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Late Jurassic Sedimentation in the Boreal-Tethyan Seaway: climate modelling, geochemistry, and petrography of the Kimmeridge Clay Formation

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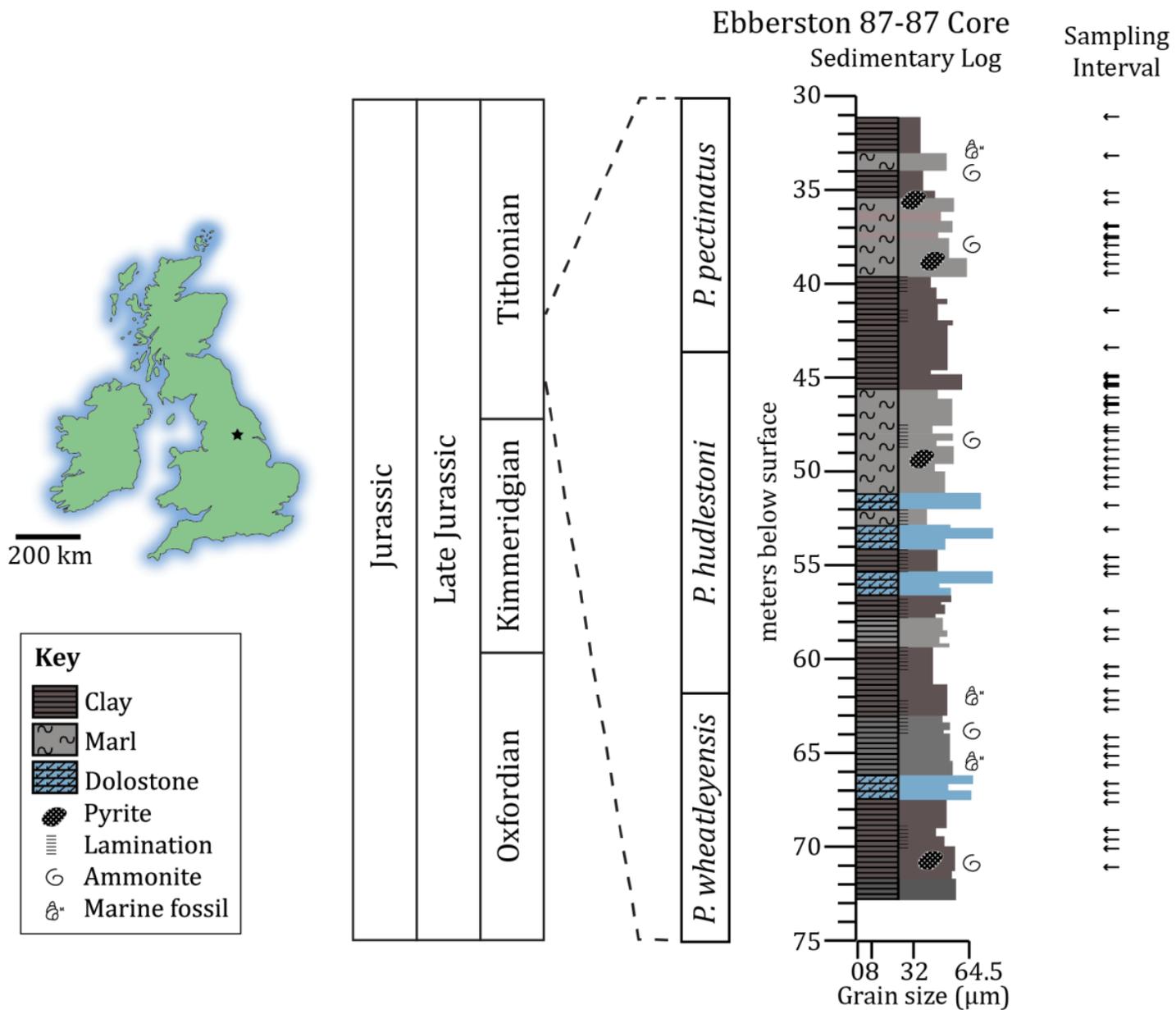
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Ebberston 87 SEM

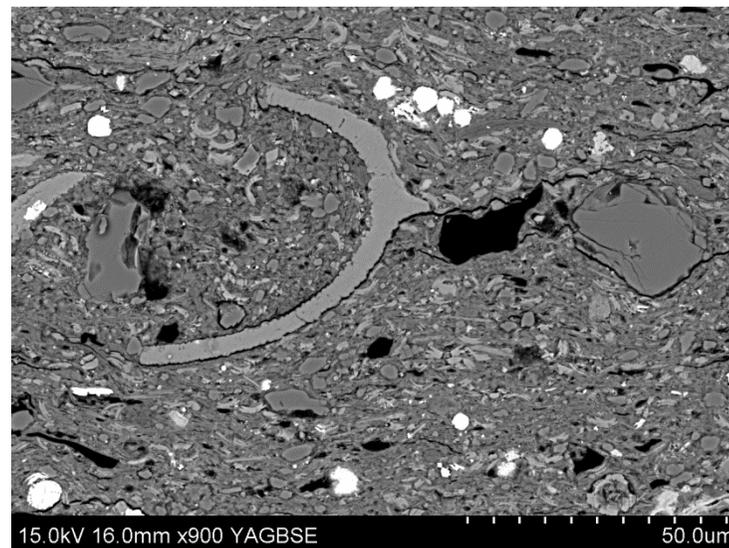
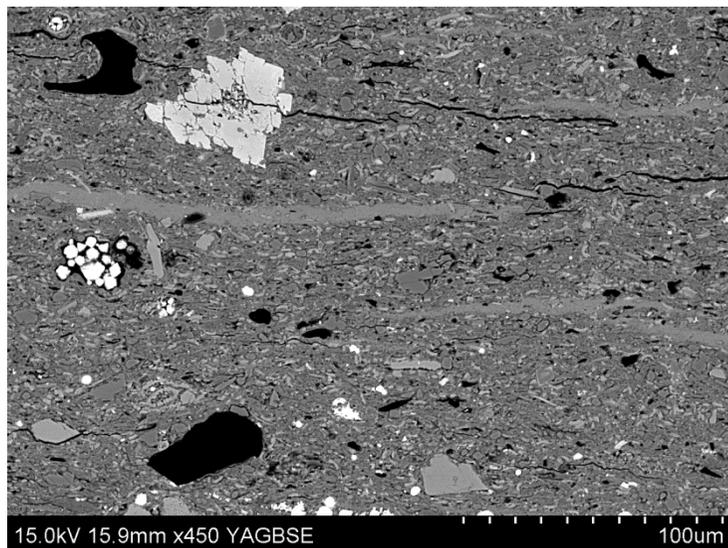
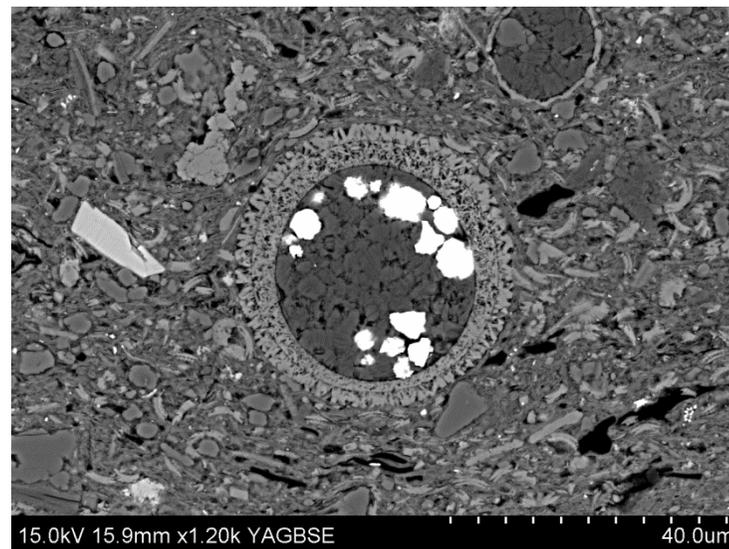
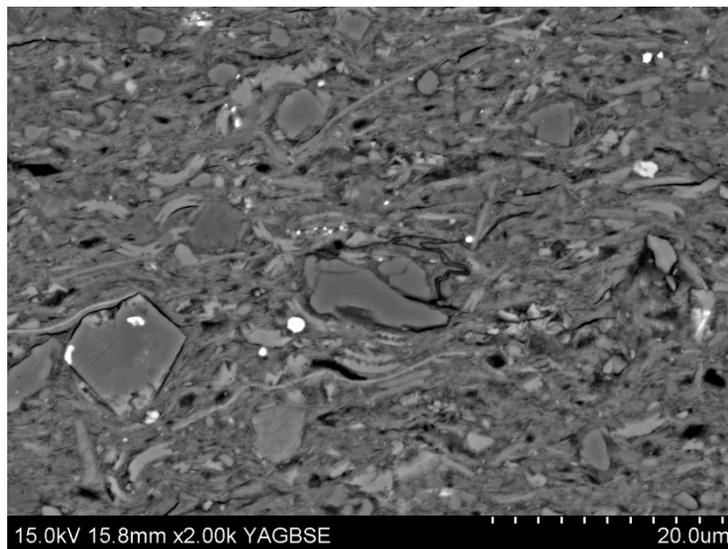
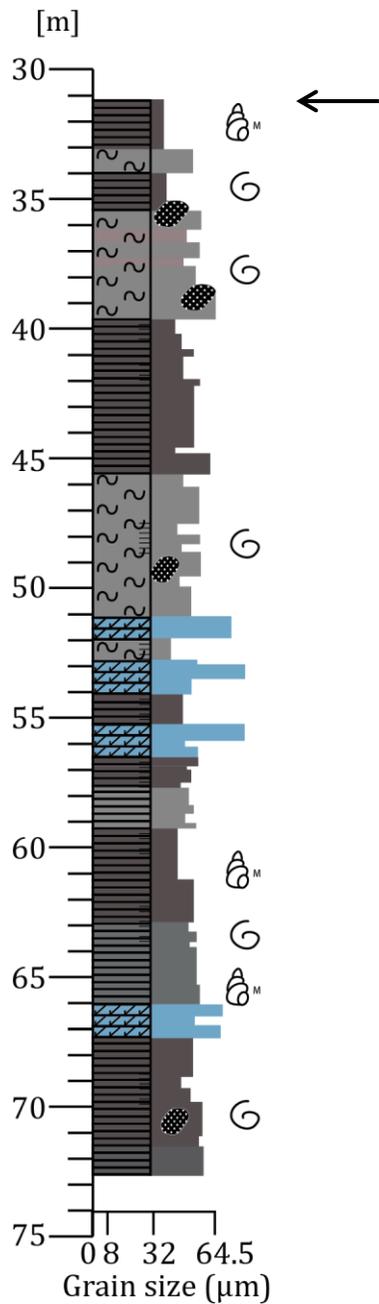


