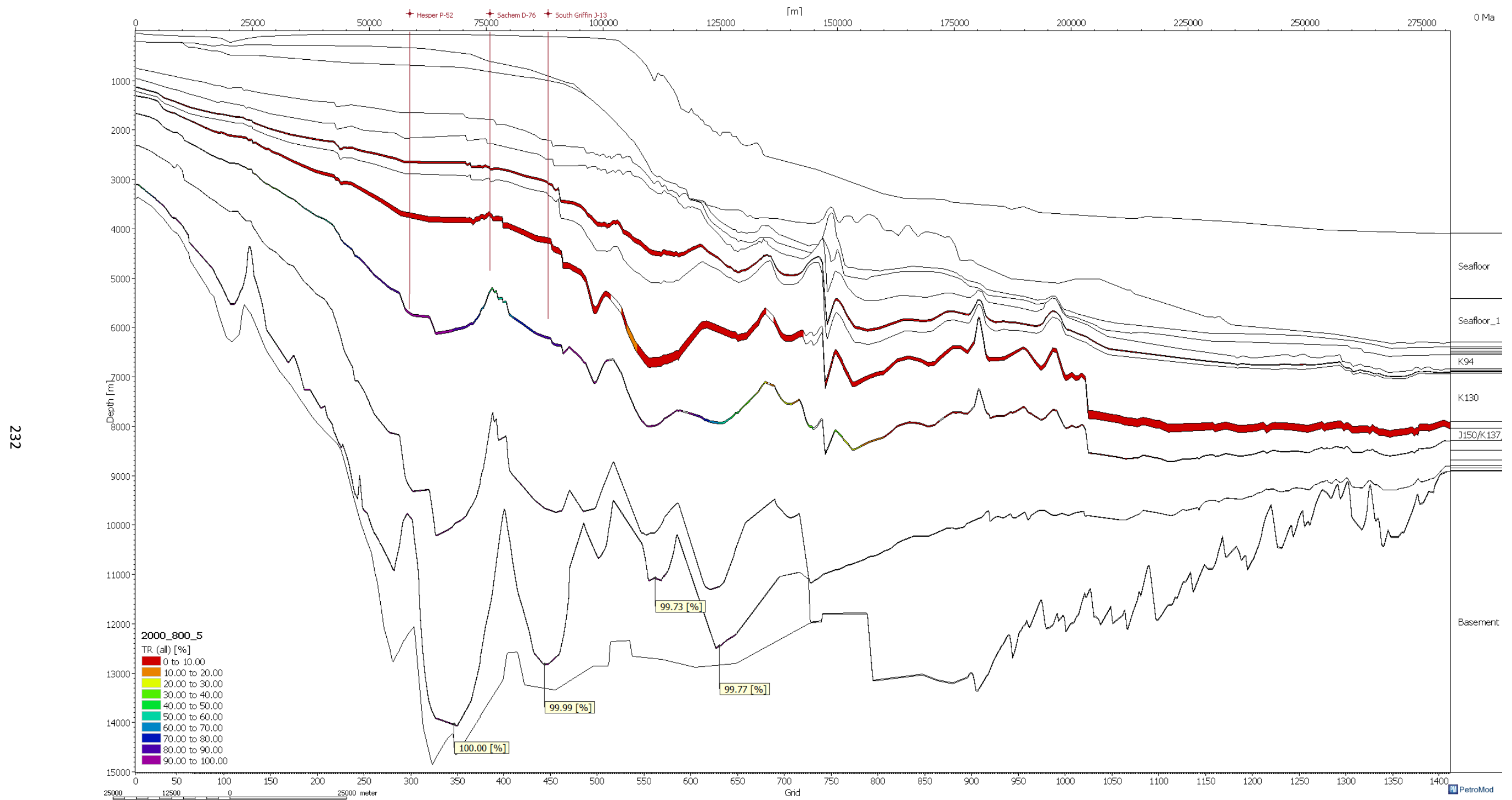


Figure E.32: Model of transformation ratio for Pliensbachian source rock (Type II) for NovaSPAN 2000 line. Here we can observe the five different source rocks in the model; the Lower Jurassic source rock is the bottommost layer. The data points indicate the percentage of the value of hydrocarbons generated from the potential Lower Jurassic source rock layer.

Transformation Ratio – Pliensbachian Source Rock (Kerogen Type I)



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Figure E.33: Model of transformation ratio for Pliensbachian source rock (Type I) for NovaSPAN 2000 line. Here we can observe the five different source rocks in the model; the Lower Jurassic source rock is the bottommost layer. The data points indicate the percentage of the value of hydrocarbons generated from the potential Lower Jurassic source rock layer.

Critical Moment – Pliensbachian Source Rock (Kerogen Type III)

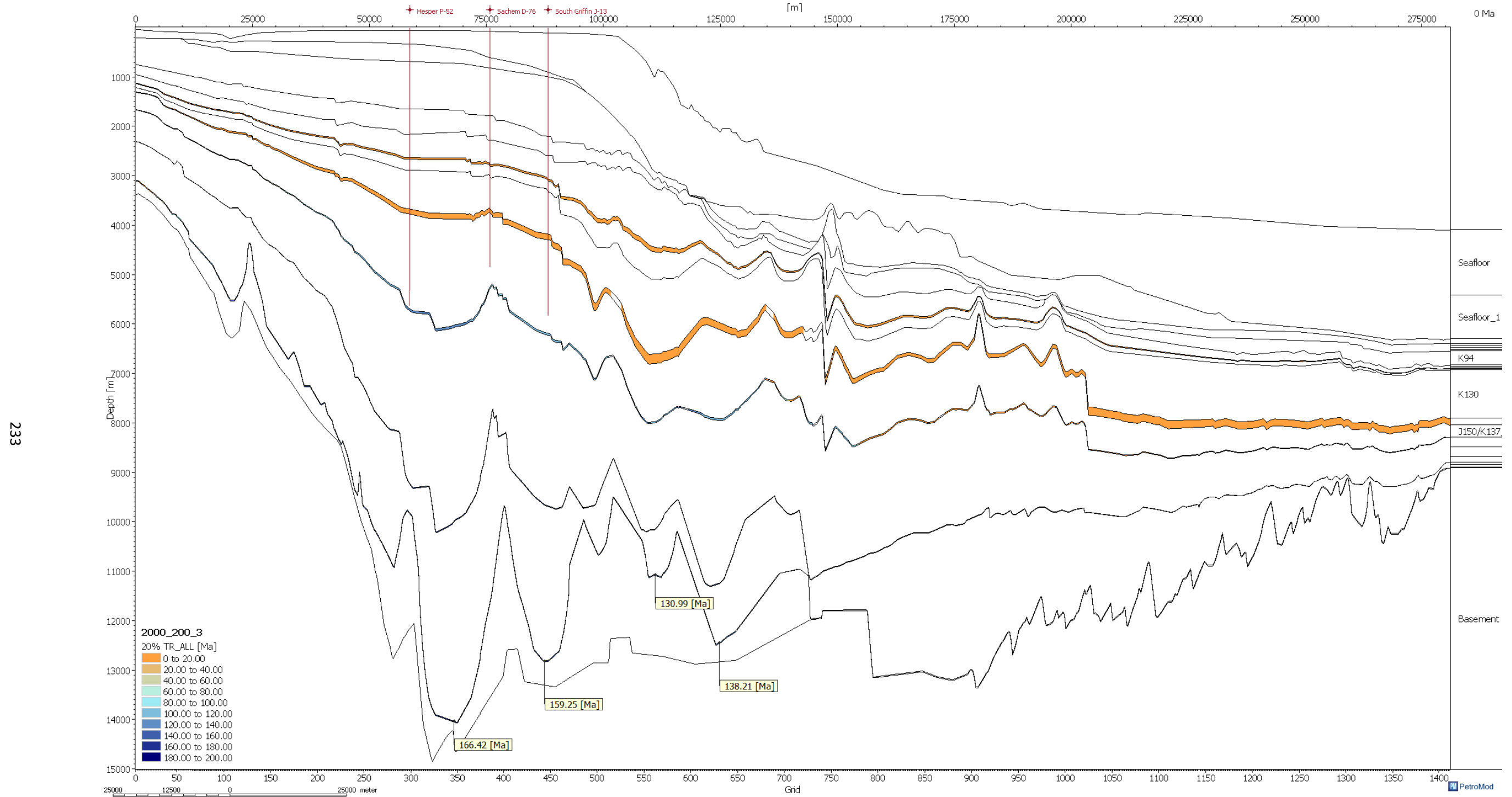


Figure E.34: Model of the critical moment for the Pliensbachian source rock (Type III) for NovaSPAN 2000 line. Here we can observe the five different source rocks in the model; the Lower Jurassic source rock is the bottommost layer. The data points indicate the critical moment age that the potential Lower Jurassic had generated hydrocarbons exceeding the threshold.

Critical Moment – Pliensbachian Source Rock (Kerogen Type II)

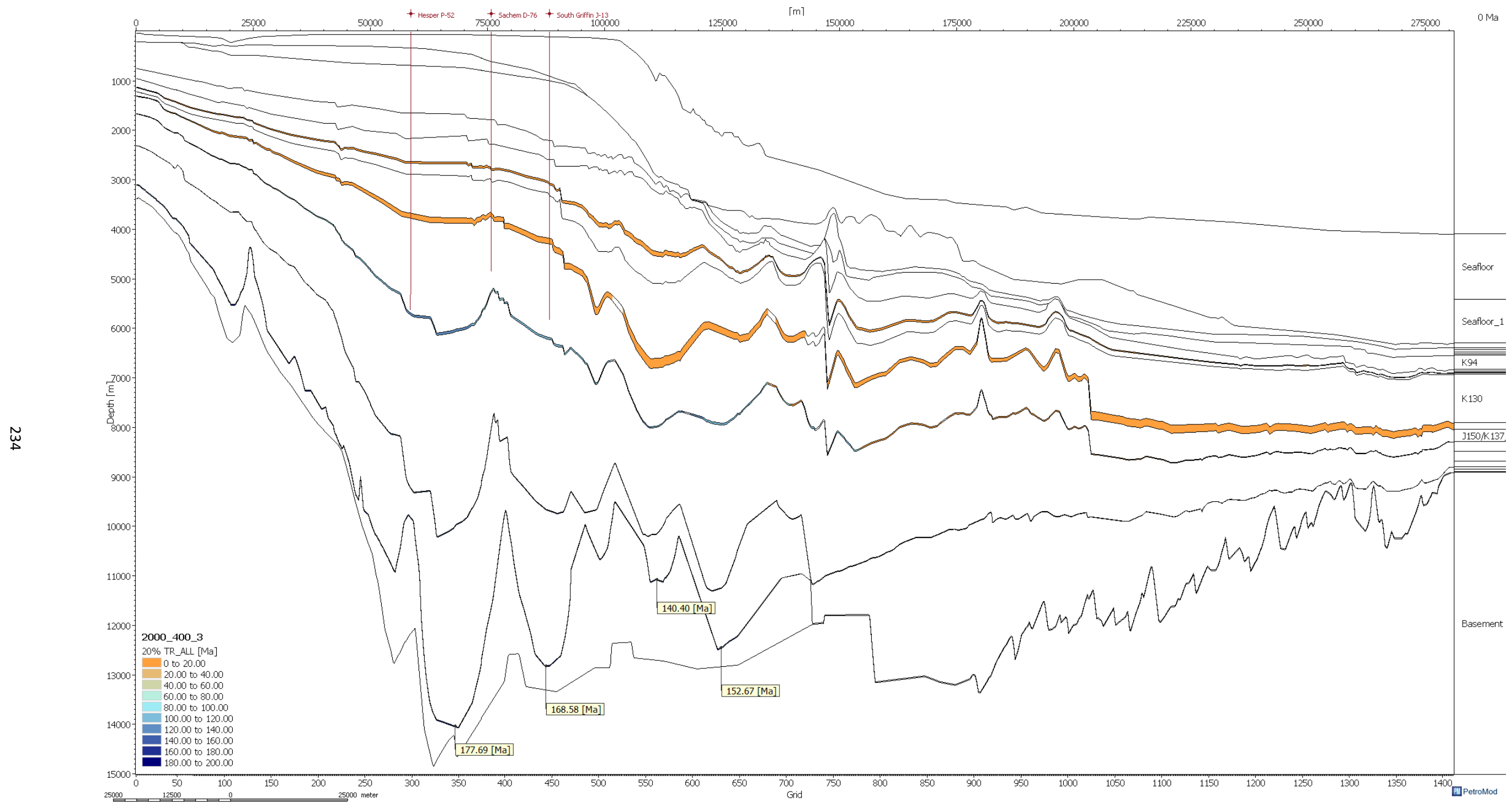


Figure E.35: Model of the critical moment for the Pliensbachian source rock (Type II) for NovaSPAN 2000 line. Here we can observe the five different source rocks in the model; the Lower Jurassic source rock is the bottommost layer. The data points indicate the critical moment age that the potential Lower Jurassic had generated hydrocarbons exceeding the threshold.

