Composite Lines in the Windsor Basin

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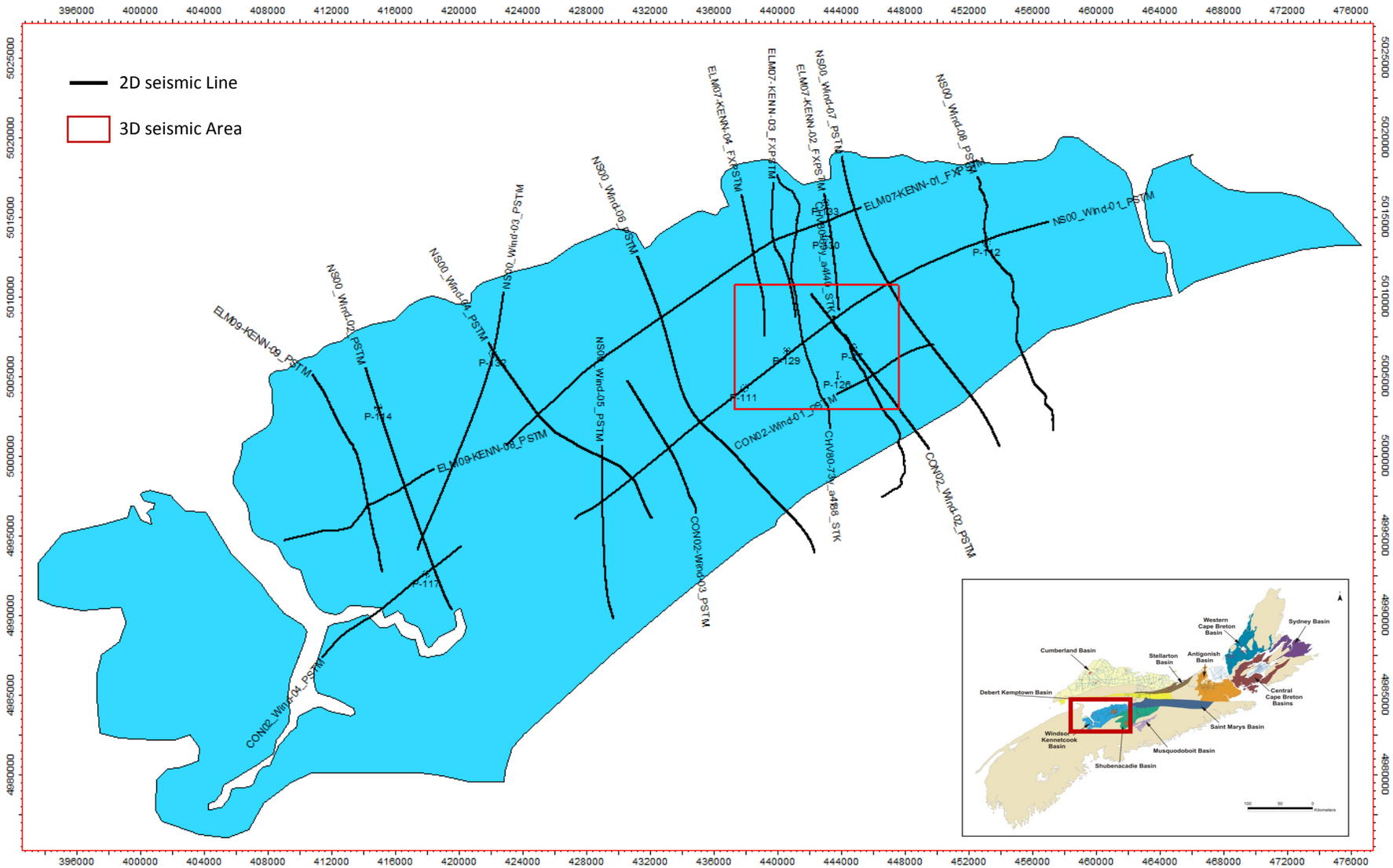
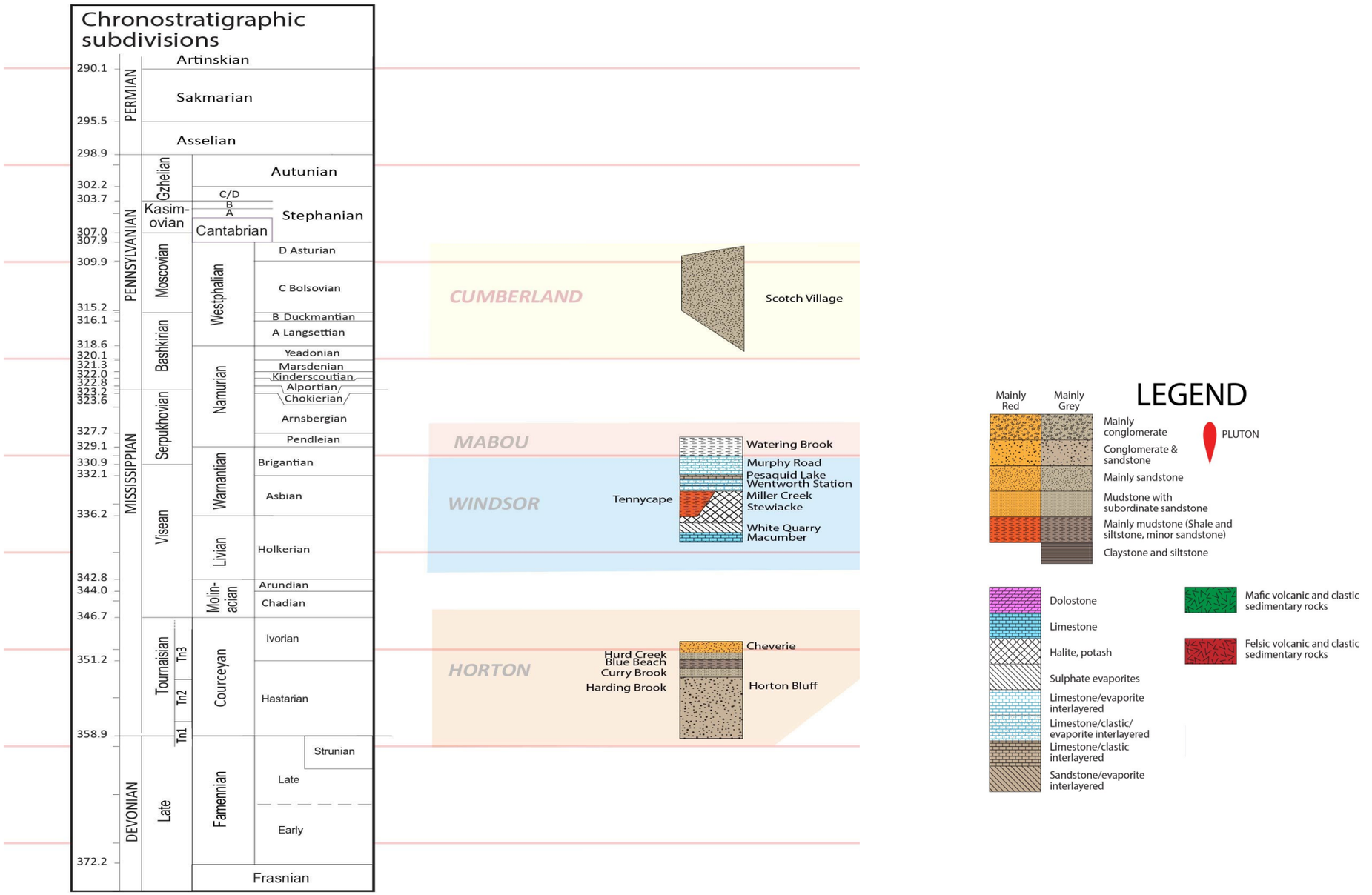
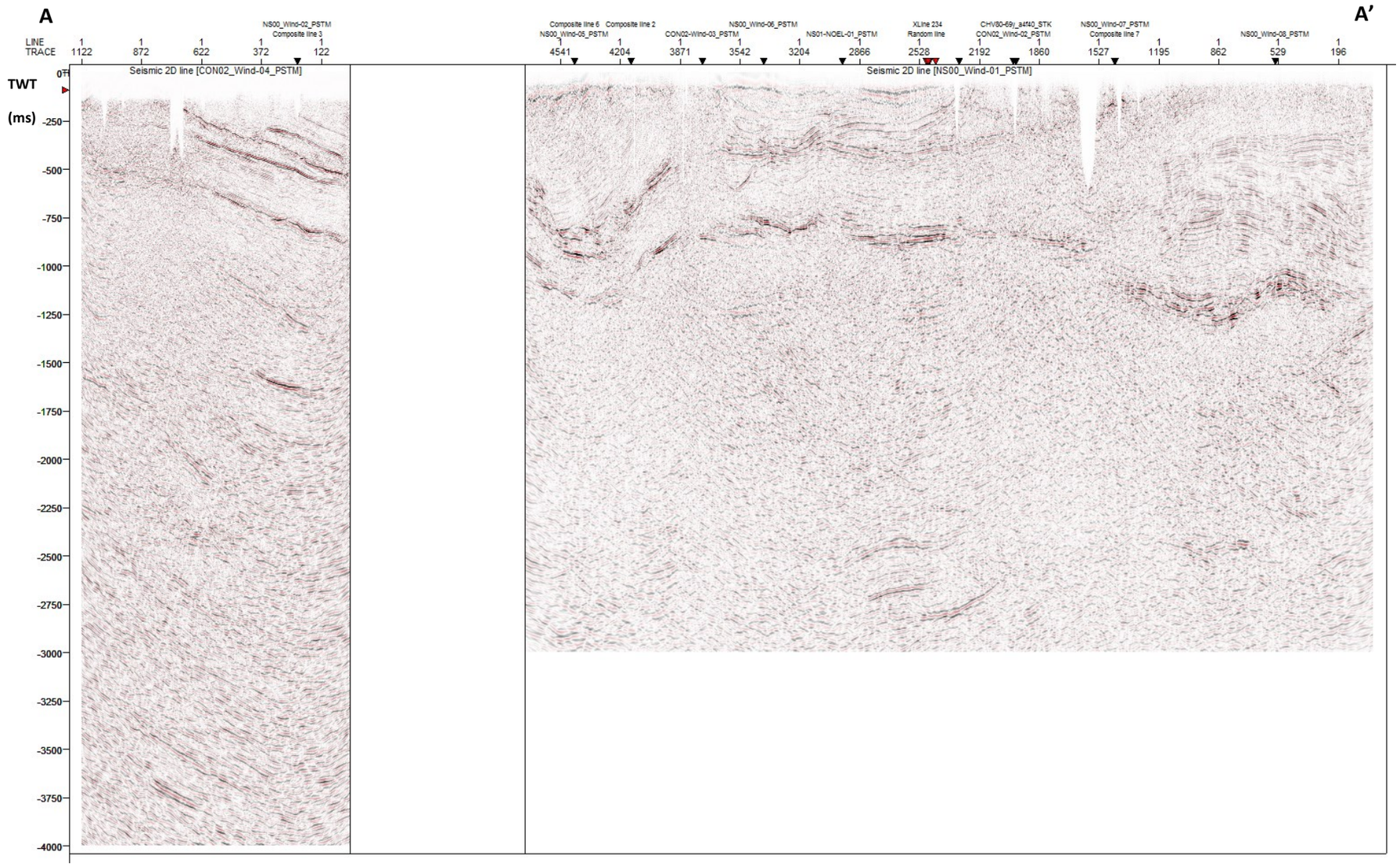