Location map, stratigraphic column and litholog of the Eberston 87 core. Arrows indicate sampling interval for thin sections.

Facies descriptions

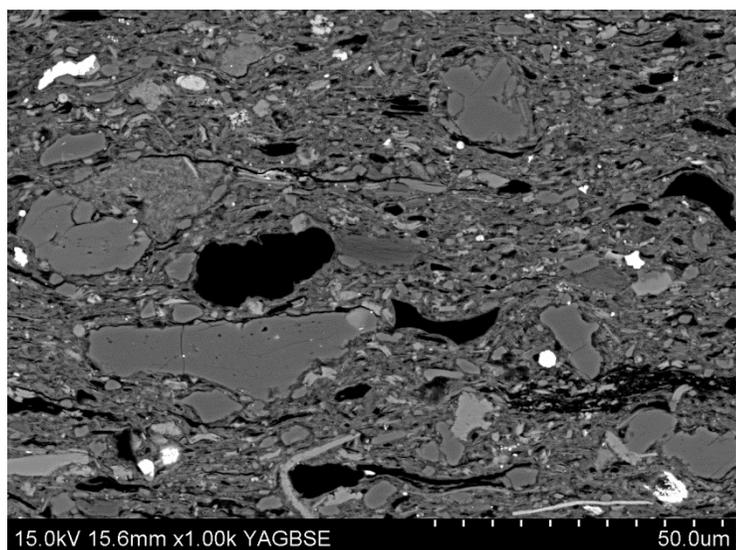
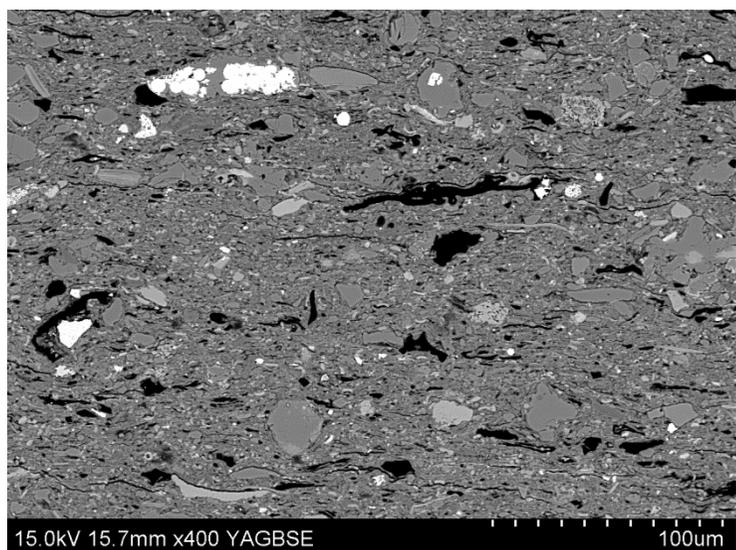
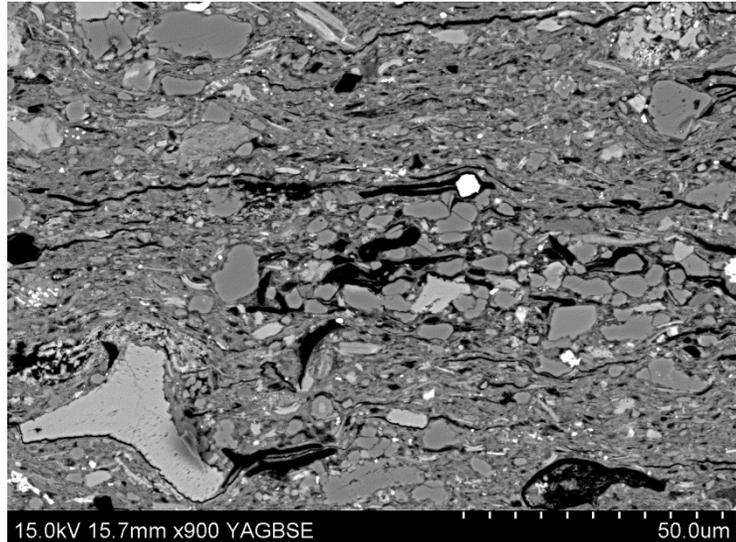
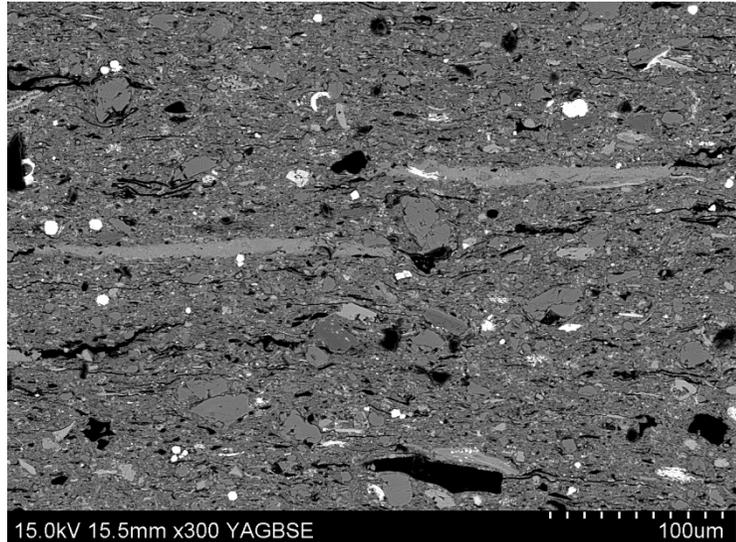
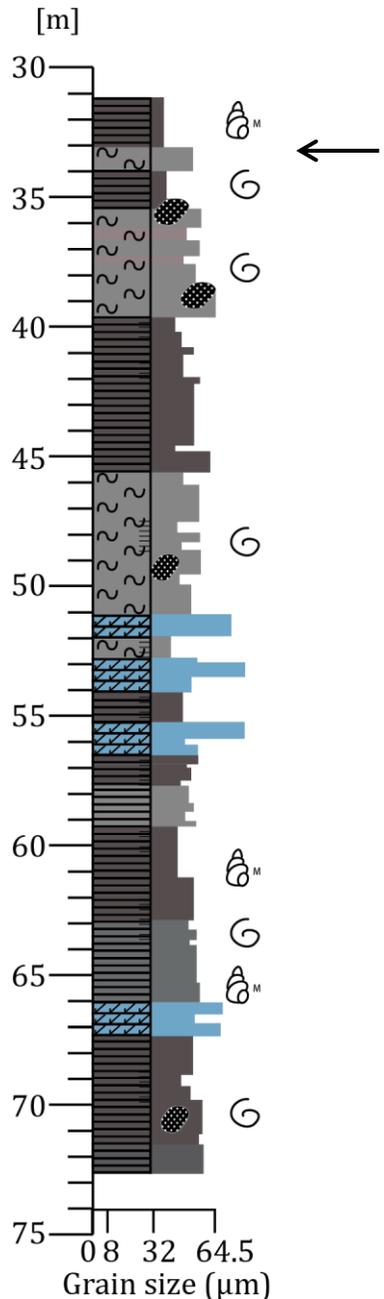
No.	Name	Brief Description	Samples
1	Clastic-detritus-rich medium mudstone	Heavily bioturbated, argillaceous matrix with abundant medium to coarse mud sized detrital clasts in it. Calcareous nanofossils are present and of ten infilled with authigenic kaolinite.	