Critical Moment – Pliensbachian Source Rock (Kerogen Type I)

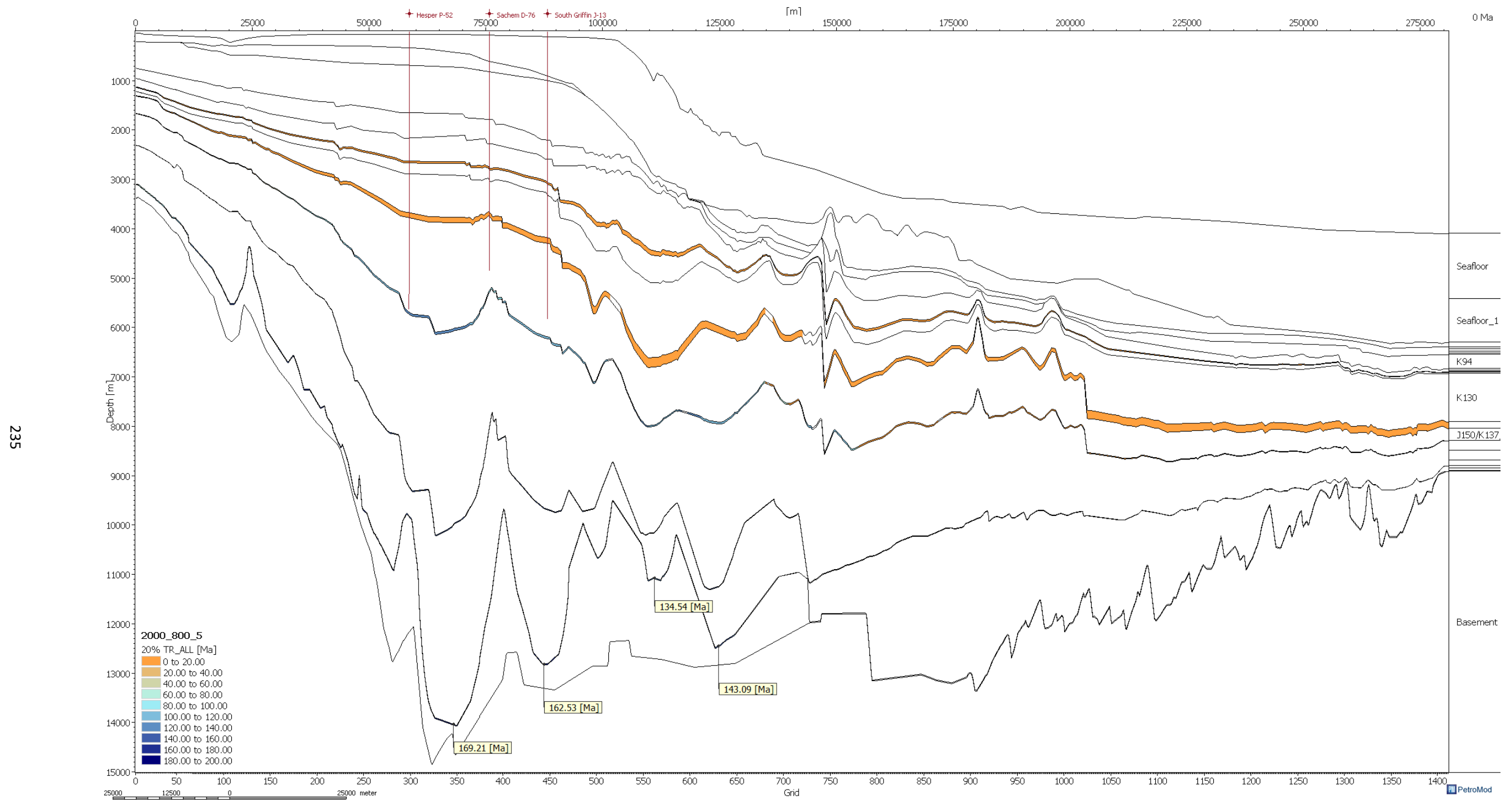


Figure E.36: Model of the critical moment for the Pliensbachian source rock (Type I) for NovaSPAN 2000 line. Here we can observe the five different source rocks in the model; the Lower Jurassic source rock is the bottommost layer. The data points indicate the critical moment age that the potential Lower Jurassic had generated hydrocarbons exceeding the threshold.

Appendix F: Composite Maps

F.1 Base Case Scenario

This set of maps are composite maps created from five shelf-to-slope NovaSPAN models (NovaSPAN 1100, NovaSPAN 1400, NovaSPAN 1600, NovaSPAN 1800 and NovaSPAN 2000).

These maps are 1 km by 1 km grids.

Depth of the Pliensbachian Source Rock

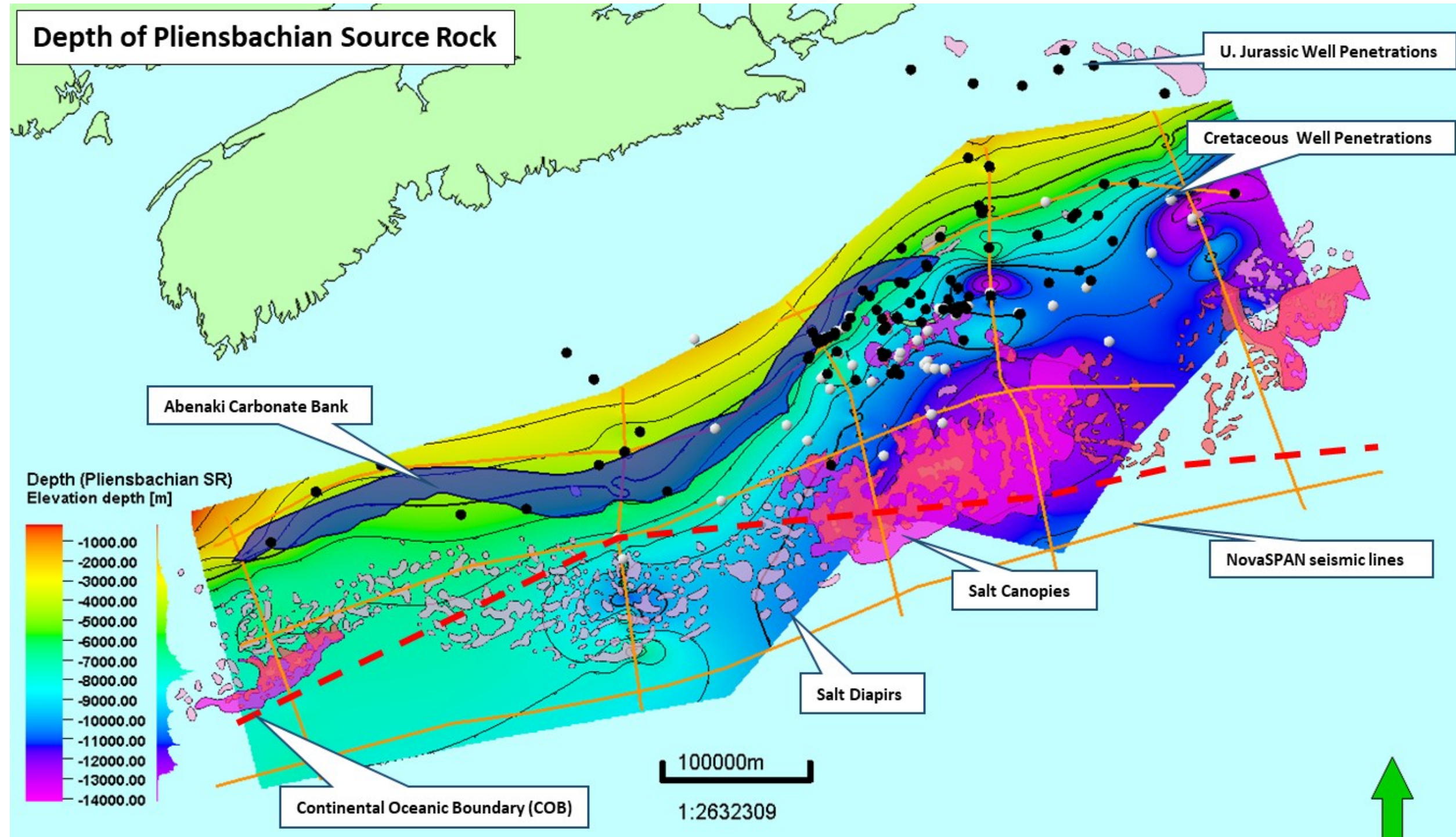


Figure F.37: Map of depth below sea level of the Pliensbachian source rock (1 km by 1 km smooth gridded) based on NovaSPAN 1100, 1400, 1600, 1800 and 2000. The dark blue irregular shape is the extent of the Abenaki carbonates. The irregular pink shapes are the salt diapirs and canopies. The dots are all the boreholes in the Scotian Basin; the black dots are boreholes that penetrated the Jurassic Intervals (Middle – Upper Jurassic), the white dots are boreholes that did not penetrate the Jurassic internals.

Temperature Map at the Top of Pliensbachian Source Rock

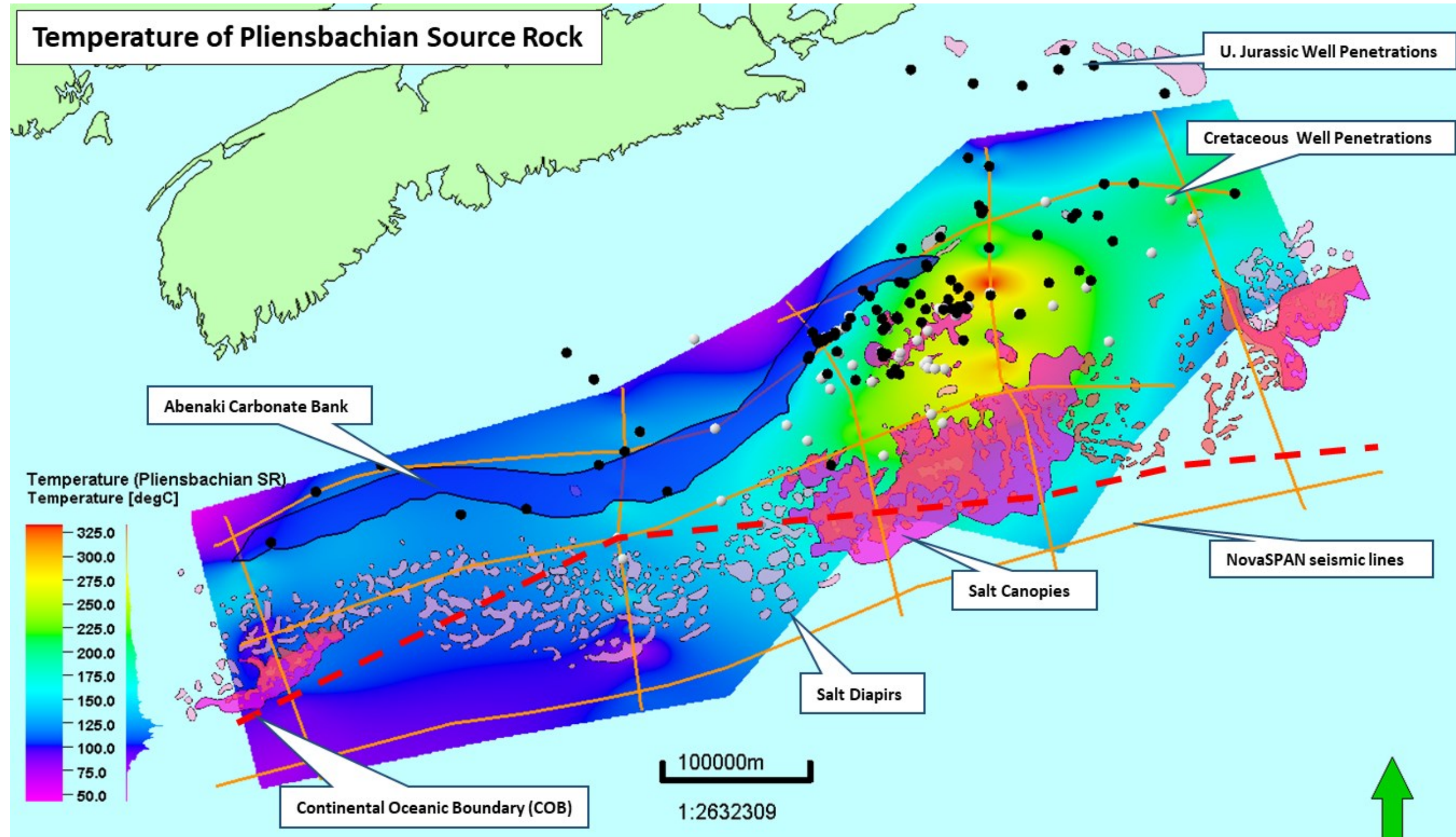


Figure F.38: Temperature map (1 km by 1 km smooth gridded) at the top of the Pliensbachian source rock based on NovaSPAN 1100, 1400, 1600, 1800 and 2000 models. The dark blue irregular shape is the extent of the Abenaki carbonates. The irregular pink shapes are the salt diapirs and canopies. The dots are all the boreholes in the Scotian Basin; the black dots are boreholes that penetrated the Jurassic Intervals (Middle – Upper Jurassic), the white dots are boreholes that did not penetrate the Jurassic internals.