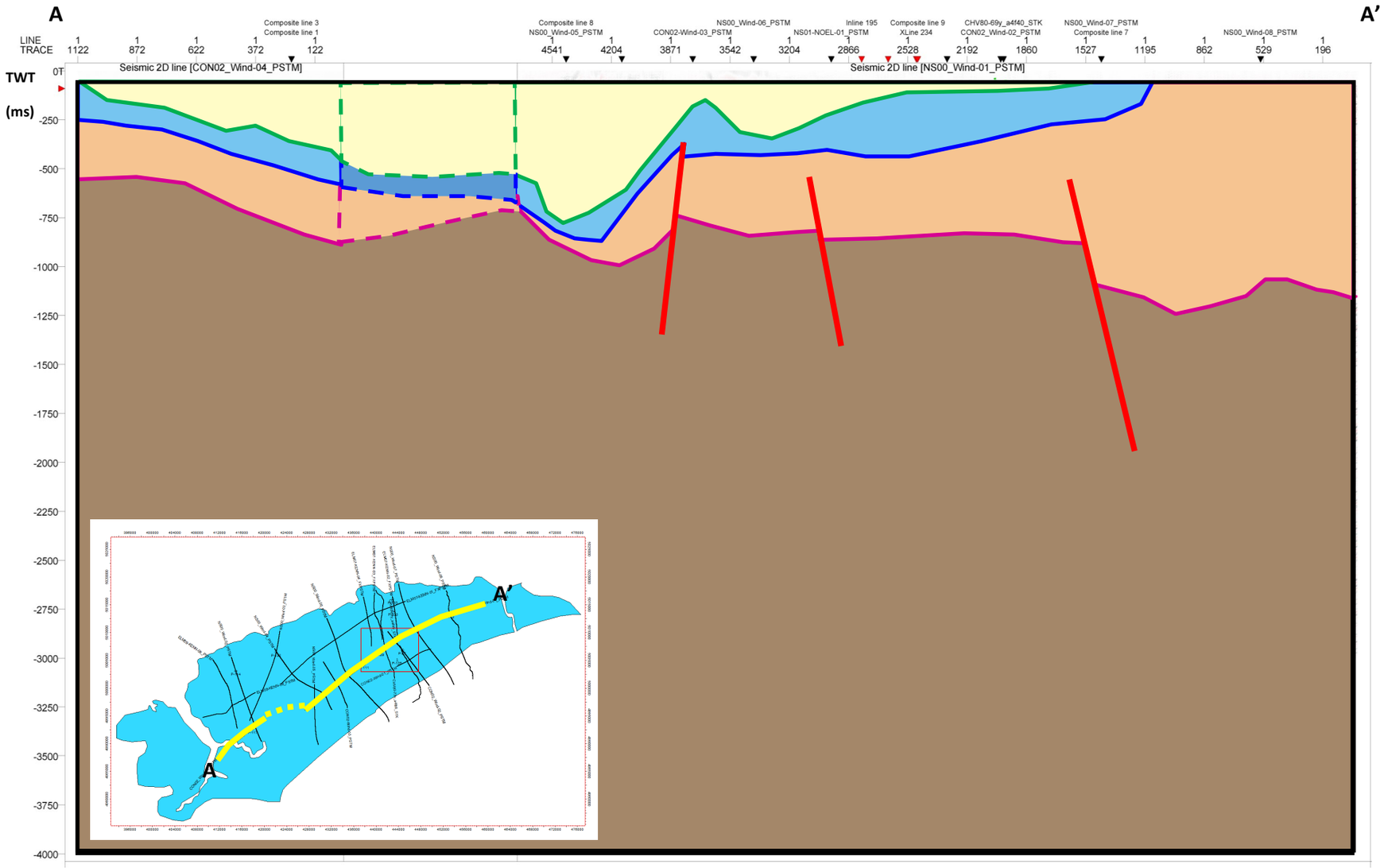
Location Map of the Study Area, Windsor Basin

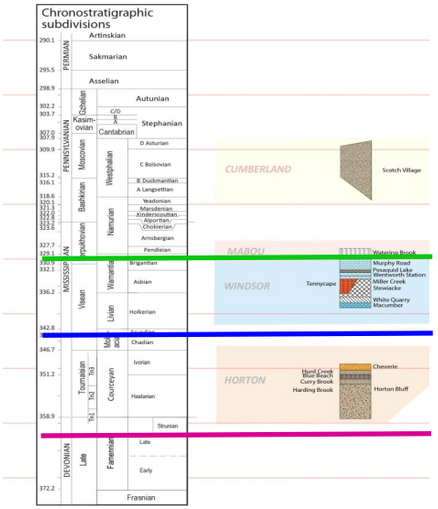


Stratigraphic Column of Windsor Basin (Waldron, 2017)