31.07 , 33.17 , 35.17 , 37.60 , 41.50 , 47.80 , 48.00 , 49.00, 49.50, 50.00, 50.50, 52.00 , 57.70 , 59.20, 60.70 , 63.00 , 64.50 , 65.00 , 67.00 , 71.50
2	Organic material and calcareous pellet-rich, laminated mudstone	Lenticular, discontinuous wavy laminated, algal maceral dominated mudstone. Calcareous faecal pellets float within an argillaceous and carbonaceous matrix.	36.92 , 37.00 , 37.50, 38.50, 45.44 , 45.50 , 46.20 , 46.50 , 66.00 , 67.00 , 68.00
3	Coccolith-dominated medium mudstone	Fine to medium normally-graded calcareous mudstone beds. It is dominated by coccolith plates and coccolith-rich faecal pellets. Matrix comprises of coccoliths, clay minerals and quartz grains.	35.67 , 38.00 , 39.00 , 45.00 , 45.59 , 46.80, 47.00 , 65.50
4	Agglutinated foraminifera bearing, medium to coarse, carbonaceous mudstone	Heavily bioturbated with no remaining sedimentary structures. Argillaceous and carbonaceous matrix with detrital components and abundant agglutinated foraminifera.	35.67 , 43.50 , 46.60