Heat Flow Map at the Top of Pliensbachian Source Rock

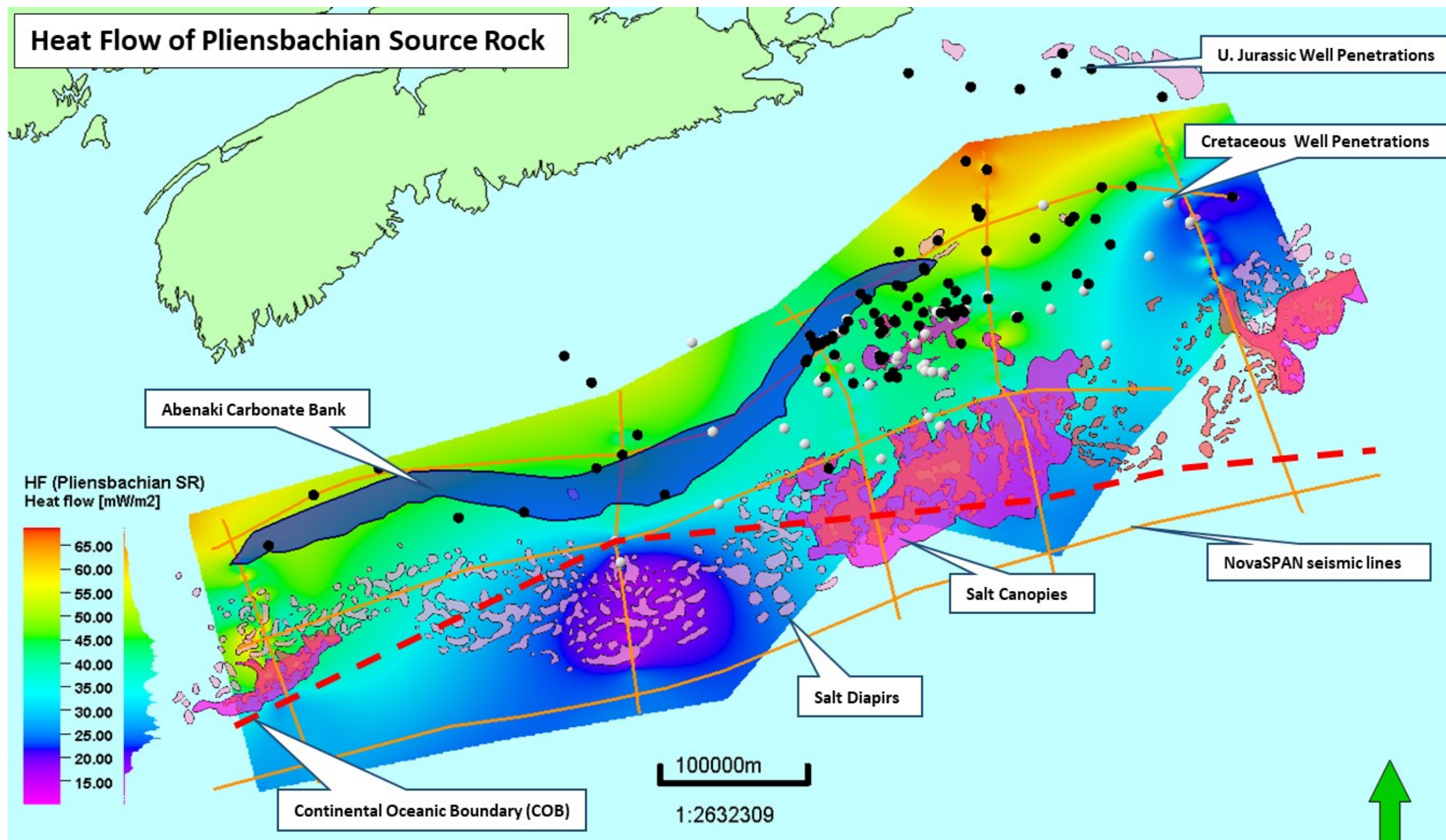


Figure F.39: Heat flow map (1 km by 1 km smooth gridded) at the top of the Pliensbachian source rock based on NovaSPAN 1100, 1400, 1600, 1800 and 2000 models. The dark blue irregular shape is the extent of the Abenaki carbonates. The irregular pink shapes are the salt diapirs and canopies. The dots are all the boreholes in the Scotian Basin; the black dots are boreholes that penetrated the Jurassic Intervals (Middle – Upper Jurassic), the white dots are boreholes that did not penetrate the Jurassic intervals.

Heat Flow Map at the Top of the Seafloor

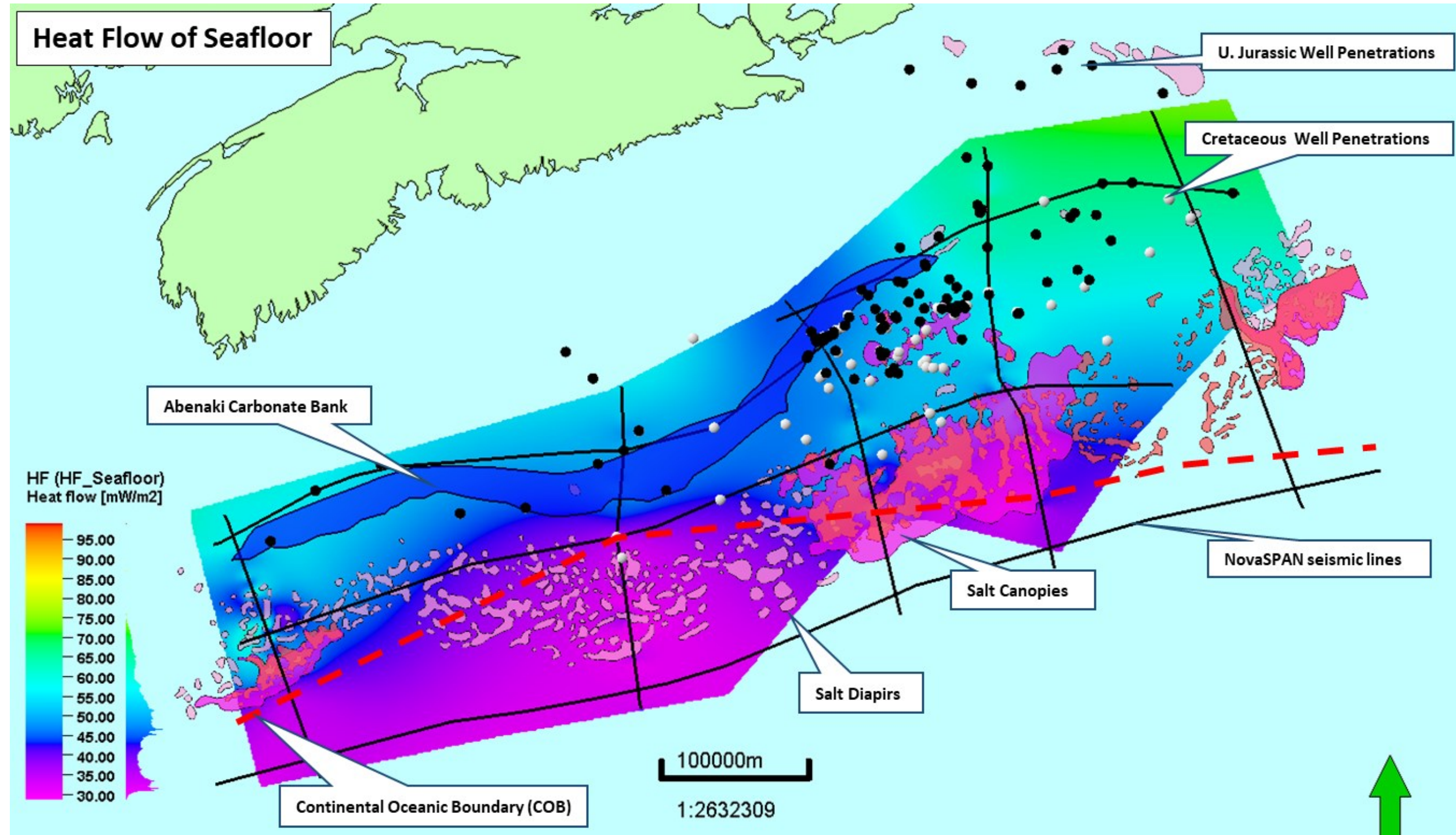


Figure F.40: Heat flow map (1 km by 1 km smooth gridded) at the seafloor based on NovaSPAN 1100, 1400, 1600, 1800 and 2000 models. The dark blue irregular shape is the extent of the Abenaki carbonates. The irregular pink shapes are the salt diapirs and canopies. The dots are all the boreholes in the Scotian Basin; the black dots are boreholes that penetrated the Jurassic Intervals (Middle – Upper Jurassic), the white dots are boreholes that did not penetrate the Jurassic intervals.

Vitrinite Reflectance Map of Pliensbachian Source Rock

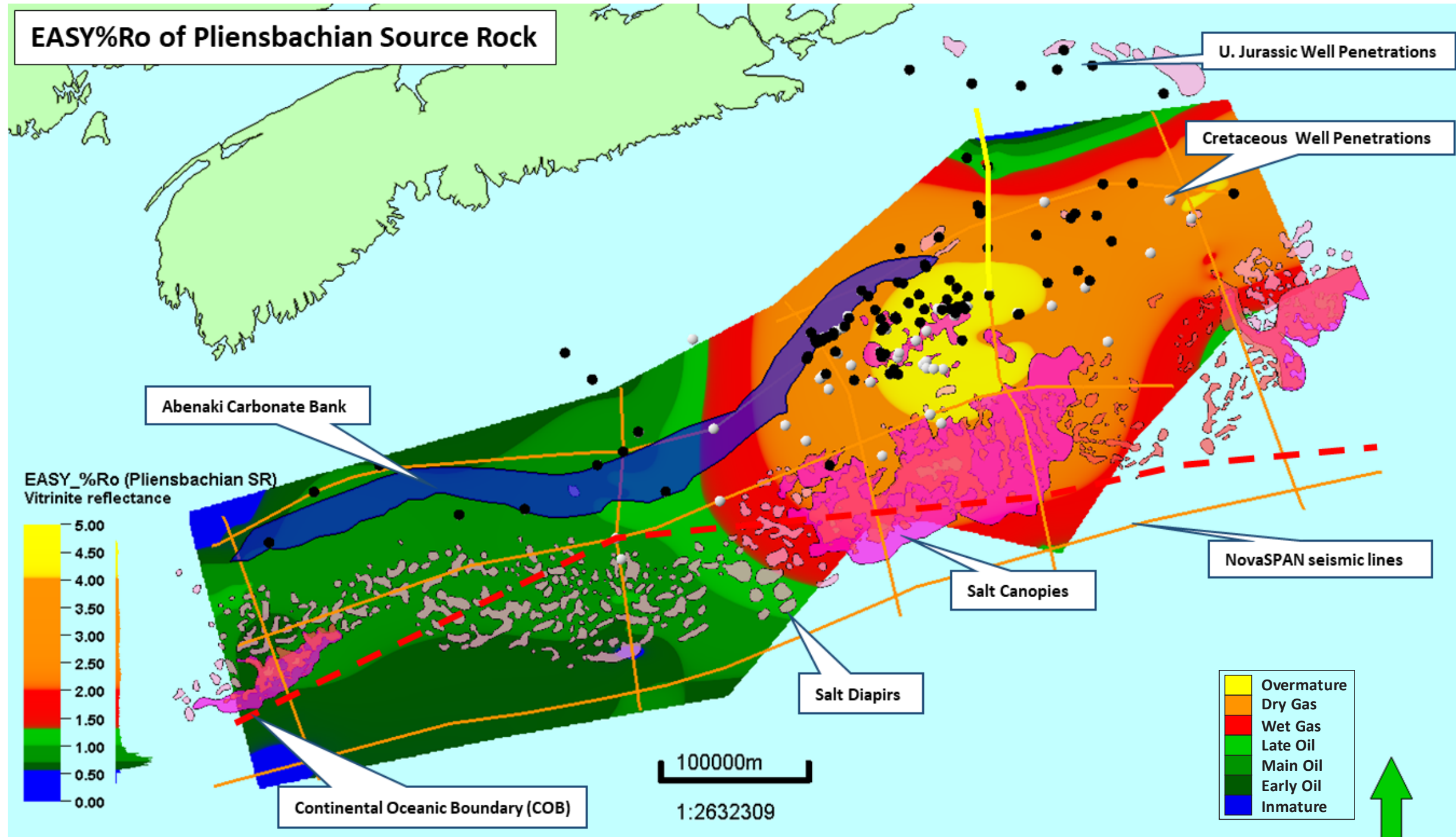


Figure F.41: Vitrinite reflectance map (1 km by 1 km smooth gridded) at the top of the Pliensbachian source rock based on NovaSPAN 1100, 1400, 1600, 1800 and 2000 models. The dark blue irregular shape is the extent of the Abenaki carbonates. The irregular pink shapes are the salt diapirs and canopies. The dots are all the boreholes in the Scotian Basin; the black dots are boreholes that penetrated the Jurassic Intervals (Middle – Upper Jurassic), the white dots are boreholes that did not penetrate the Jurassic internals. The range of Vitrinite reflectance: Blue (0 – 0.55) Immature, Dark Green (0.55-0.70) Early Oil, Green (0.70-1.00) Main Oil, Light Green (1.00-1.30) Late Oil, Red (1.30 – 2.00) Wet Gas, Orange (2.00 – 4.00) Dry Gas and Yellow (4.00 – 5.00) Overmature.

Transformation Ratio Map of the Pliensbachian Source Rock (Kerogen Type III)

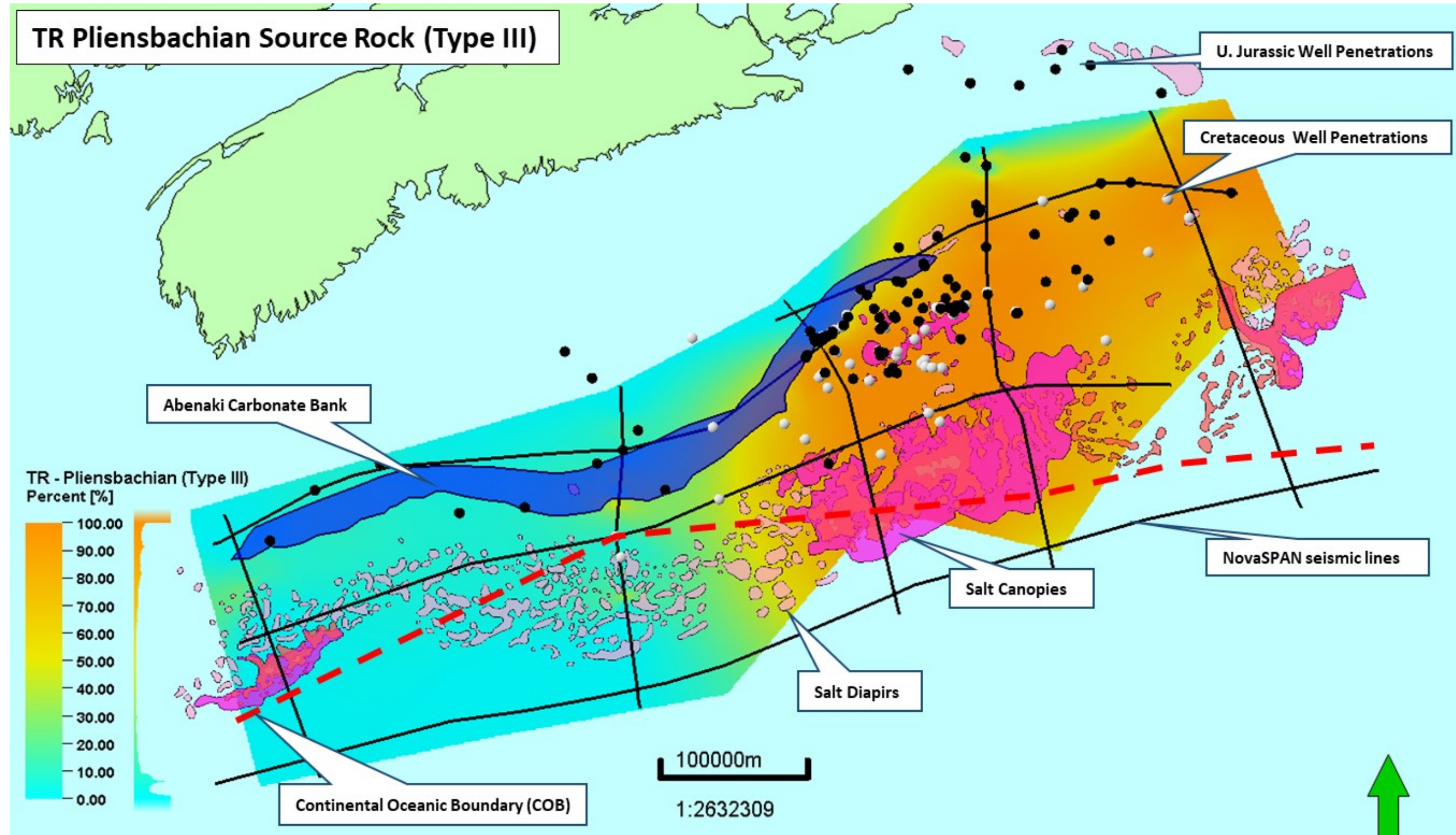


Figure F.42: Transformation ratio map (1 km by 1 km smooth gridded) of the Pliensbachian source rock of kerogen Type III. This particular source rock has a lower transformation ratio in the southwest corner of the Scotian Basin and a higher transformation ratio towards the northeastern corner of the Scotian Basin.