Uninterpreted Composite Line 1 (CON02-WIND-04 & NS00-WIND-01)

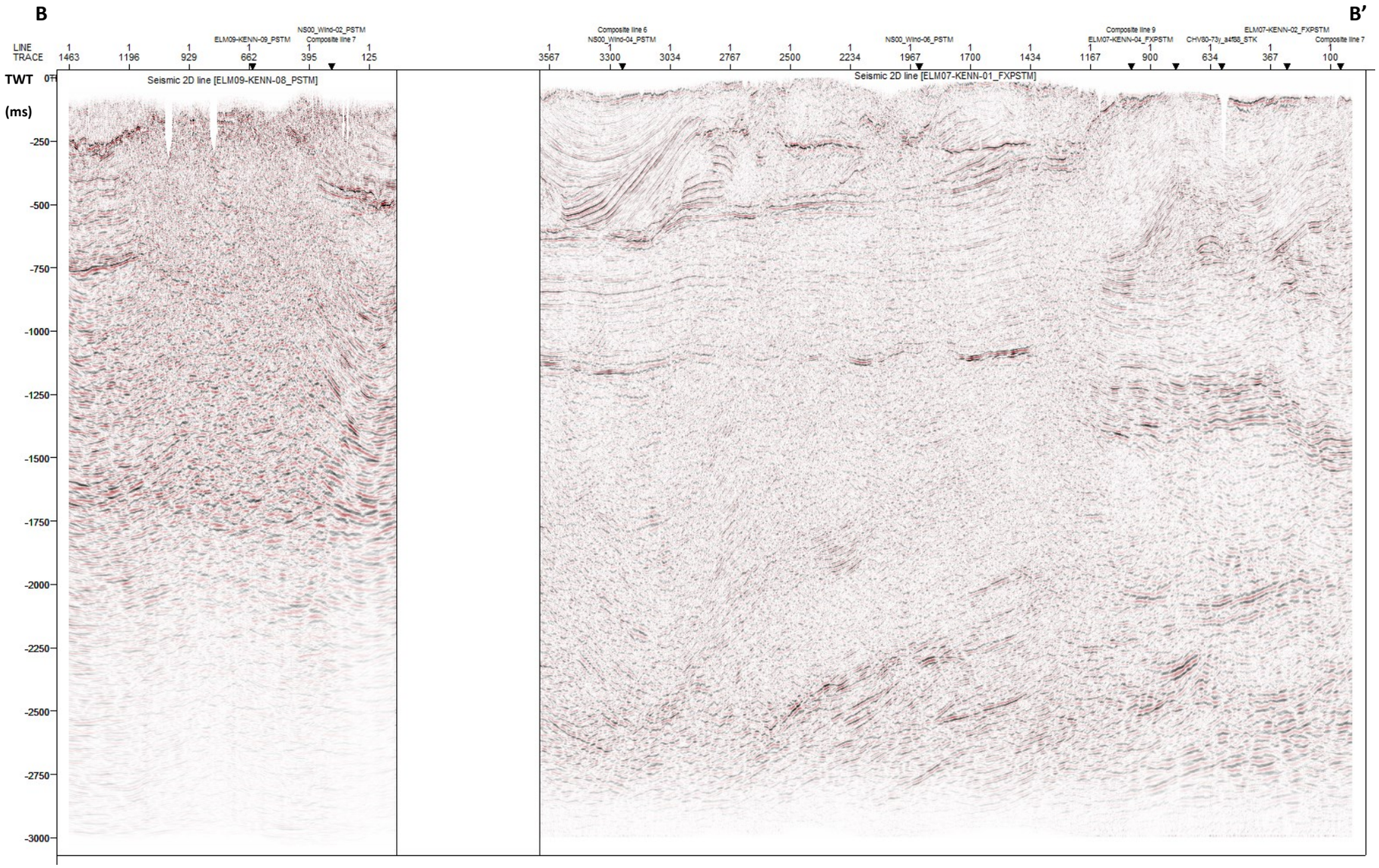




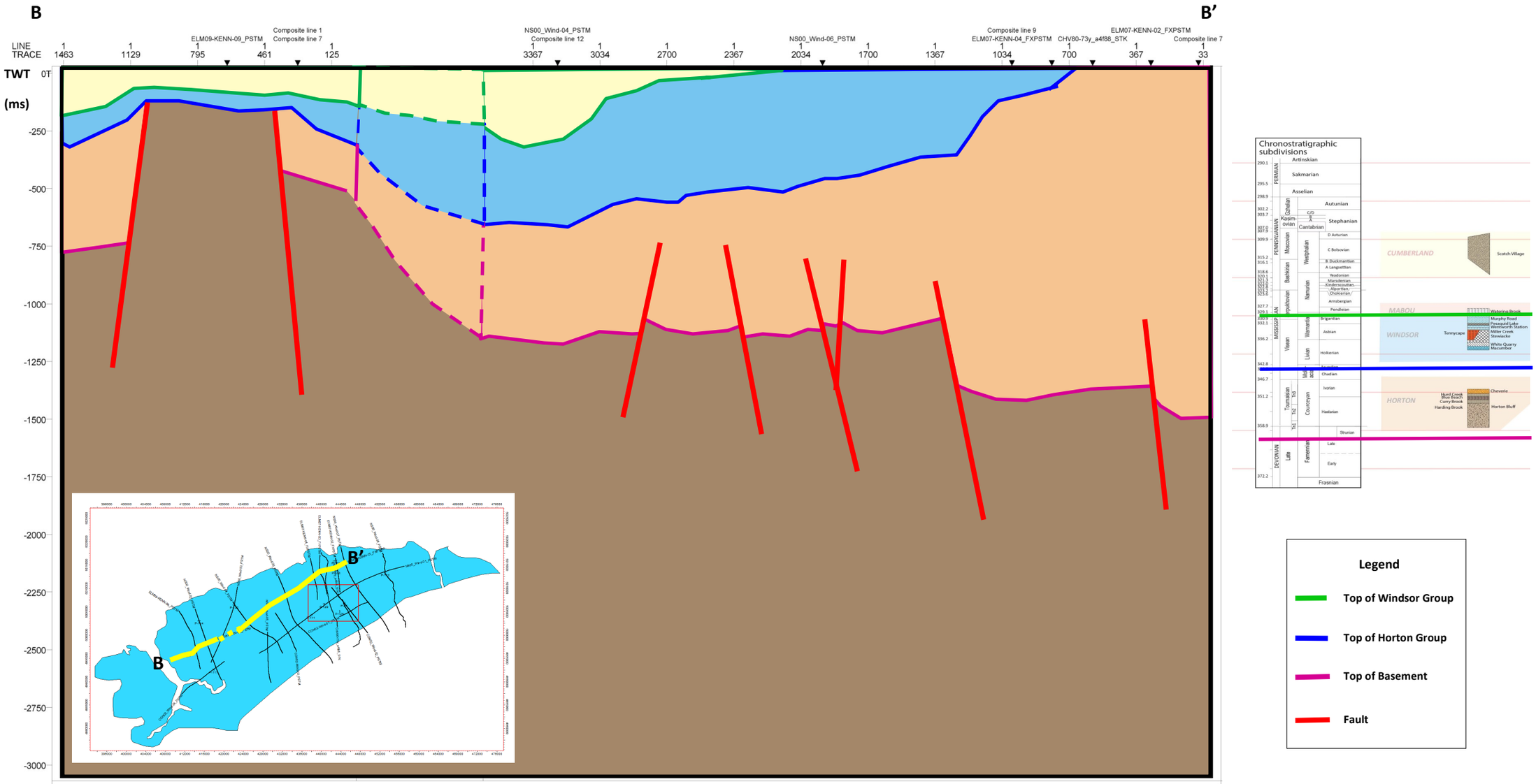
Legend

- Top of Windsor Group
- Top of Horton Group
- Top of Basement
- Fault

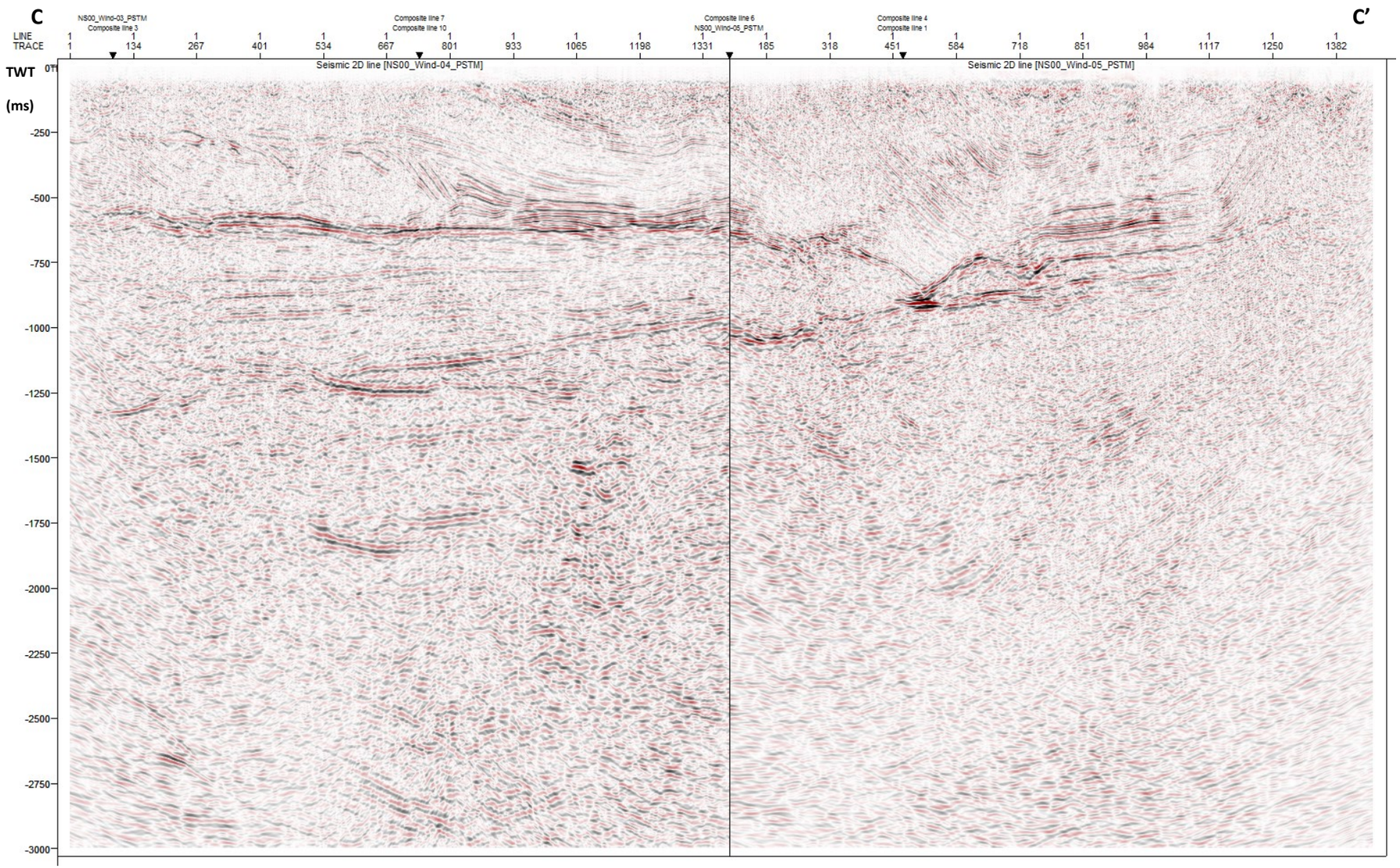
Composite Line 1 contains two 2D seismic lines (CON02-WIND-04 & NS00-WIND-01) and one jumper (dash line area). This composite line presents the thickness trend in the center area of the Windsor Basin from southwest to northeast (A-A'). The whole stratigraphic package of the Windsor Basin was observed including Basement, Horton Group, Windsor Group and Cumberland Group. The thickness of Horton Group was gradually increasing to northeast. Two depositional center (minibasins) were filled by Scotch Village Formation of Cumberland Group (NSDOE, 2016).