5	Biogenic detritus dominated, fine to medium mudstone	Disarticulated shell fragments dominate this facies. Shells and very abundant fine to coarse mud-sized quartz grains are set within an argillaceous matrix.	70.00 , 70.50
6	Carbonate cemented, coarse grained mudstone	Medium to coarse, angular, diagenetic carbonate grain-dominated sediment with an argillaceous matrix.	51.00 , 53.30, 55.70 , 67.50

EB 31.07 m



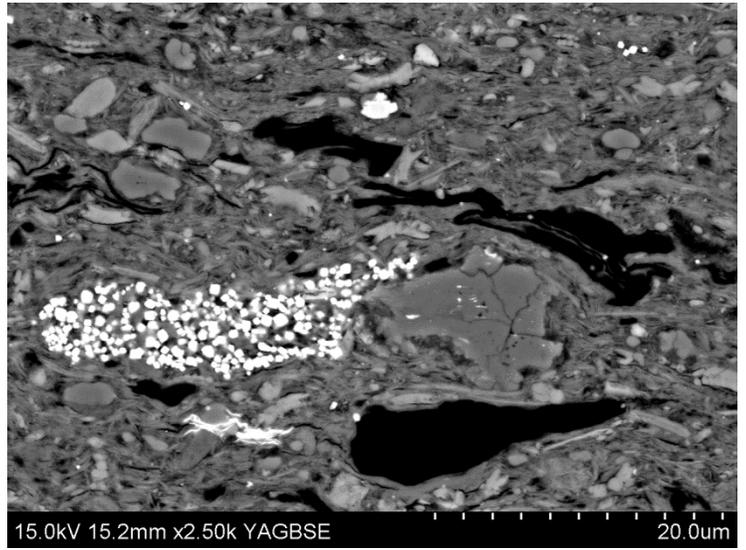
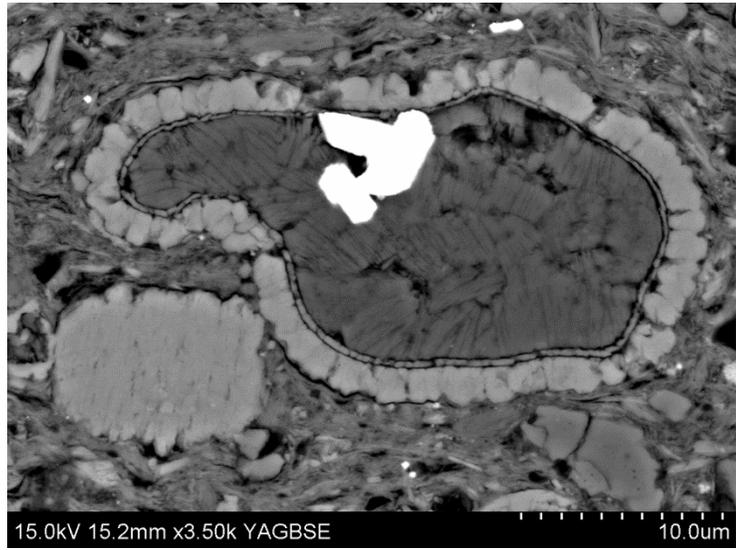
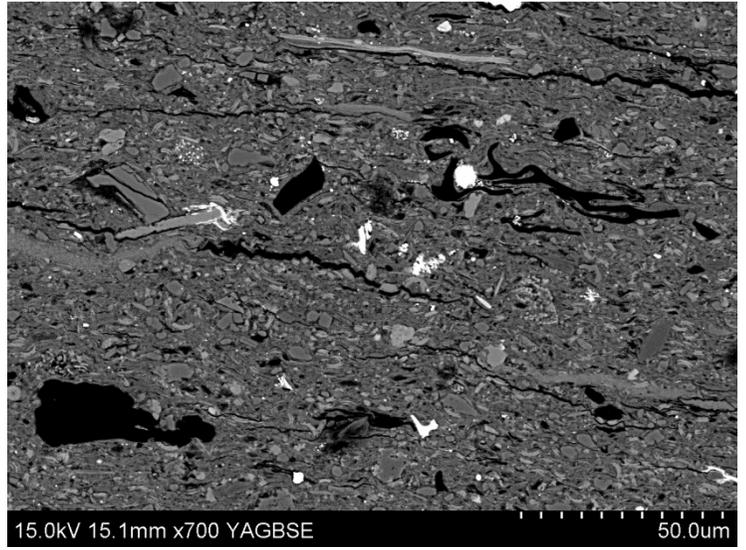
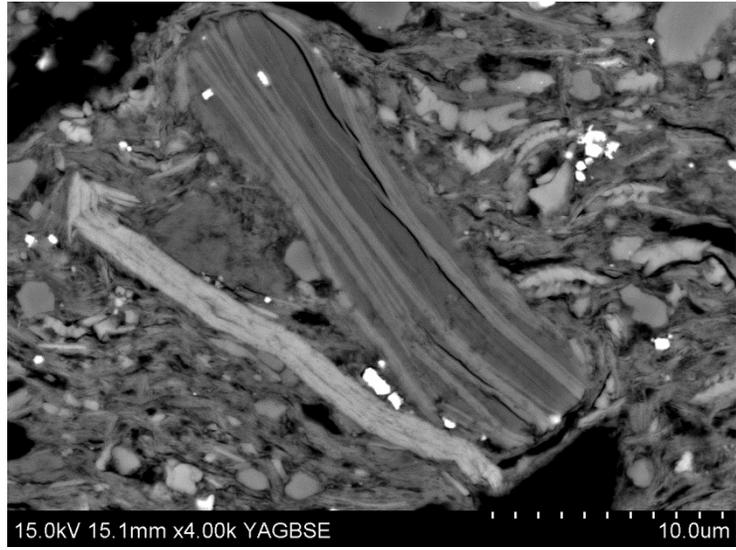