Transformation Ratio Map of the Pliensbachian Source Rock (Kerogen Type II)

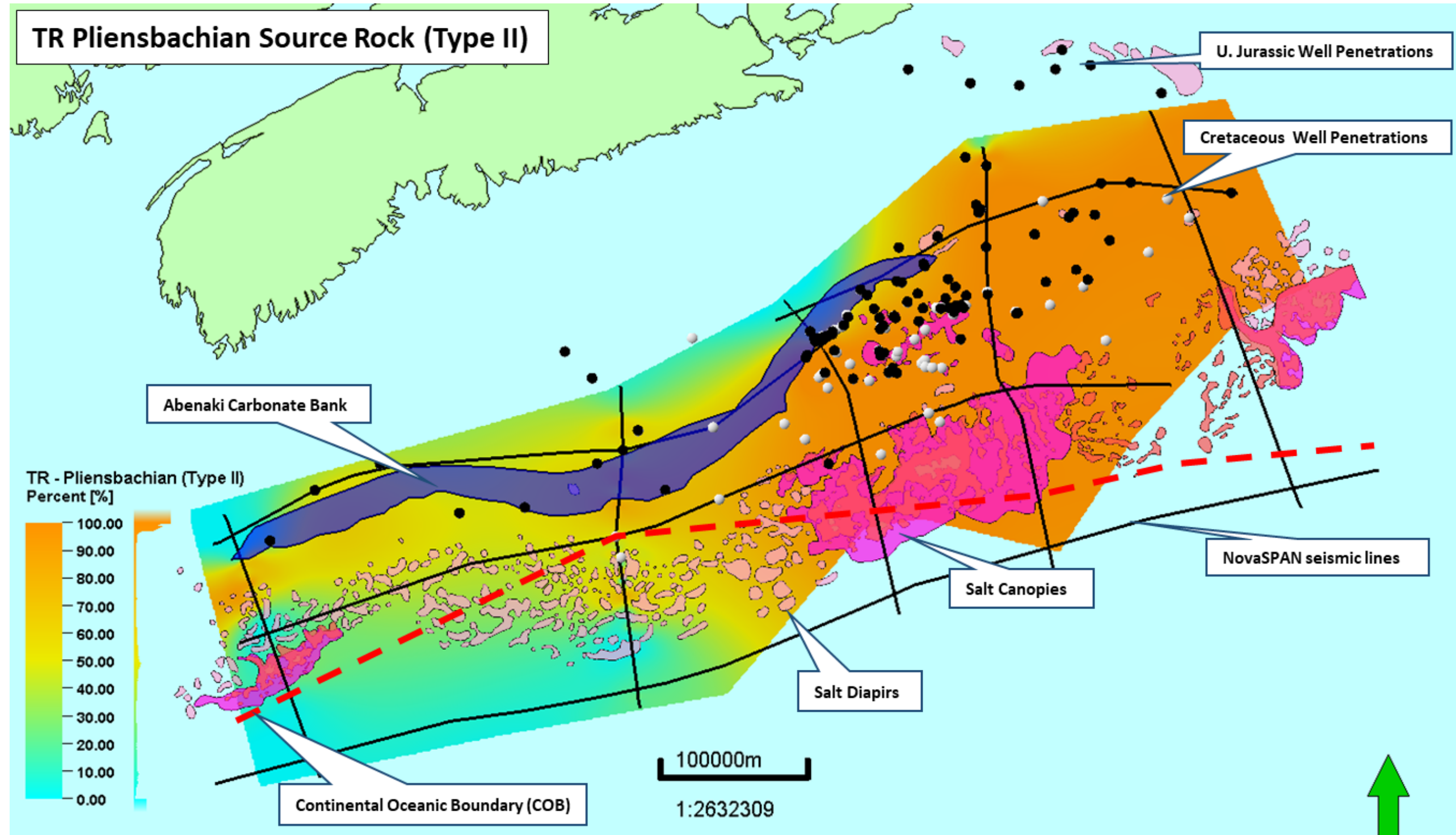


Figure F.43: Transformation ratio map (1 km by 1 km smooth gridded) of the Pliensbachian source rock of kerogen Type II. This particular source rock has a lower transformation ratio in the southwest corner of the Scotian Basin and a higher transformation ratio towards the northeastern corner of the Scotian Basin.

Transformation Ratio Map of the Pliensbachian Source Rock (Kerogen Type I)

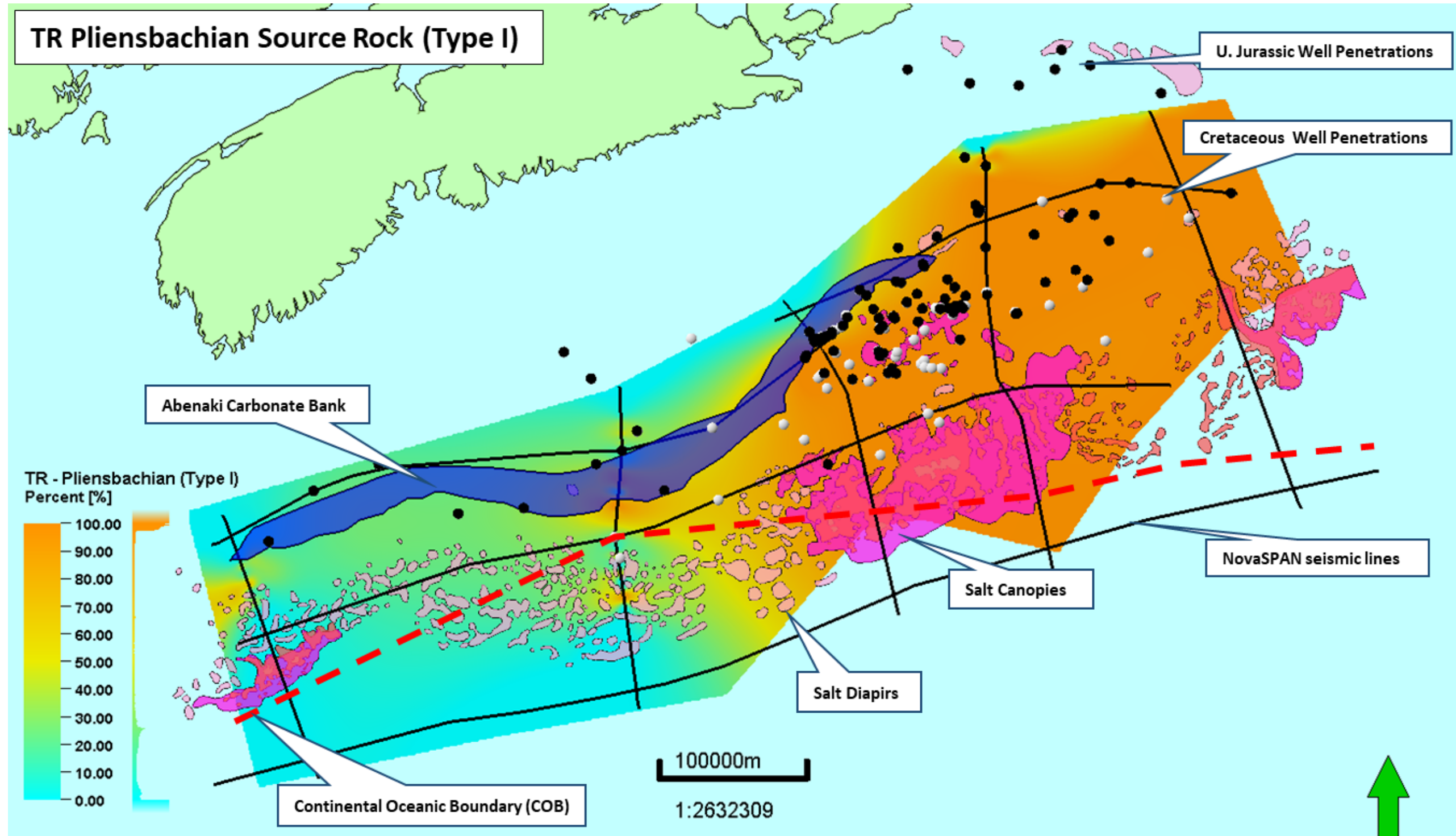


Figure F.44: Transformation ratio map (1 km by 1 km smooth gridded) of the Pliensbachian source rock of kerogen Type I. This particular source rock has a lower transformation ratio in the southwest corner of the Scotian Basin and a higher transformation ratio towards the northeastern corner of the Scotian Basin.

Critical Moment Map of the Pliensbachian Source Rock (Kerogen Type III)

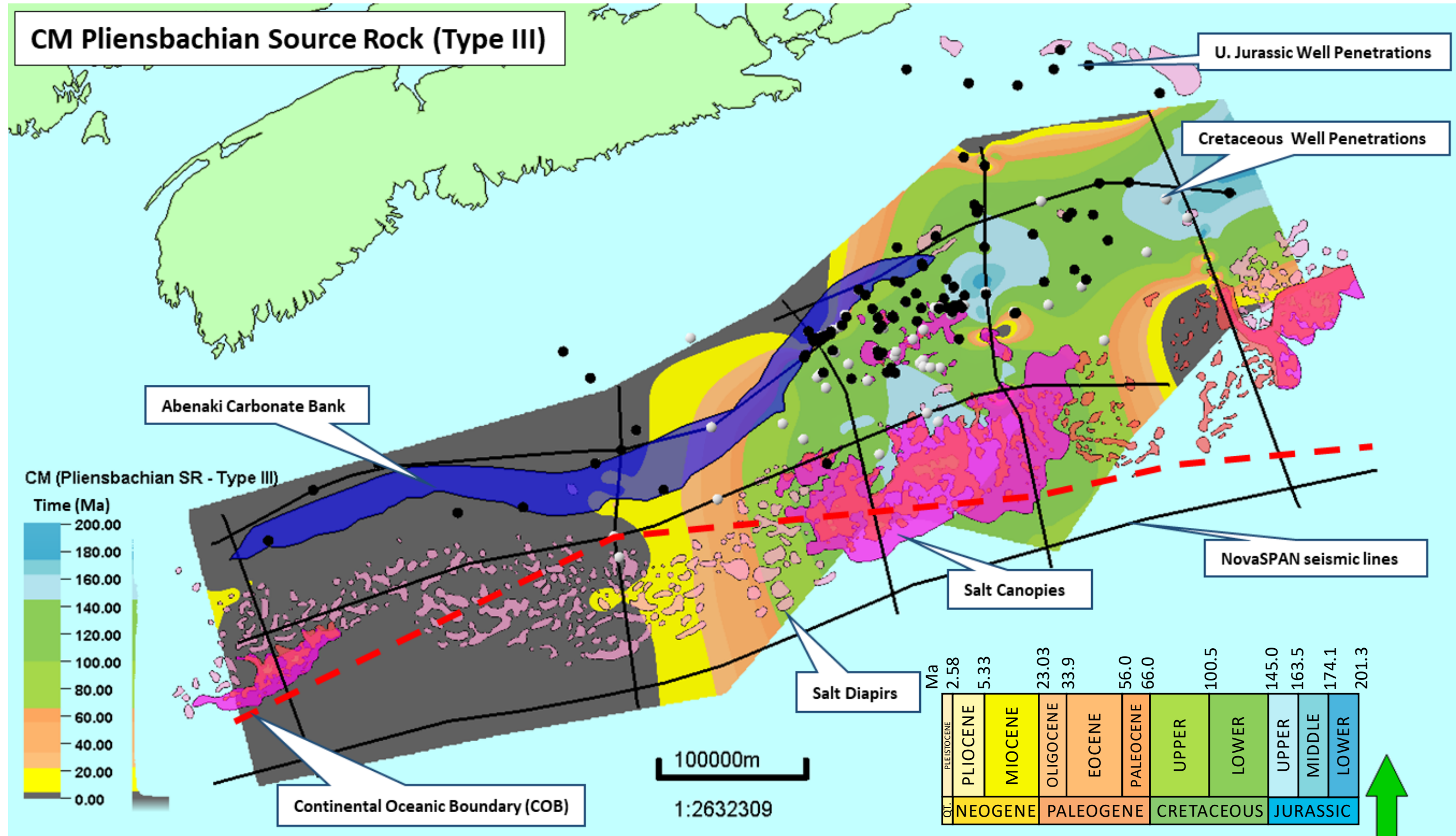


Figure F.45: Critical moment map (1 km by 1 km smooth gridded) of the Pliensbachian source rock of kerogen Type III. The Critical Moment is defined when the transformation ratio reached 20% of hydrocarbon generation.