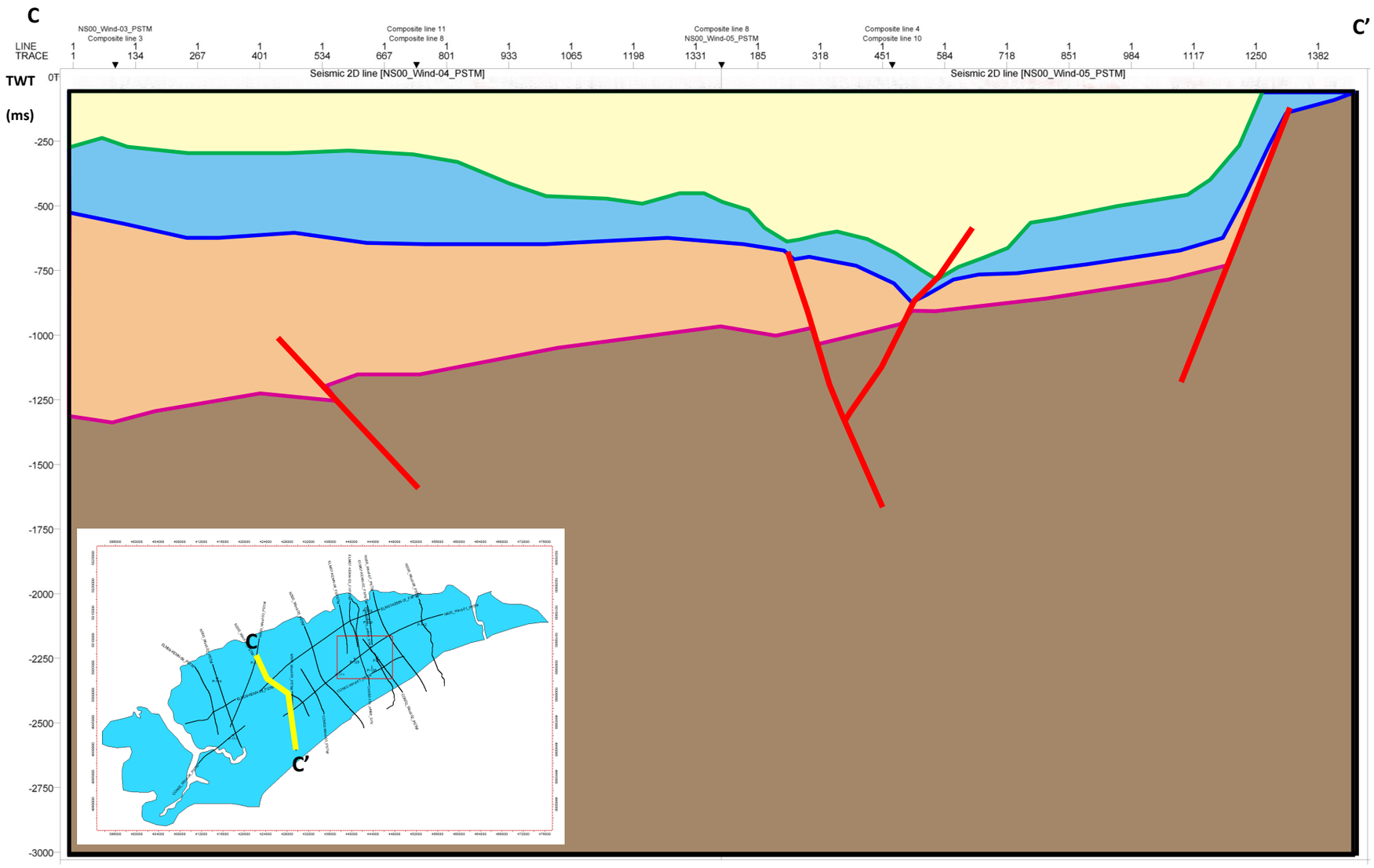
Uninterpreted Composite Line 2 (ELM09-KENN-08 & ELM07-KENN-01)