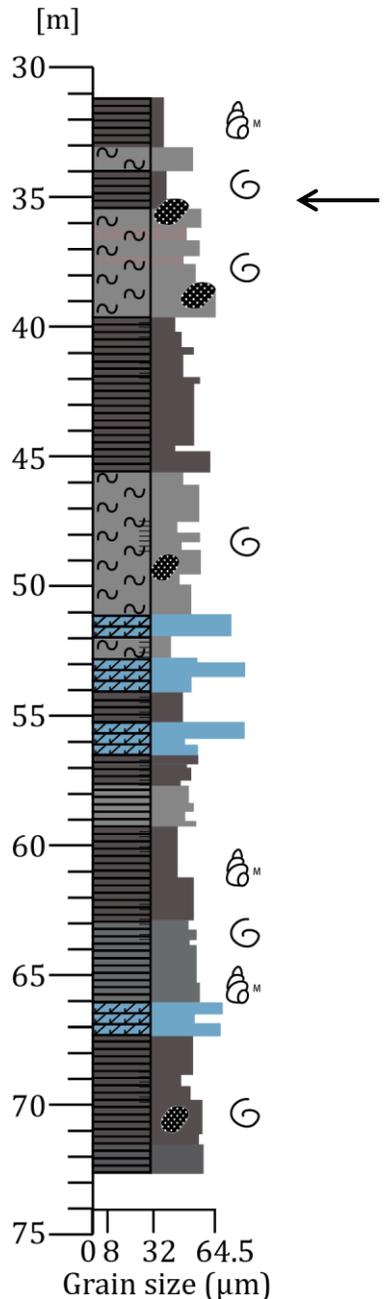
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EB 33.17 m



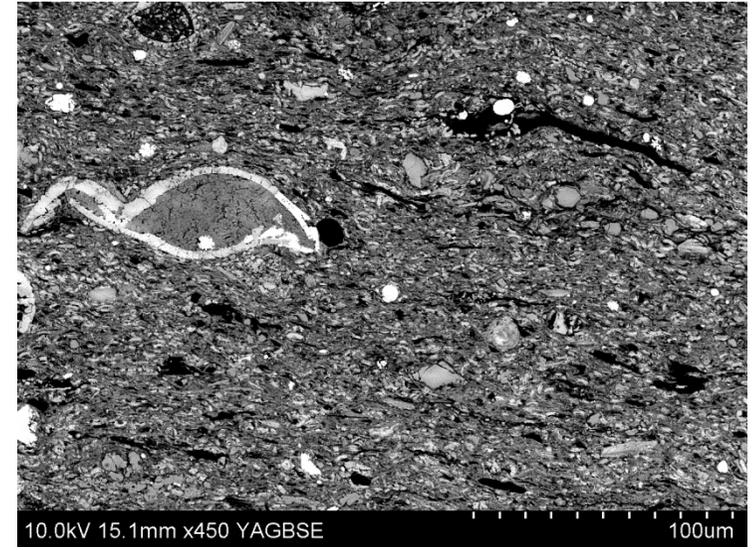
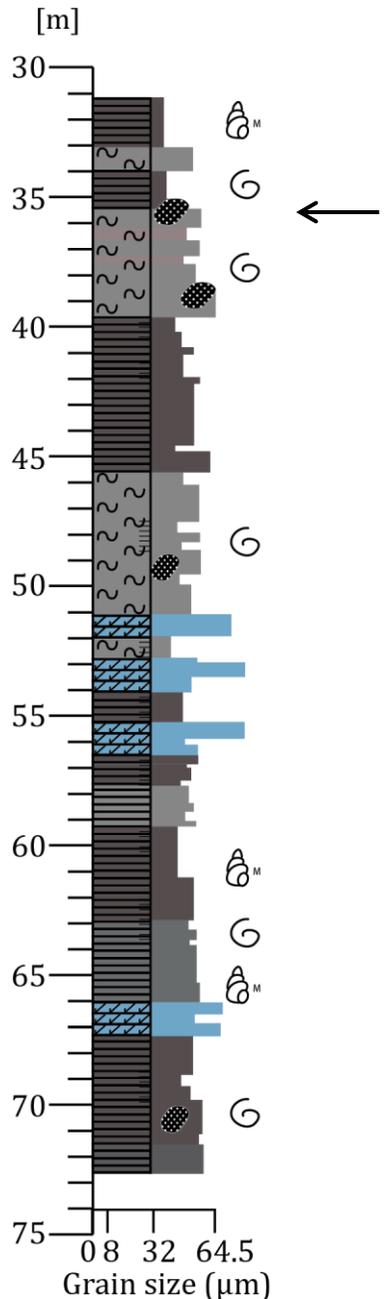
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EB 35.17 m



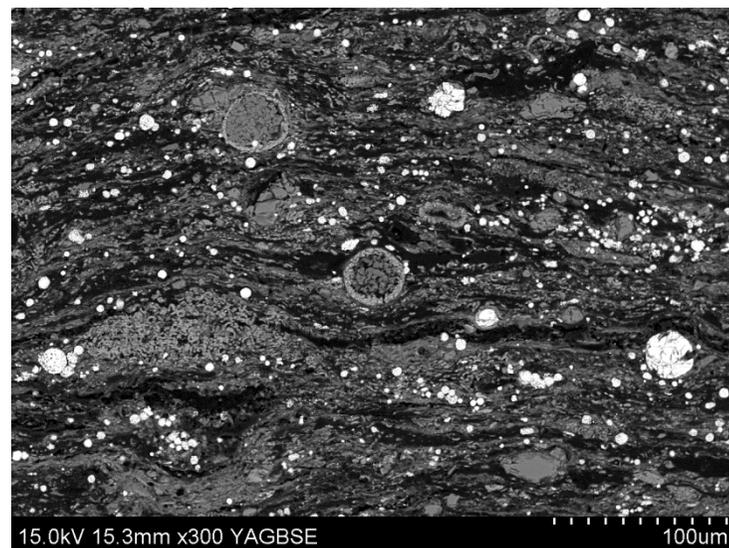
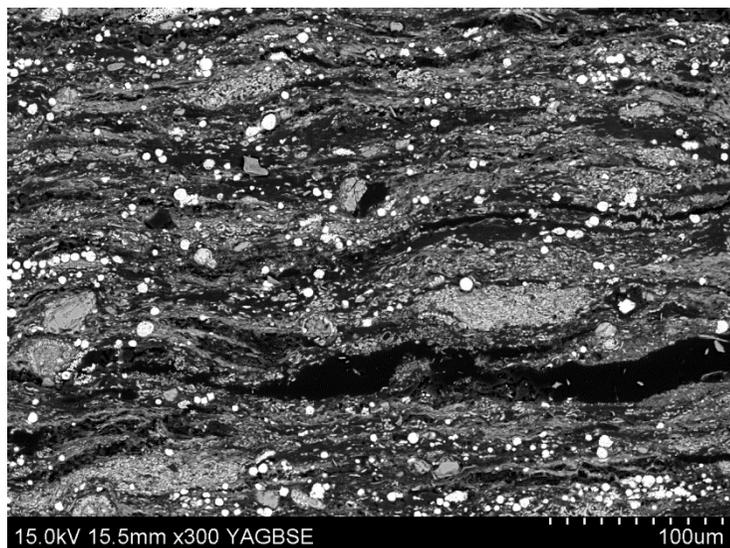
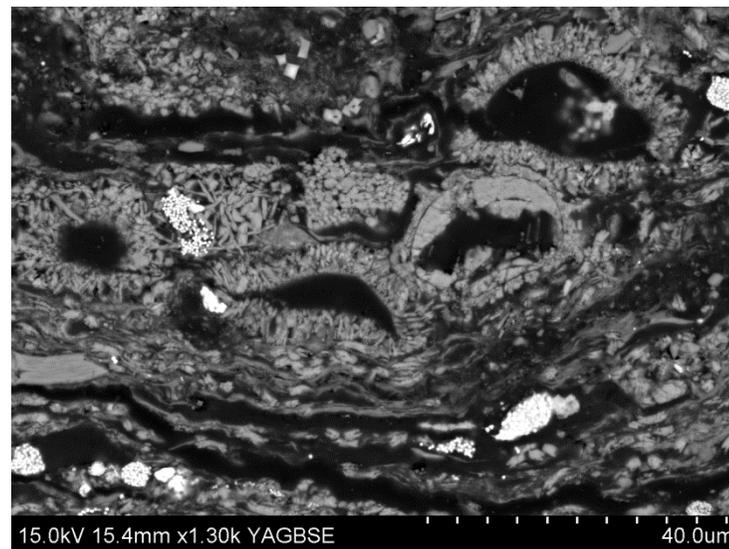
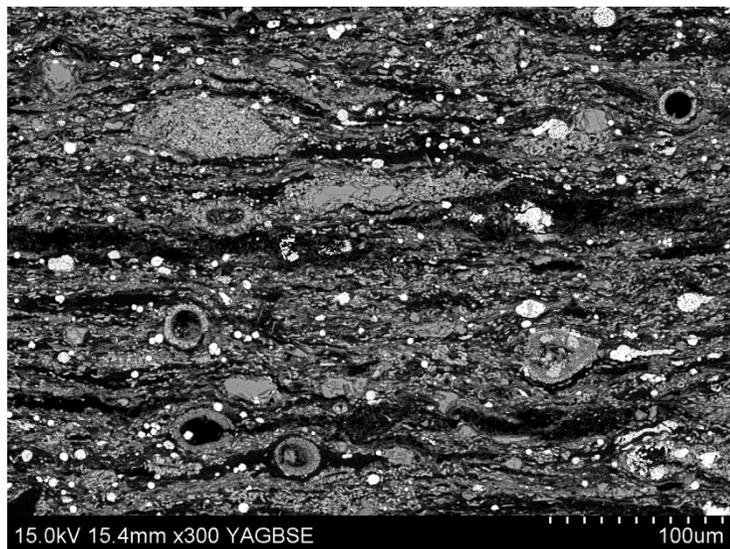
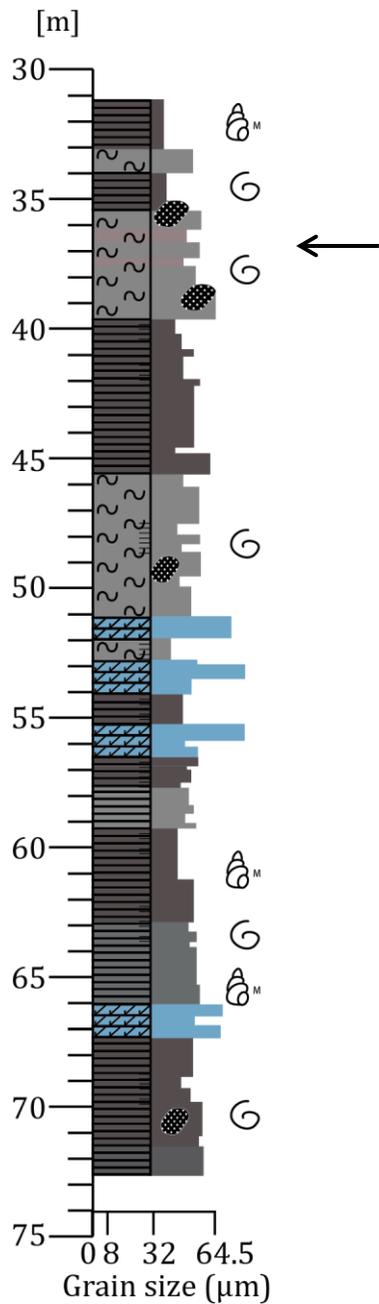
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EB 35.67 m