Critical Moment Map of the Pliensbachian Source Rock (Kerogen Type II)

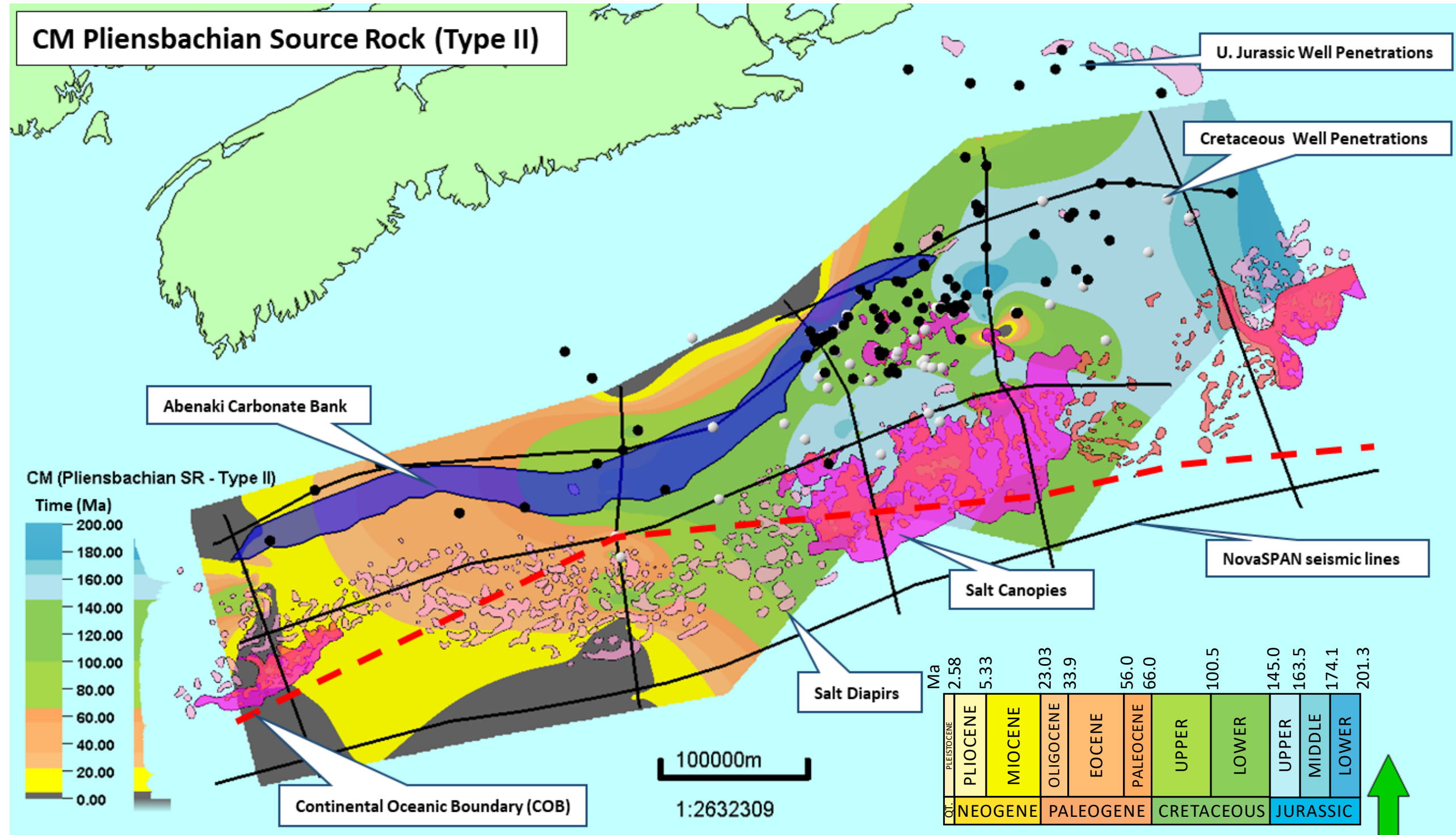


Figure F.46: Critical moment map (1 km by 1 km smooth gridded) of the Pliensbachian source rock of kerogen Type II. The Critical Moment is defined when the transformation ratio reached 20% of hydrocarbon generation.

Critical Moment Map of the Pliensbachian Source Rock (Kerogen Type I)

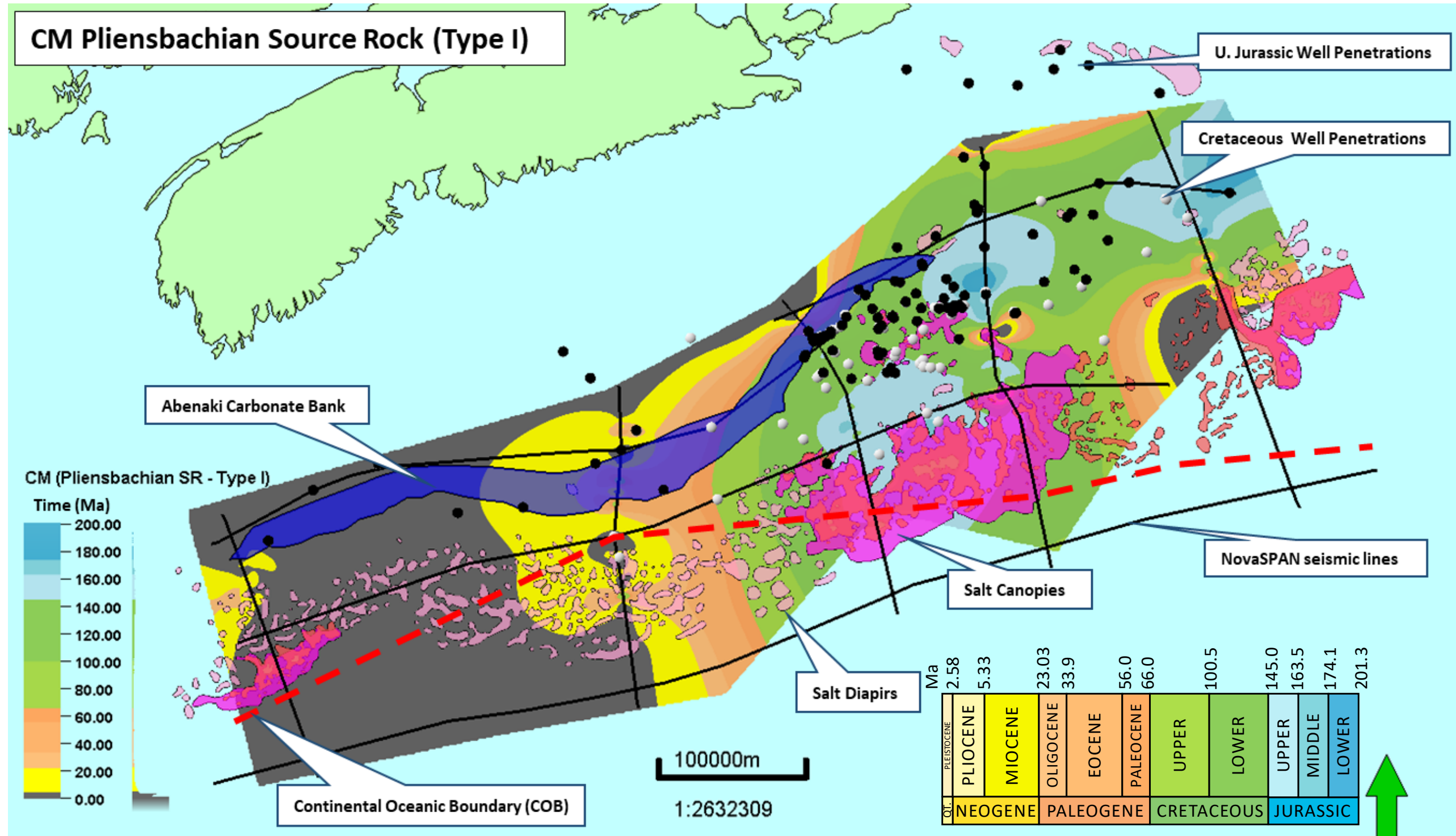


Figure F.47: Critical moment map (1 km by 1 km smooth gridded) of the Pliensbachian source rock of kerogen Type I. The Critical Moment is defined when the transformation ratio reached 20% of hydrocarbon generation.

F.2 Sensitivity Maps

This set of maps are composite maps created from five shelf-to-slope NovaSPAN models (NovaSPAN 1100, NovaSPAN 1400, NovaSPAN 1600, NovaSPAN 1800 and NovaSPAN 2000).

These maps are 1 km by 1 km grids.

Maturity of the Pliensbachian Source Rock (Beta Factor from Inversion)

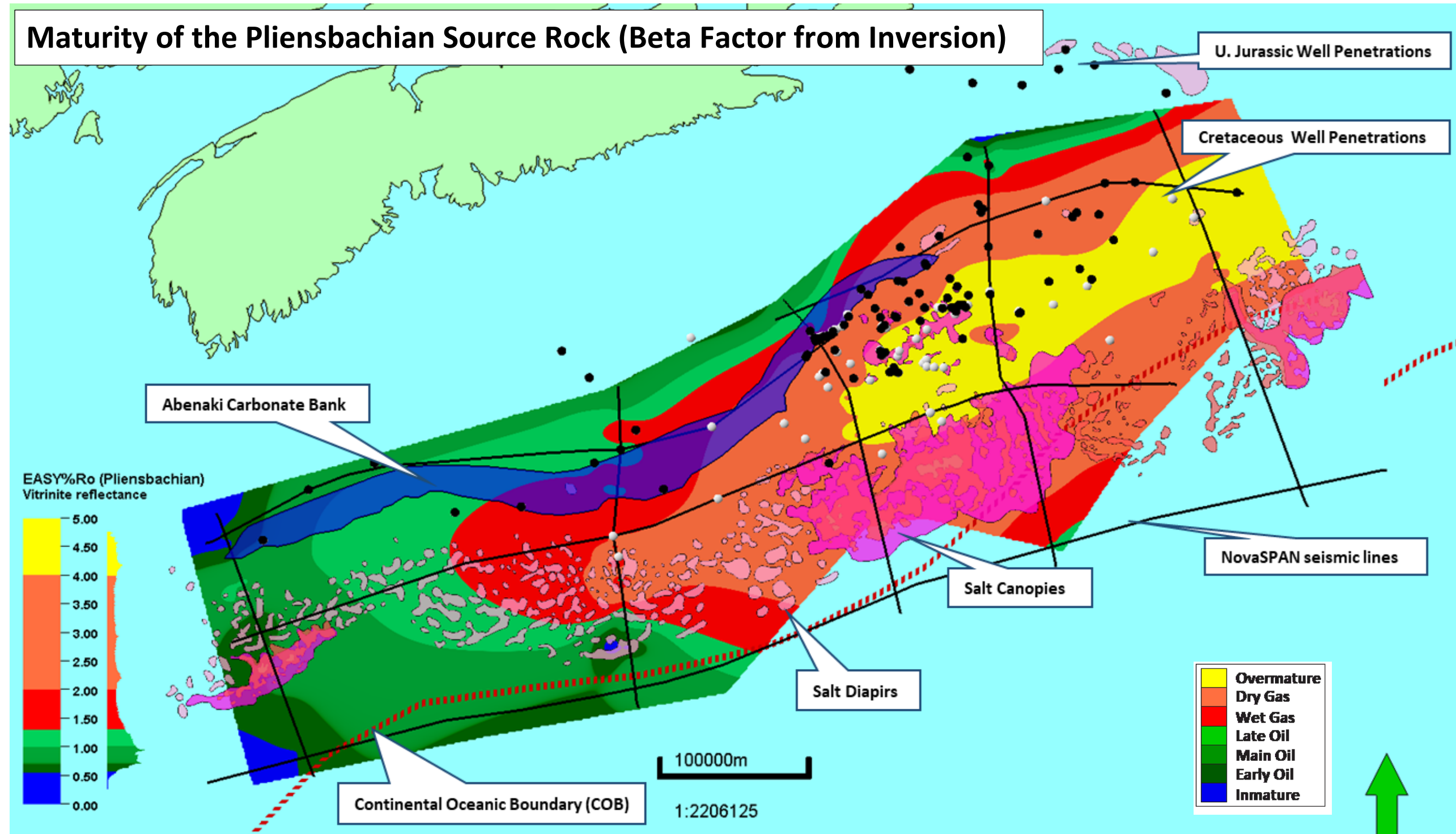


Figure F.48: Vitrinite reflectance map with COB boundary outboard of the ECMA. The dark blue irregular shape is the extent of the Abenaki carbonates. The irregular pink shapes are the salt diapirs and canopies. The dots are all the boreholes in the Scotian Basin; the black dots are boreholes that penetrated the Jurassic intervals (Middle – Upper Jurassic), the white dots are boreholes that did not penetrate the Jurassic internals. The range of vitrinite reflectance: Blue (0 – 0.55) Immature, Dark Green (0.55-0.70) Early Oil, Green (0.70-1.00) Main Oil, Light Green (1.00-1.30) Late Oil, Red (1.30 – 2.00) Wet Gas, Orange (2.00 – 4.00) Dry Gas and Yellow (4.00 – 5.00) Overmature.