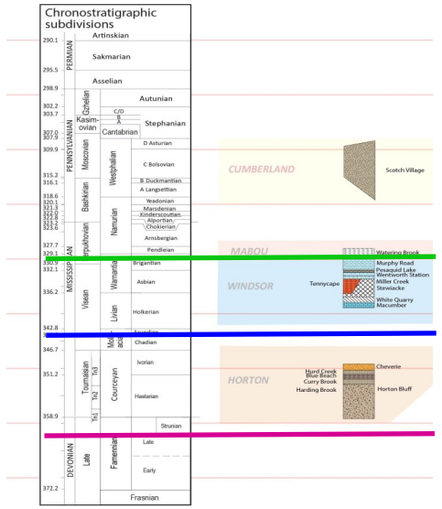


Composite Line 2 contains two 2D seismic lines (ELM09-KENN-08 & ELM07-KENN-01) and one jumper (dash line area). This composite line shows the basin geometry at the north area of basin from southwest to northeast (B-B'). There is a basement high located at the south end of seismic line ELM09-KENN-08 ; The Horton Group became thicker to northeast where the succession of Horton Group was largely exposed at the surface. Evaporate of Lower Windsor Group was locally highly disrupted. The Succession of Cumberland Group were locally deposited at the minbasins result from the evaporate withdrawal. This composite line clearly show the thickness of Horton Group was dramatically changed from southwest to northeast and less deformed than the overlying Windsor Group (NSDOE, 2016).



Uninterpreted composite Line 3 (NS00-WIND-04 & NS00-WIND-05)