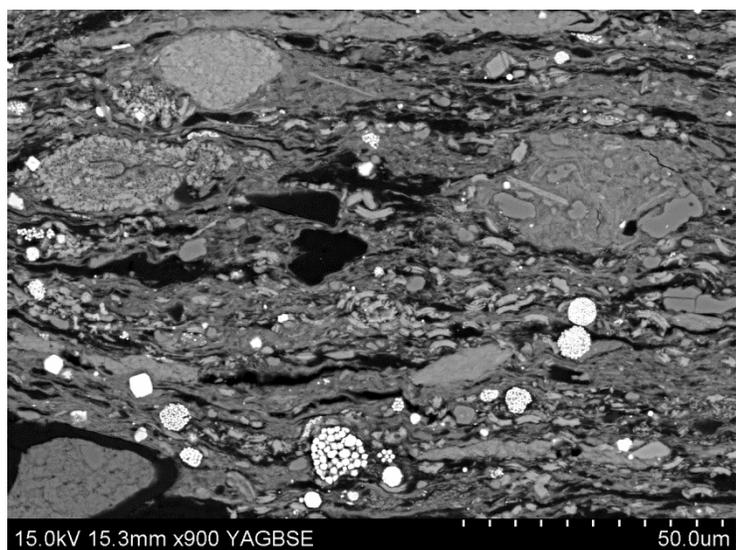
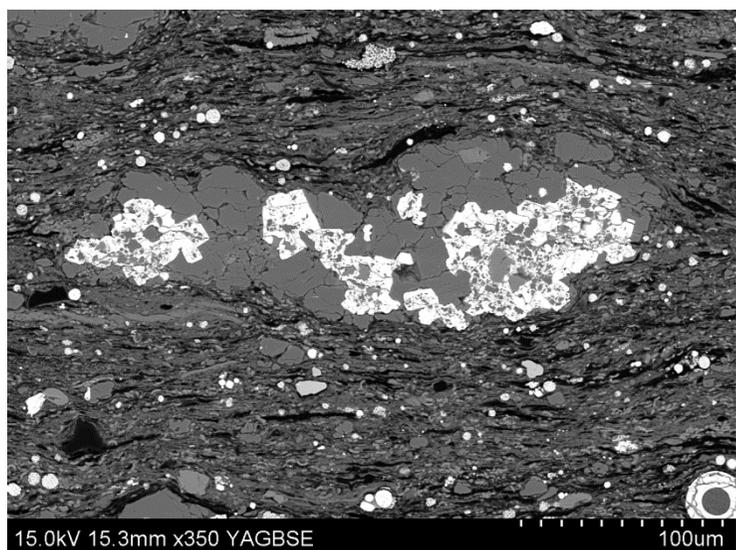
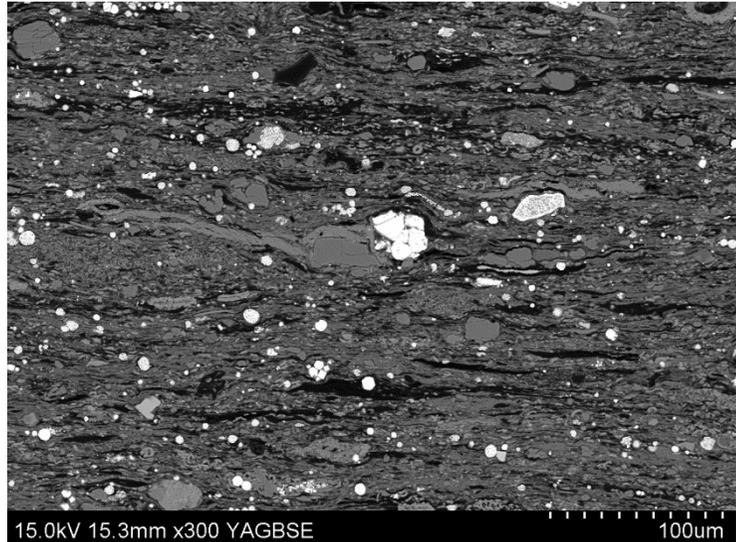
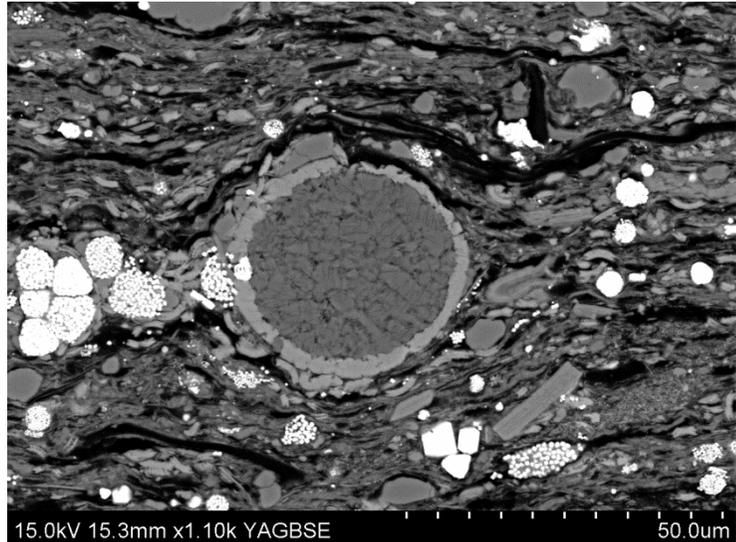
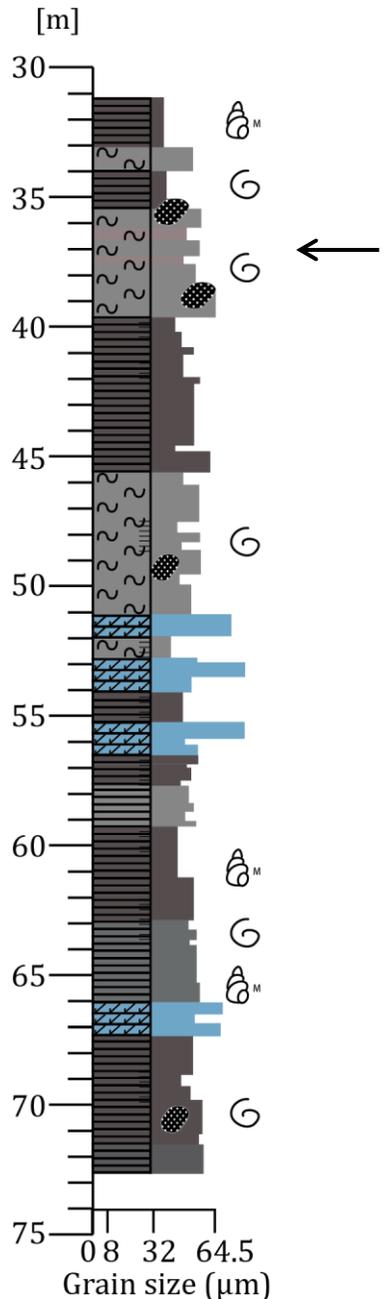
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EB 36.92 m



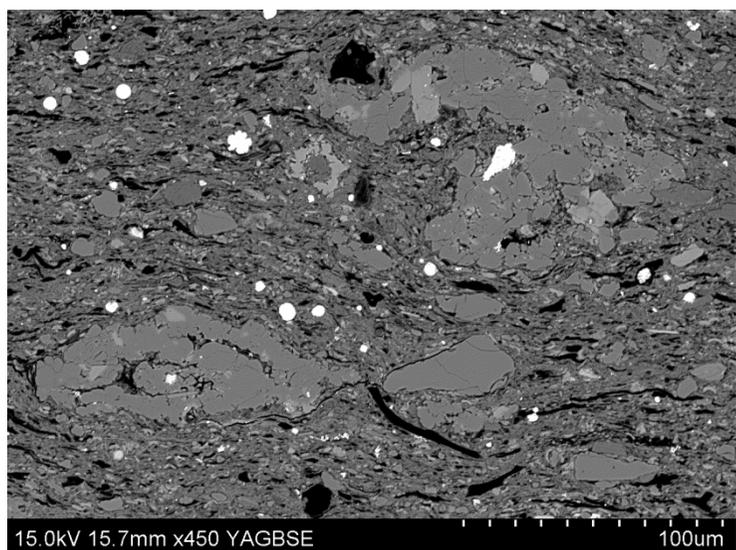
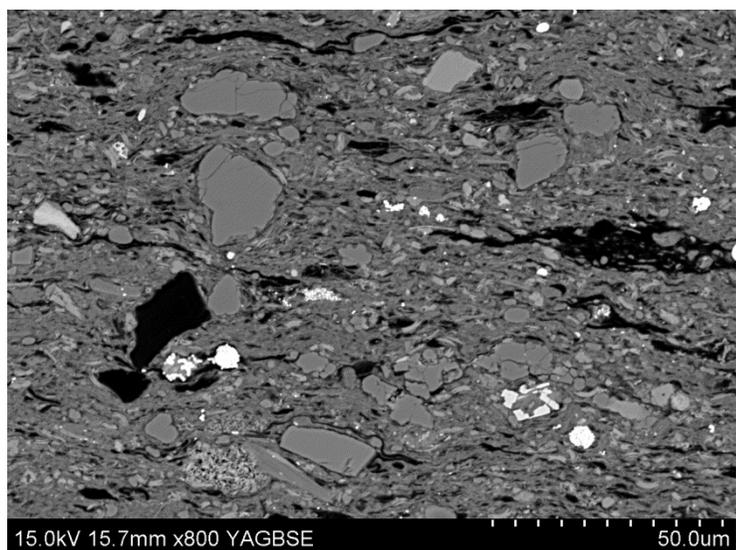
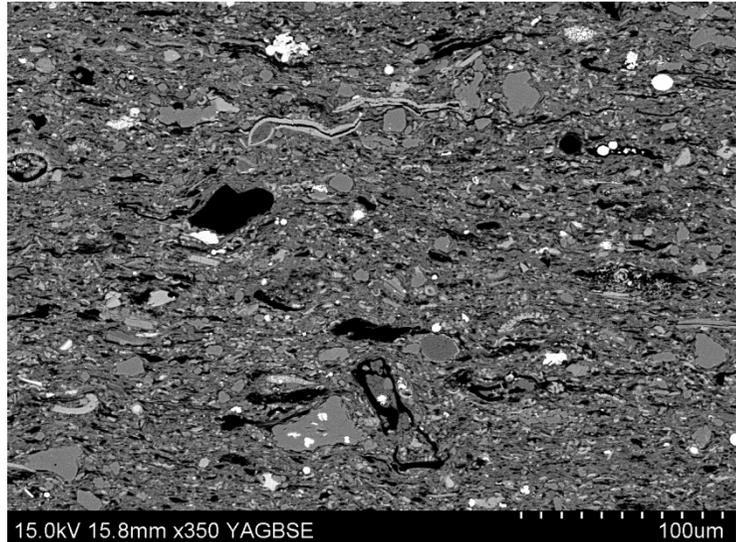
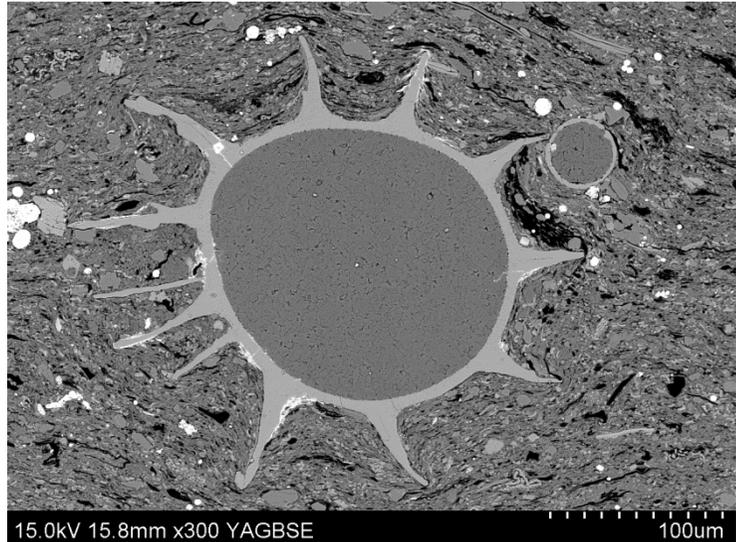
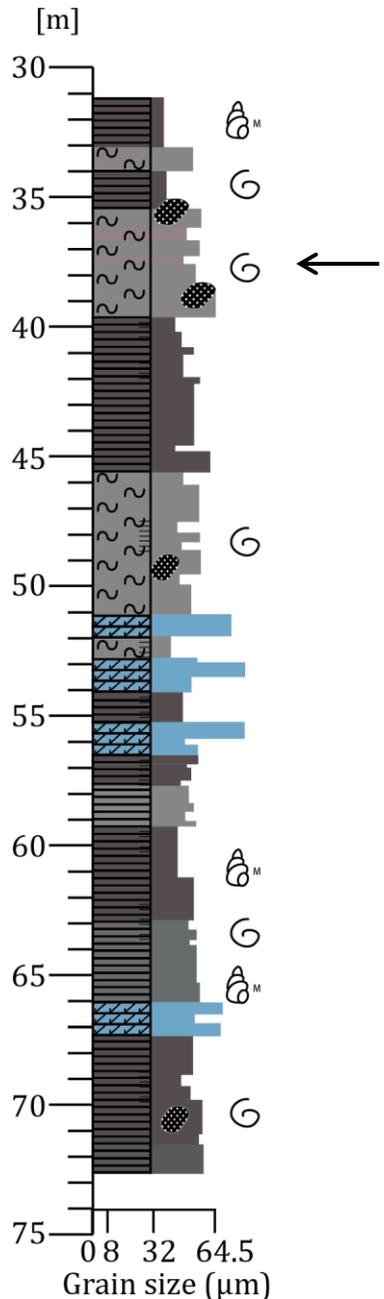
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EB 37.00 m



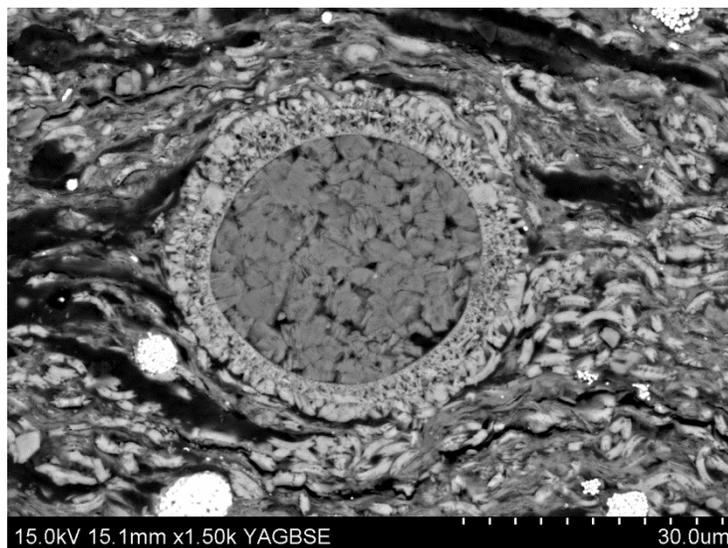