Stretching Factor (β) – PetroMod inversion

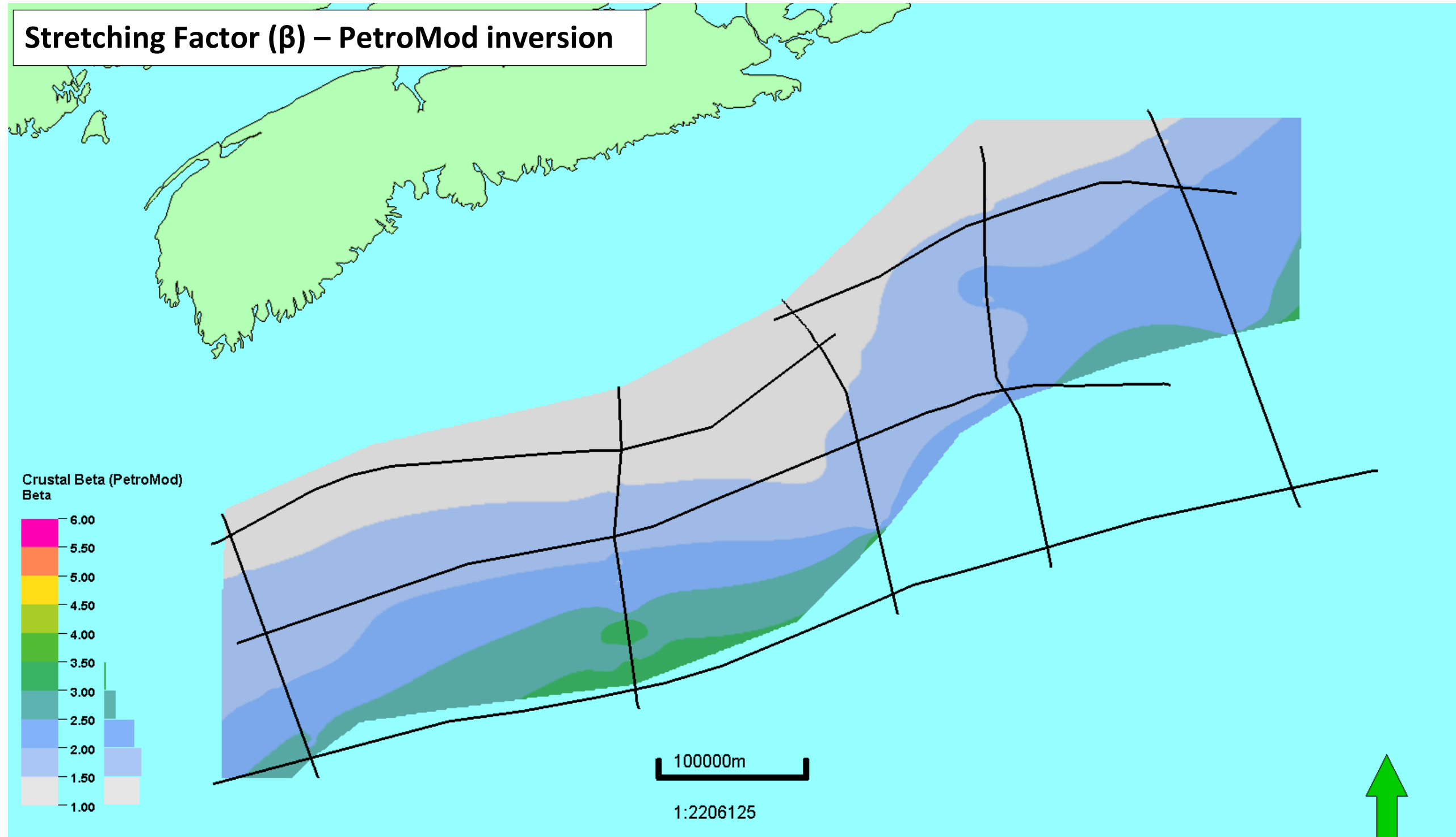


Figure F.49: Stretching Beta factor (β) map calculated to best fit crustal inversion process by PetroMod.

Depth of Basement (metres Subsea)

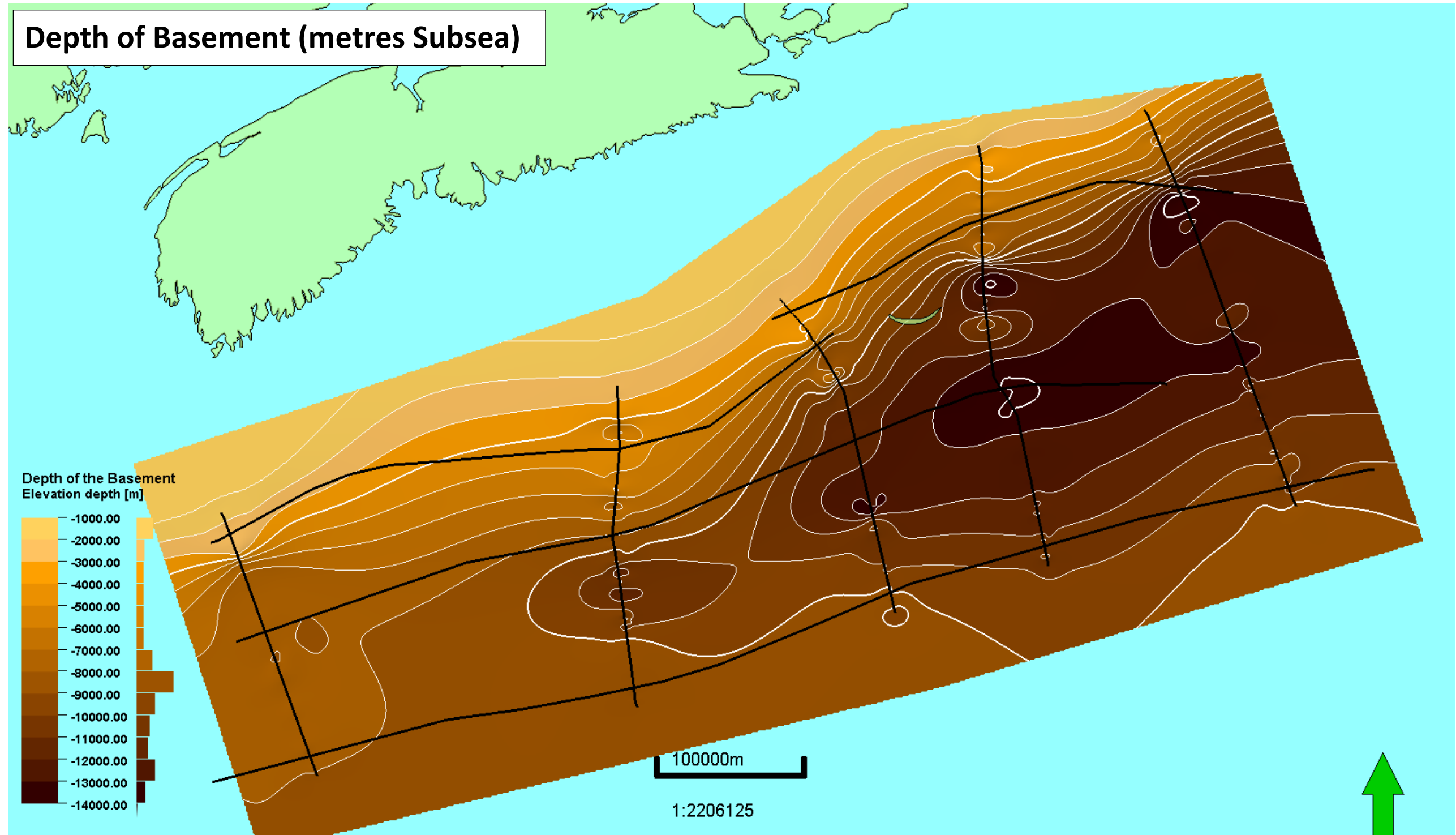


Figure F.51: Depth of the basement from sea level based on the models from this study. NovaSPAN line are in black lines.

Stretching Factor (β) via Moho from Refraction (Louden et al. 2010)

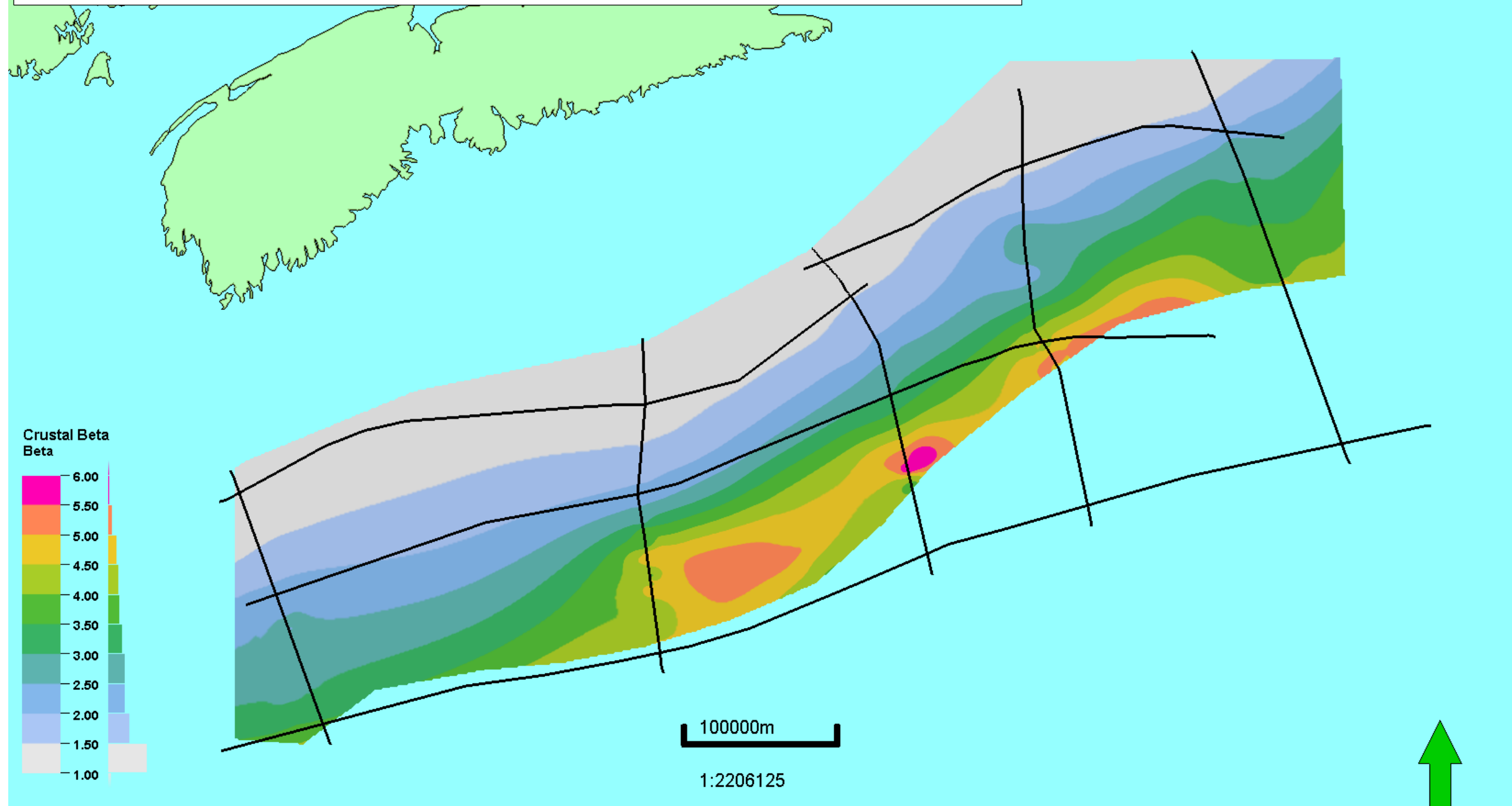


Figure F.52: Stretching Beta factor (β) map calculated using the depth of the Moho from Louden et al. (2010) and depth to sedimentary basement as defined in this project, with an initial depth of crustal lithosphere of 32 Km.

Comparison: Beta Factor Using Moho Depth from Refraction Data Divided by Beta Factor from Inversion within PetroMod

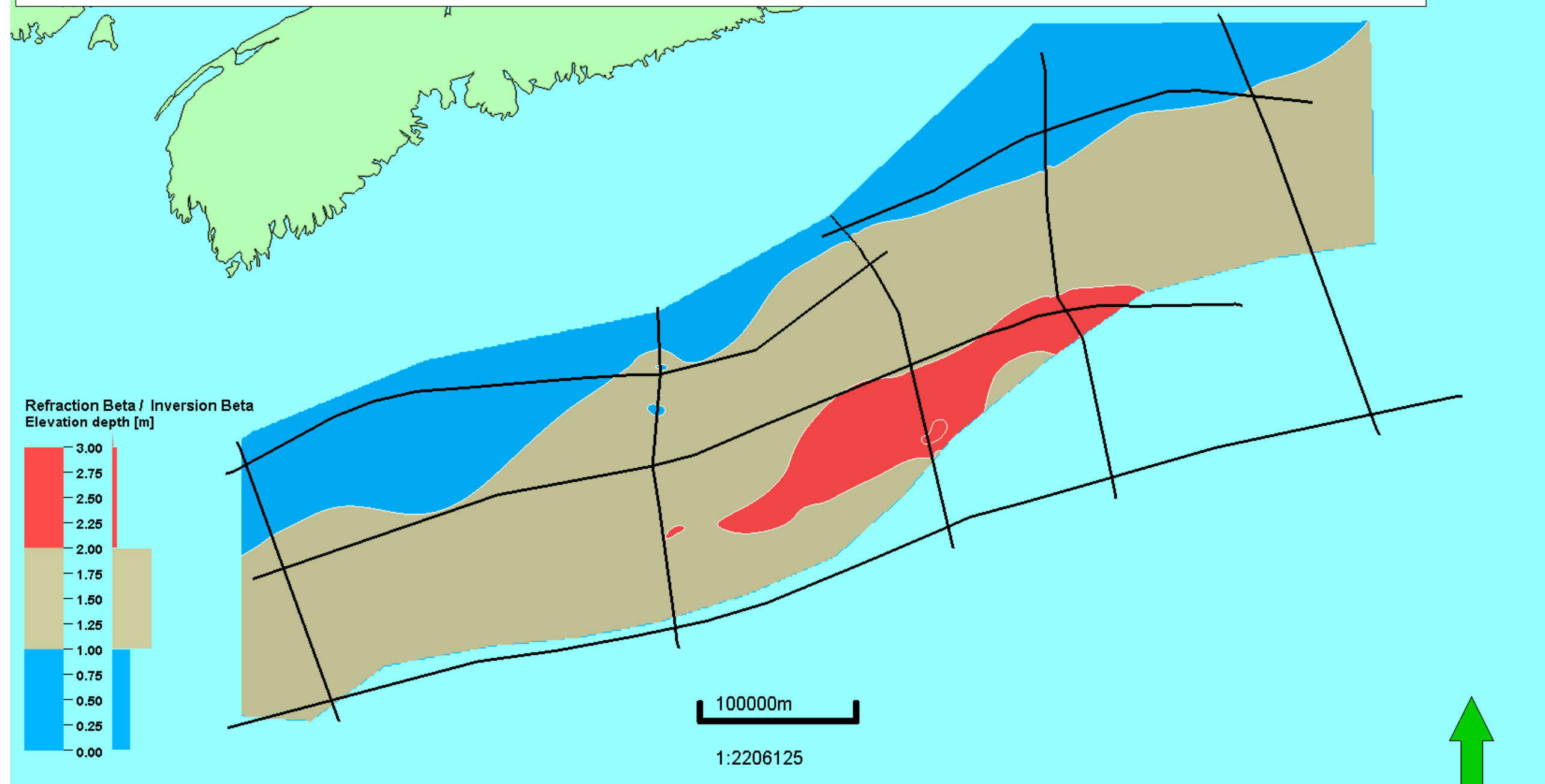


Figure F.53: Beta factor using Moho depth from refraction data divided by Beta factor from inversion within PetroMod.

