

Yorkshire composite Rock-Eval chemostratigraphic logs

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The figure displays a composite of Rock-Eval geochemical logs and stratigraphic columns for the Yorkshire region. The vertical axis represents Bed Number (0 to 52) and depth in meters (0 to 52). The horizontal axes represent various geochemical parameters:

- T_{max} (°C): 420 to 450
- S_2 (mg HC): 0 to 80
- S_1 (mg HC): 0 to 10
- HI (mg HC g⁻¹ TOC): 0 to 600
- PI (mg HC): 0.05 to 0.20
- OI (mg CO₂ g⁻¹ TOC): 0 to 120

The stratigraphic columns on the left indicate the following members and subzones:

- Grey Shales Member:** *paltum*, *cleve.*, *tenui.*, *semicelatum*
- Mulgrave Shale Member:** *exaratum*
- Whitby Mudstone Formation:** *falciferum*
- Alum Shale Member:** *bifrons*, *commune*

Key stratigraphic features include the OAE (Oxygenation Age Event) indicated by a shaded region between beds 31 and 39, and the presence of Carbonate beds and Carbonate concretions. The logs show a general trend of increasing maturity (higher T_{max} , S_2 , and HI) with depth, with a notable peak in HI and PI around bed 35, corresponding to the OAE.

cleve. = *clevelandicum*
tenui. = *tenuicostatum*