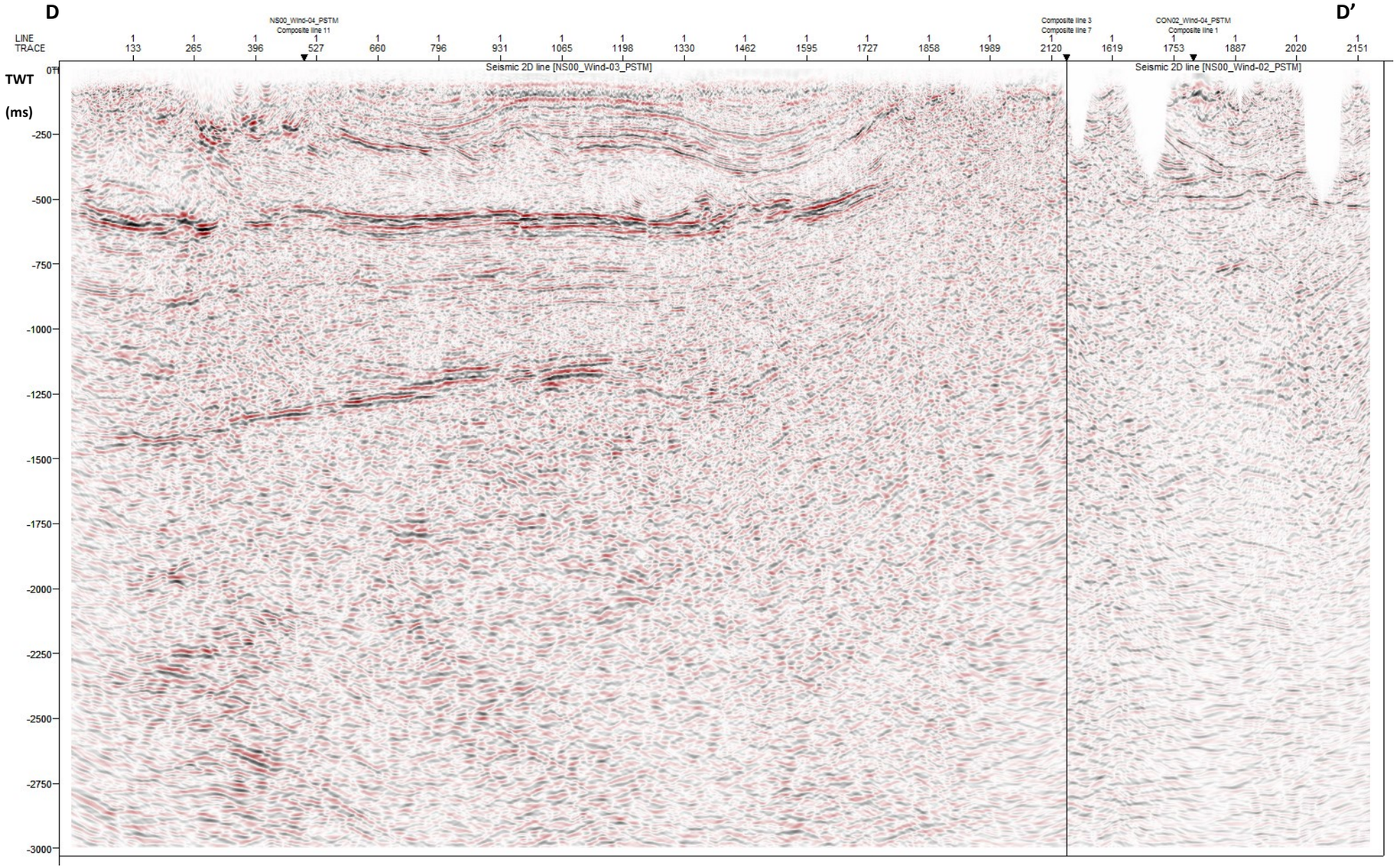




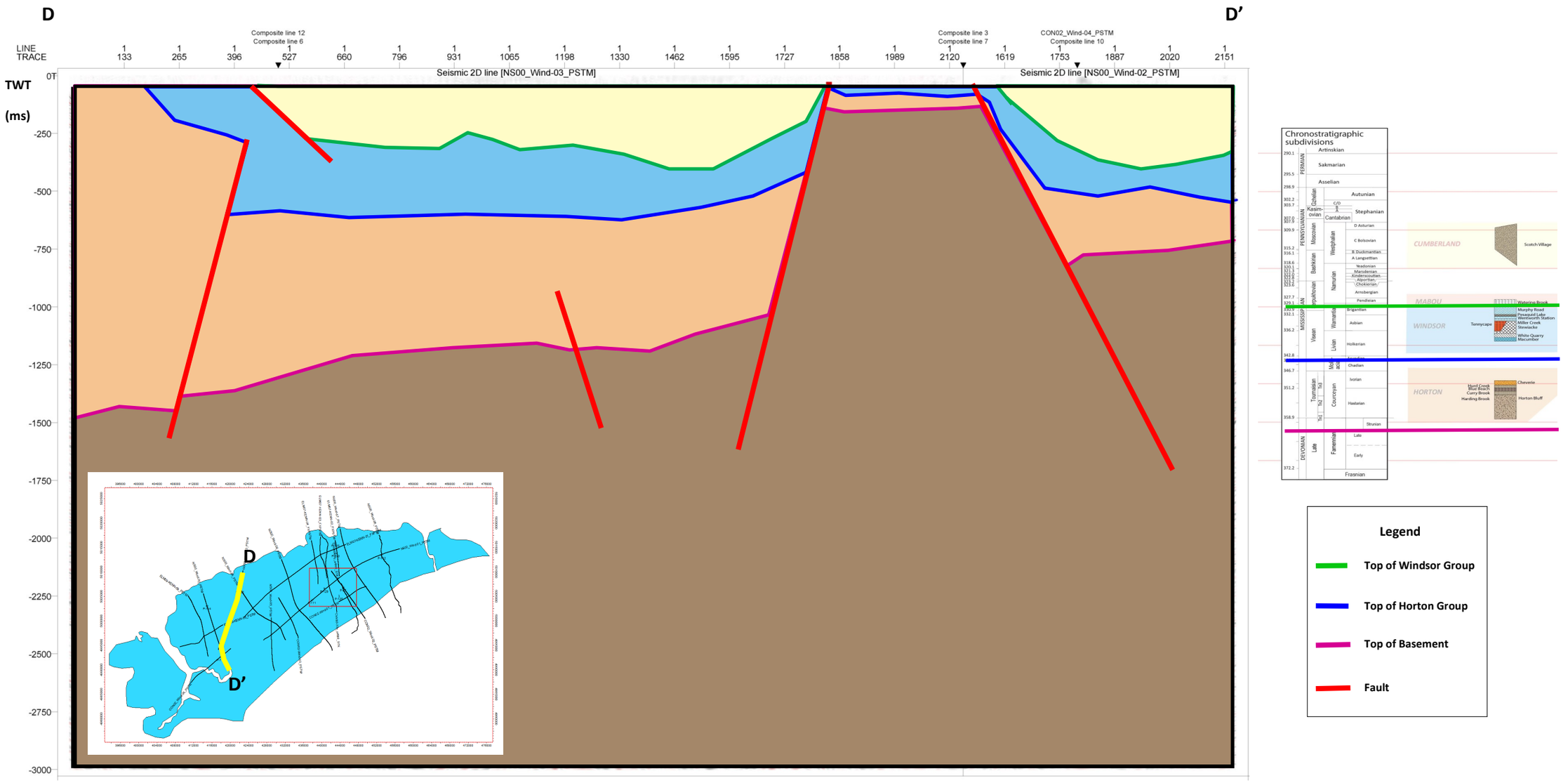
Legend

- Top of Windsor Group
- Top of Horton Group
- Top of Basement
- Fault

Composite Line 3 contains two 2D seismic lines (NS00-WIND-04 & NS00-WIND-05). This composite line shows the typical stratigraphic succession of the Windsor Basin from south to north (C'-C). The Horton Group succession pinched out at the south side of the basin and became thicker northward. The succession of Windsor Group was locally deformed. The thick succession of Cumberland Group was locally deposited in the minbasin which was created by the evaporate mobility and collapse (NSDOE, 2016).



Uninterpreted composite Line 4 (NS00-WIND-03 & NS00-WIND-02)



Composite Line 4 contains two 2D seismic lines (NS00-WIND-03 & NS00-WIND-02). A basement high was observed at the southwest corner of the Windsor Basin. This composite line shows the whole stratigraphic succession of the Windsor Basin including Basement, Horton Group, Windsor Group and Cumberland Group deposited on the both side of the basement high. The succession of the Horton Group became much thicker northward (from D' to D) (NSDOE, 2016).