Maturity Map of the Pliensbachian Source Rock (β via refraction data)

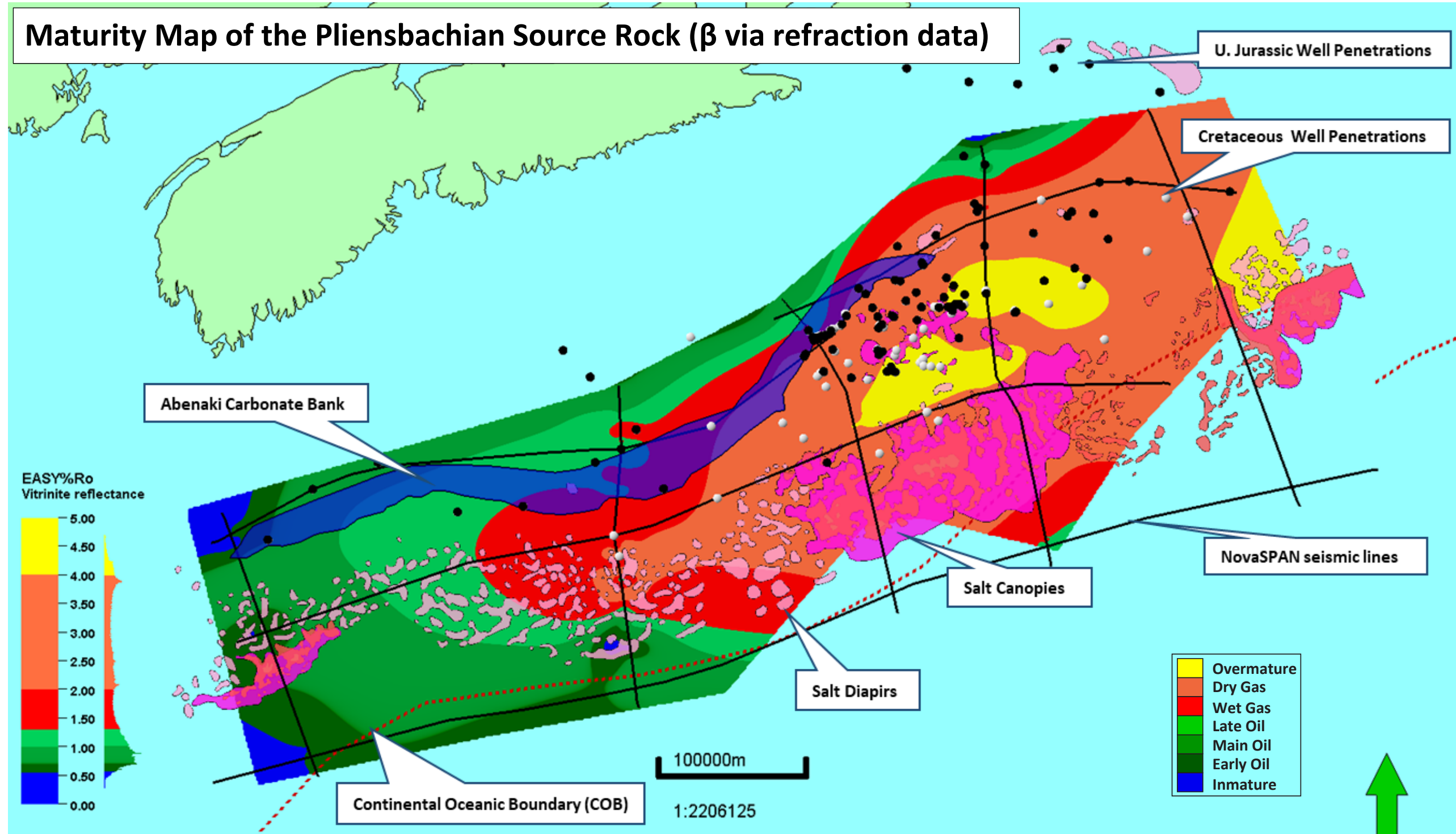


Figure F.54: Vitrinite reflectance map based on models with calculated crustal stretching factors from refraction data (Error! Reference source not found.). The dark blue irregular shape is the extent of the Abenaki carbonates. The irregular pink shapes are the salt diapirs and canopies. The dots are all the boreholes in the Scotian Basin; the black dots are boreholes that penetrated the Jurassic intervals (Middle – Upper Jurassic), the white dots are boreholes that did not penetrate the Jurassic intervals. The range of vitrinite reflectance: Blue (0 – 0.55) Immature, Dark Green (0.55-0.70) Early Oil, Green (0.70-1.00) Main Oil, Light Green (1.00-1.30) Late Oil, Red (1.30 – 2.00) Wet Gas, Orange (2.00 – 4.00) Dry Gas and Yellow (4.00 – 5.00) Overmature.

Vitrinite Reflectance Difference Map: VR via Beta from Refraction Data Minus VR via Beta from Inversion in PetroMod

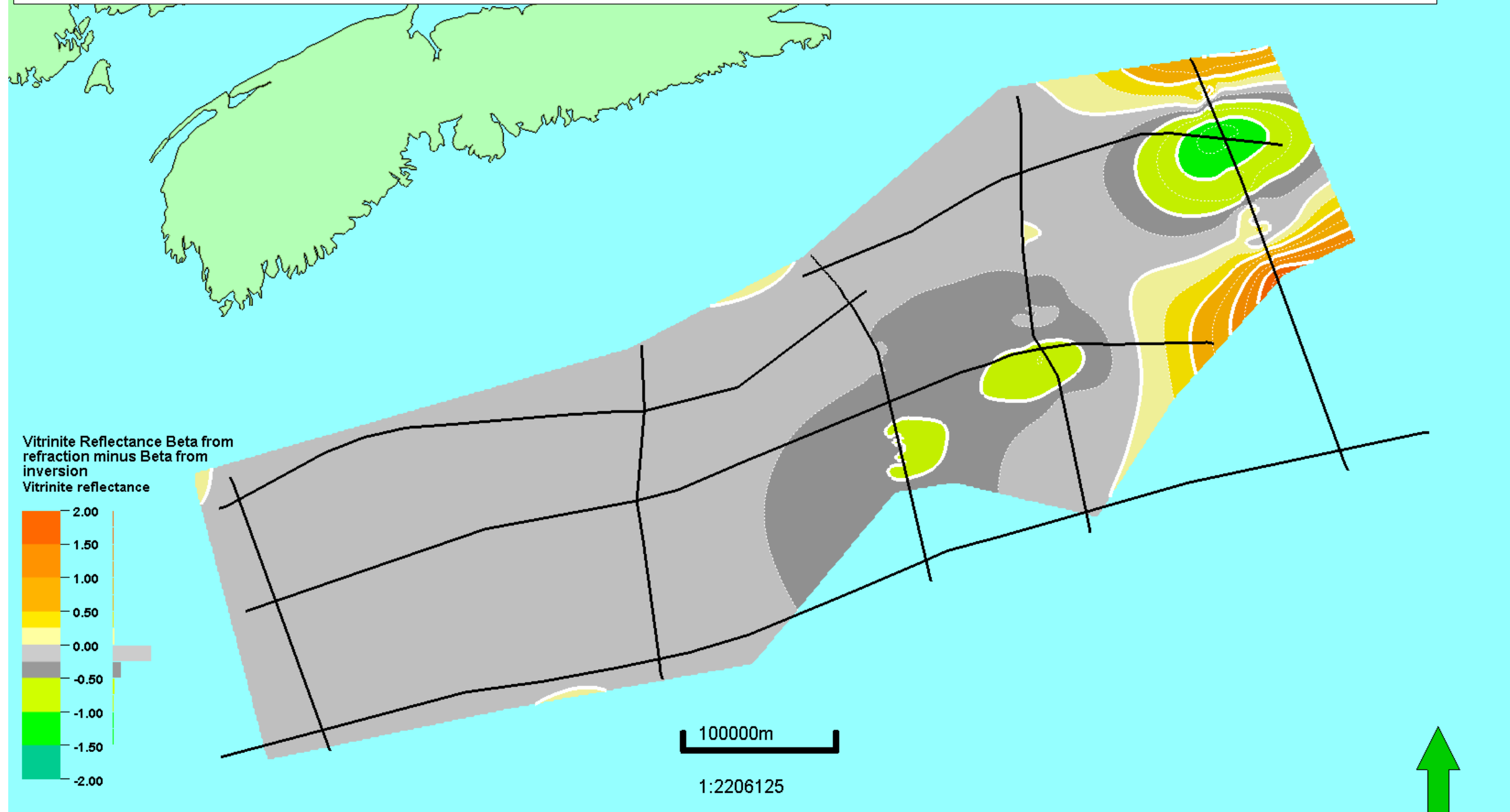


Figure F.55: Vitrinite reflectance difference map: VR via beta from refraction data minus VR via beta from inversion in PetroMod. Grey areas indicate that maturity via refraction data is typically lower than via inversion (except on parts of the northeast NovaSPAN line).

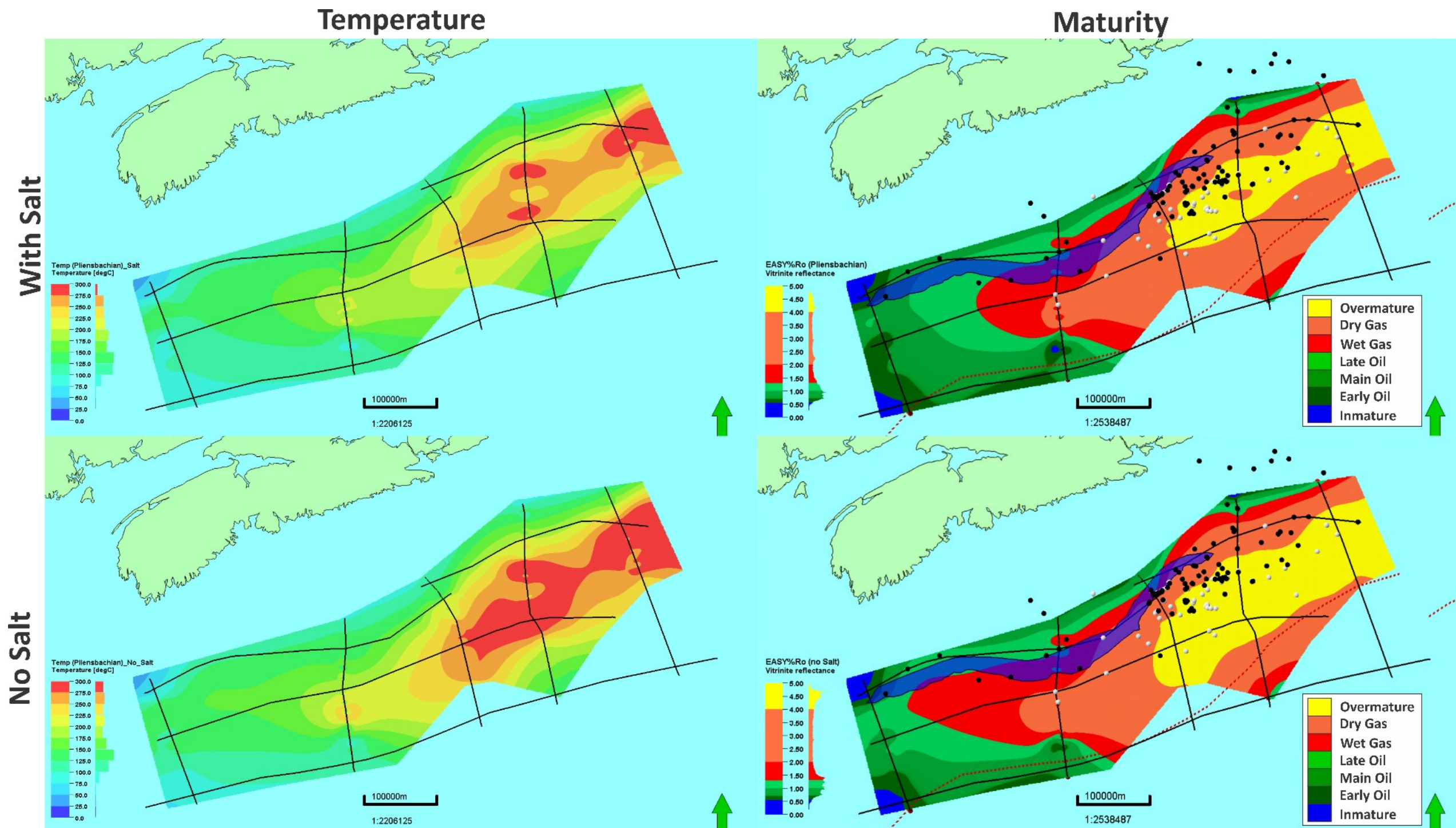


Figure F.56: A comparison of temperature and vitrinite reflectance testing the models with salt and no salt. The temperature maps for both case scenarios, shows a similar trend towards the northeast; this is because the Lower Jurassic rocks are deeper towards the northeast regions. Although, comparing both temperature maps, it is observed that the salt structures will have significantly lower temperatures compared to the map without salt. The effects of these higher temperatures also affect the maturity of the Lower Jurassic rocks, observed in the vitrinite reflectance maps. The vitrinite reflectance maps show moderate increases in the models without salt; although the maturity trends are similar for both case scenarios. The maturity is in the oil window in the southwest towards the gas/overmature window in the northeast. Dashed red line indicates the continental-oceanic boundary after Dehler (2010).

Maturity Map of the Pliensbachian Source Rock without Salt

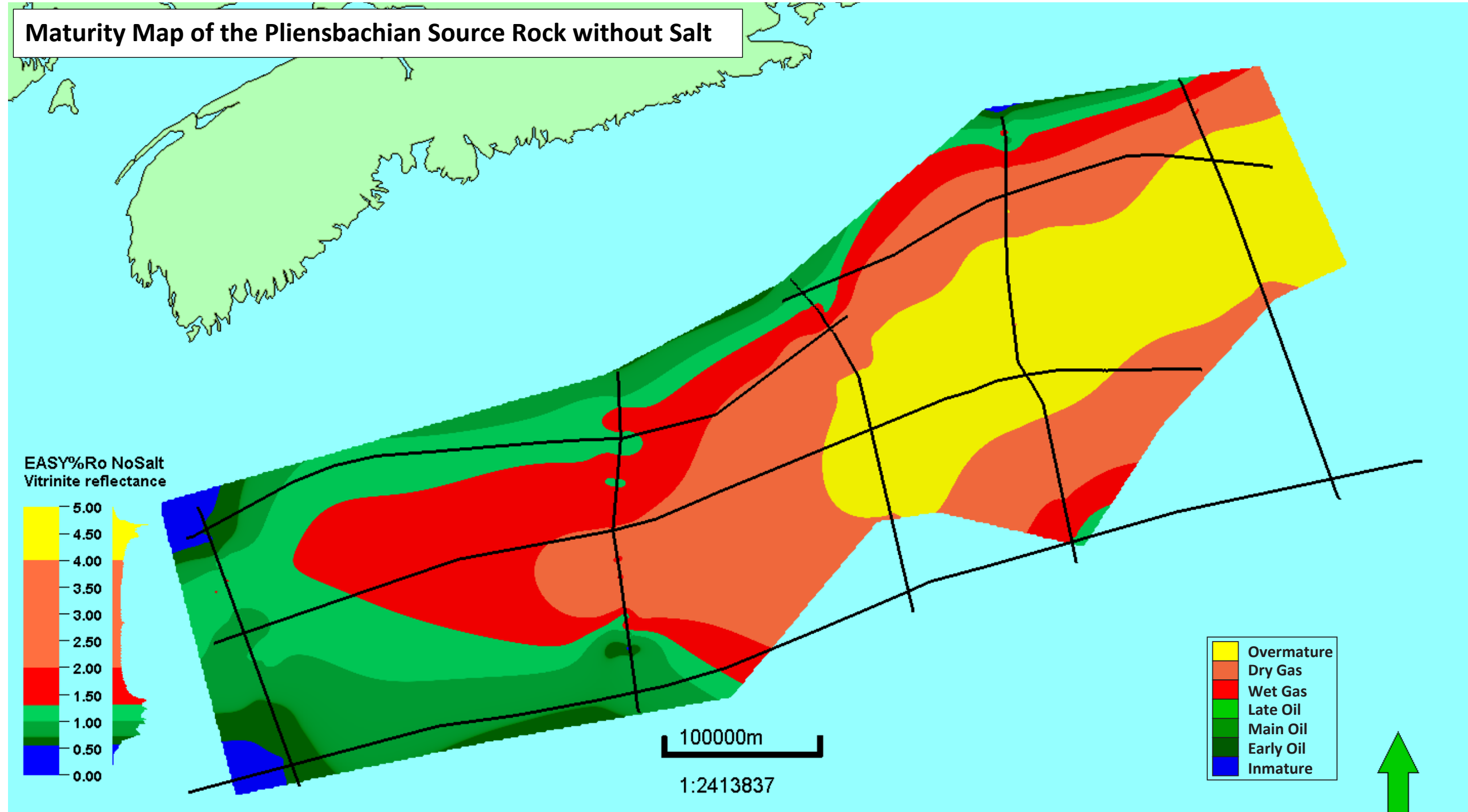


Figure F.57: Thermal effect on the vitrinite reflectance map without salt deposition in the Basin. The dark blue irregular shape is the extent of the Abenaki carbonates. The irregular pink shapes are the salt diapirs and canopies. The dots are all the boreholes in the Scotian Basin; the black dots are boreholes that penetrated the Jurassic intervals (Middle – Upper Jurassic), the white dots are boreholes that did not penetrate the Jurassic internals. The range of vitrinite reflectance: Blue (0 – 0.55) Immature, Dark Green (0.55-0.70) Early Oil, Green (0.70-1.00) Main Oil, Light Green (1.00-1.30) Late Oil, Red (1.30 – 2.00) Wet Gas, Orange (2.00 – 4.00) Dry Gas and Yellow (4.00 – 5.00) Overmature.

Temperature Difference from Models with Salt and No Salt

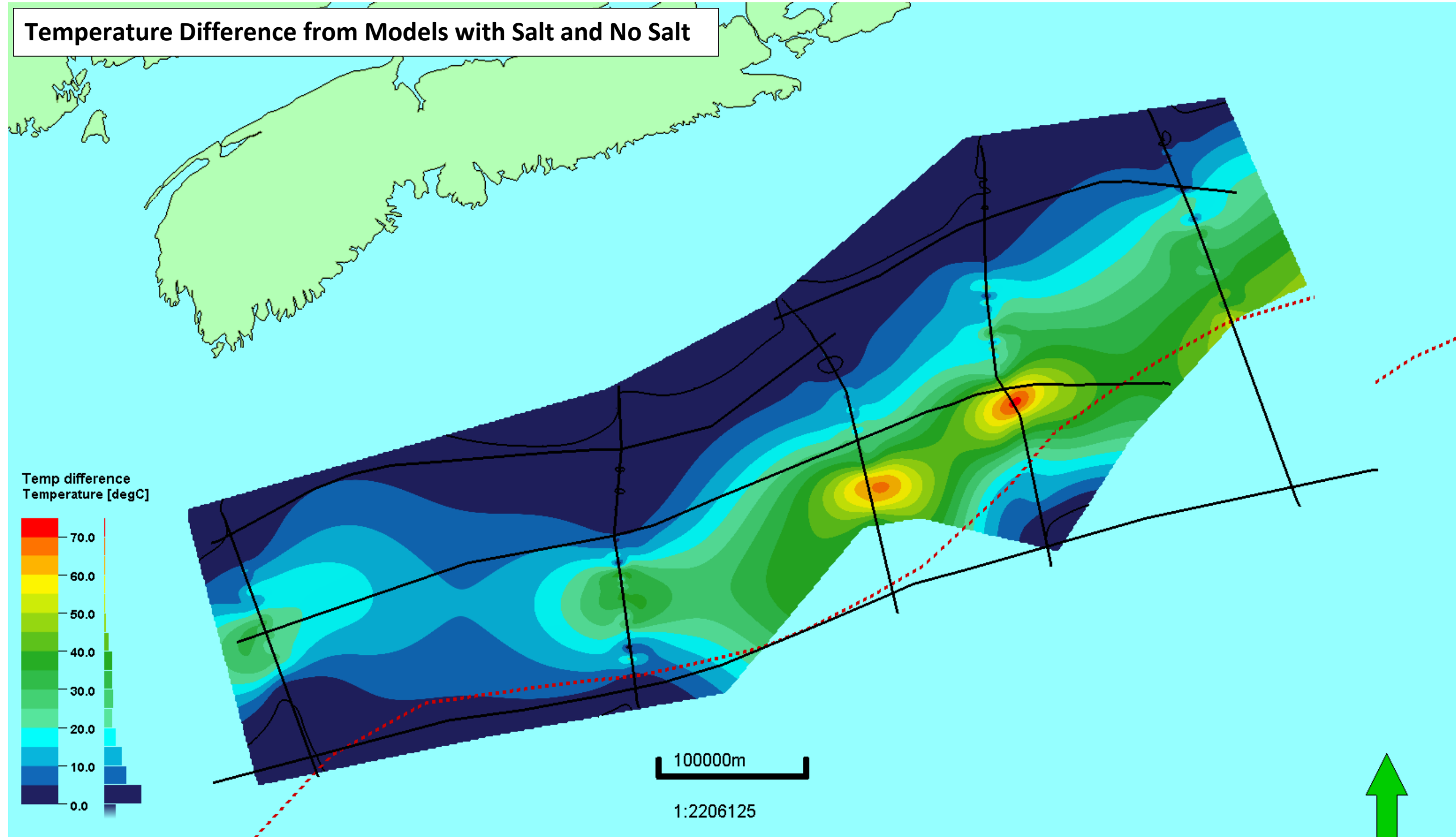
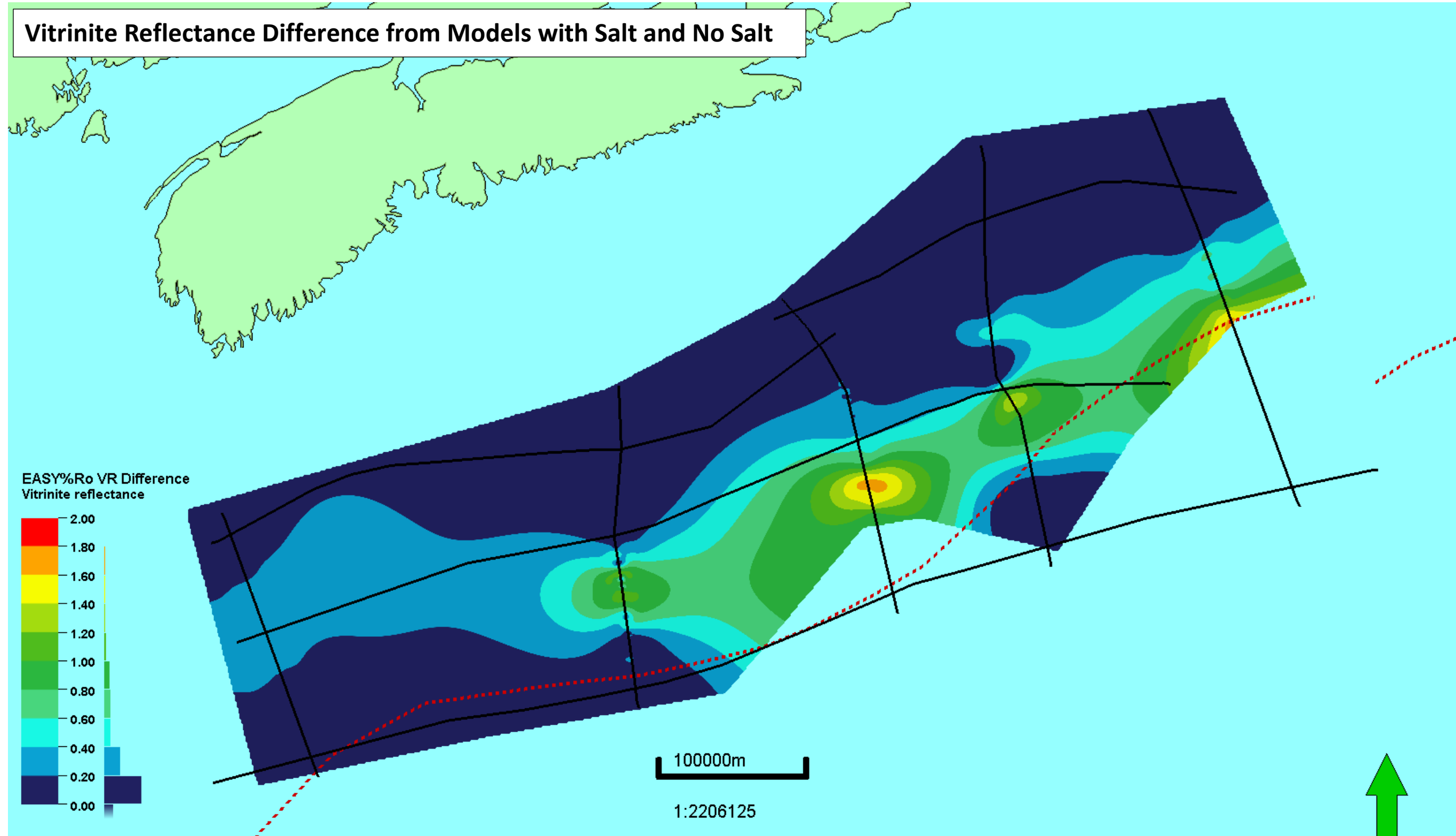


Figure F.58: This map show the change in temperature if the salt was not present in the model. The temperature map shows a significant change in regions were the salt is present, but it has a higher change in regions where the salt is more abundant. This increase in temperature also affects the maturity (vitrinite reflectance) of the Lower Jurassic rocks; the difference is shown in the vitrinite reflectance map.

Vitrinite Reflectance Difference from Models with Salt and No Salt



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Figure F.59: This vitrinite reflectance difference map shows the amount of %Ro that is affected by the influence of salt in the model. The map shows a significant change in regions where the salt is present, but it has a higher change in regions where the salt is more abundant.