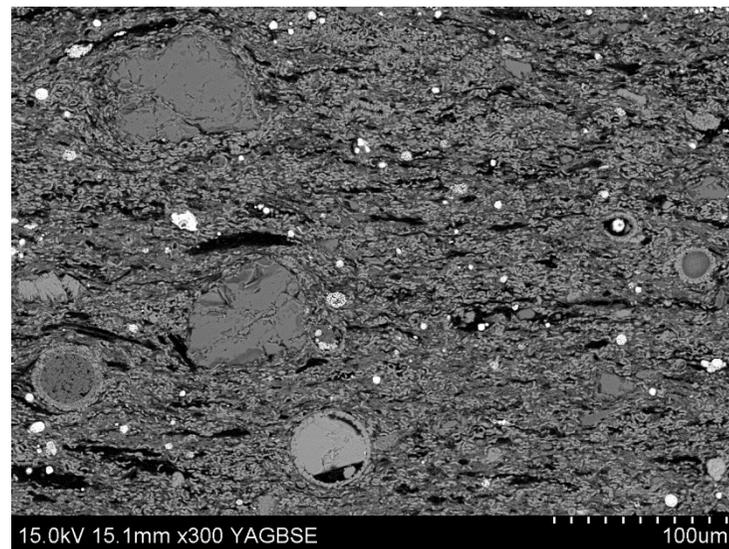
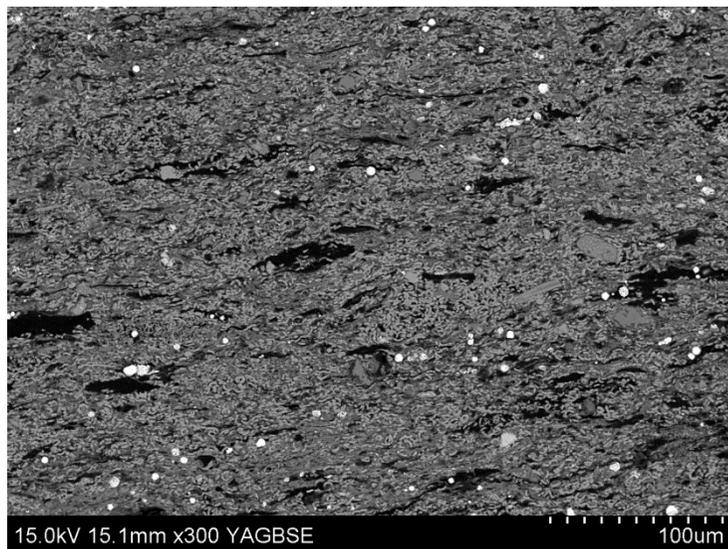
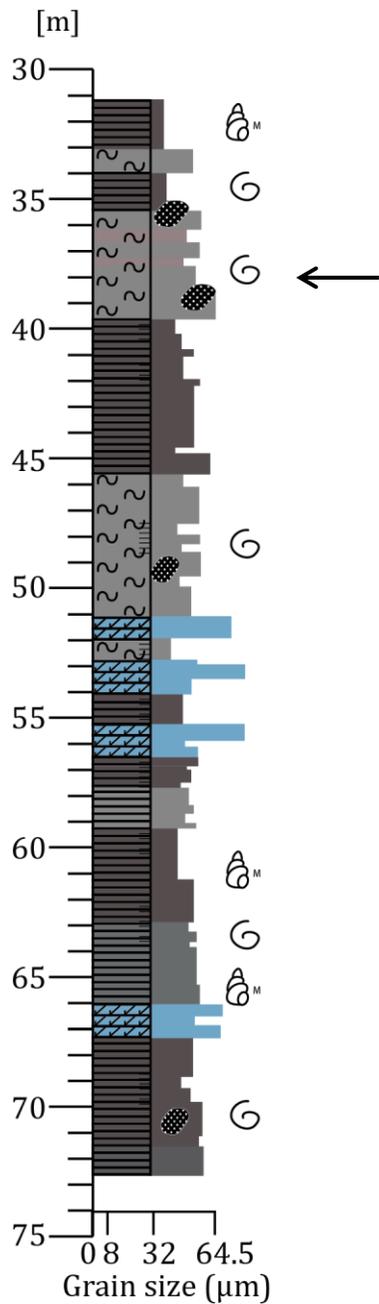
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EB 37.60 m



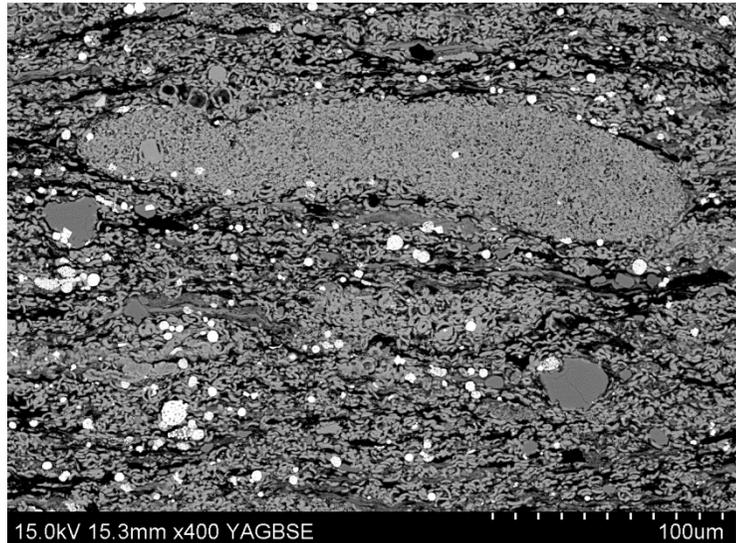
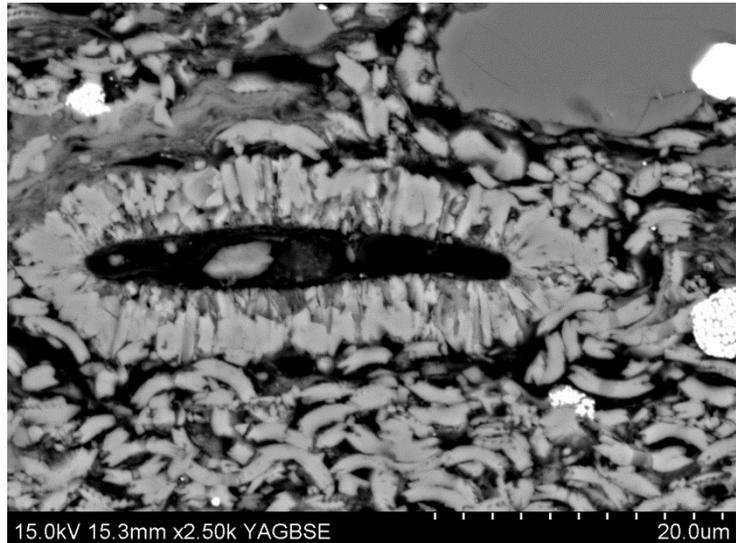
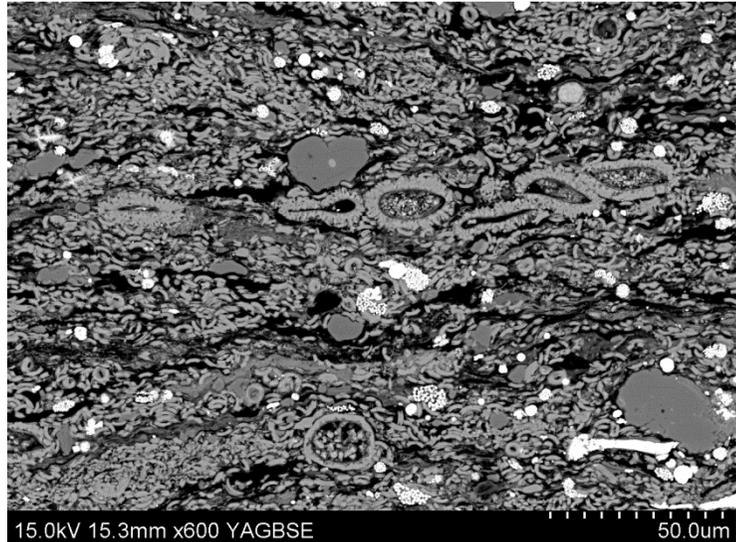
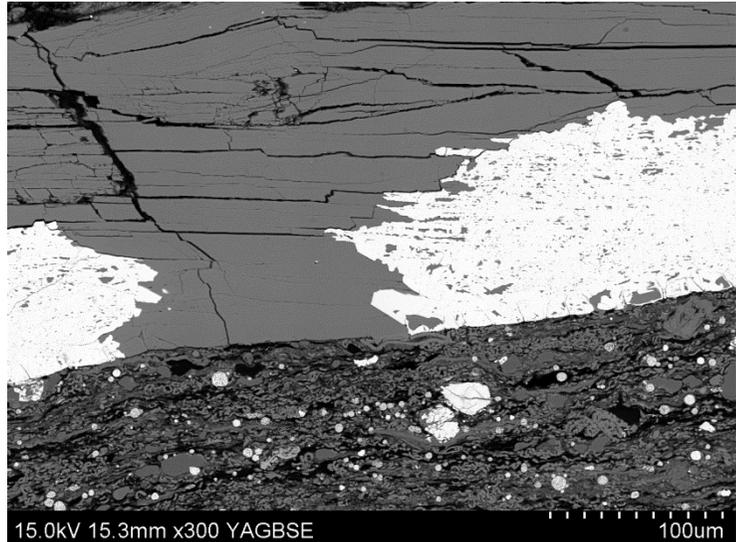
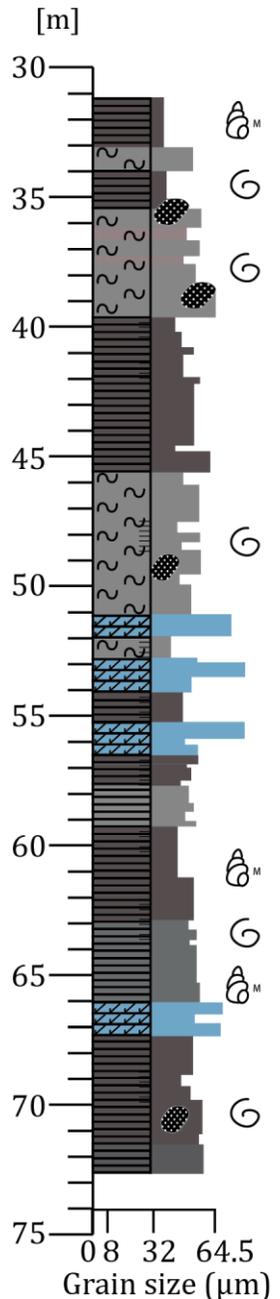
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EB 38.00 m



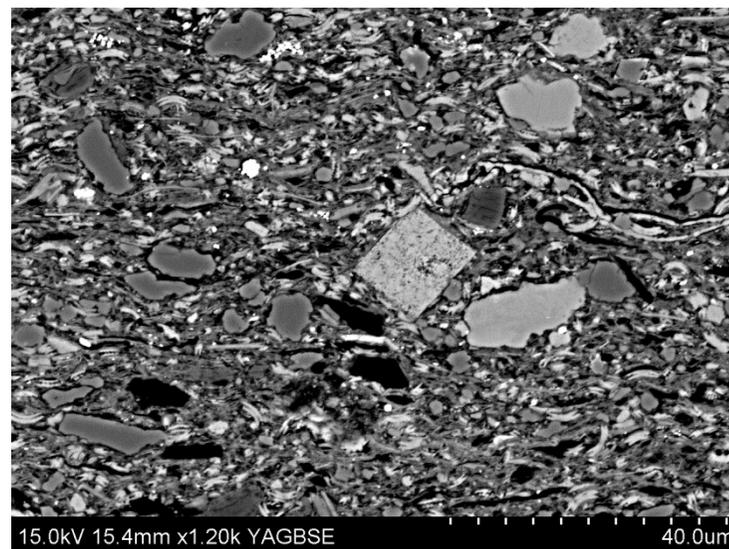
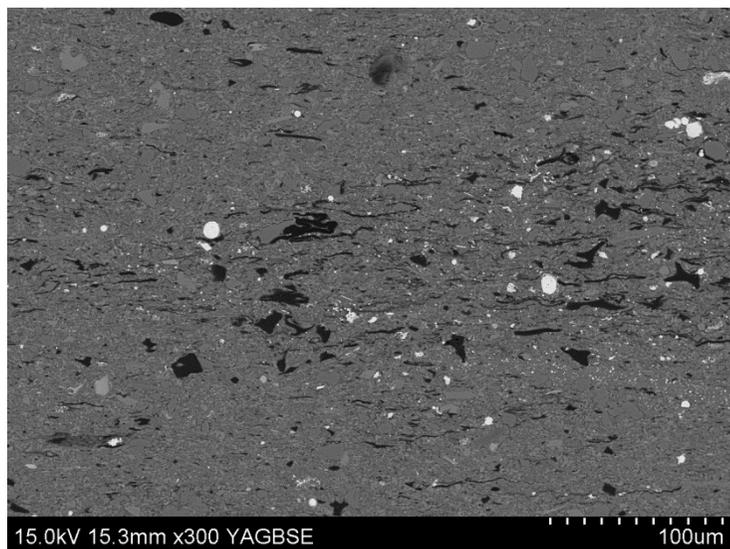
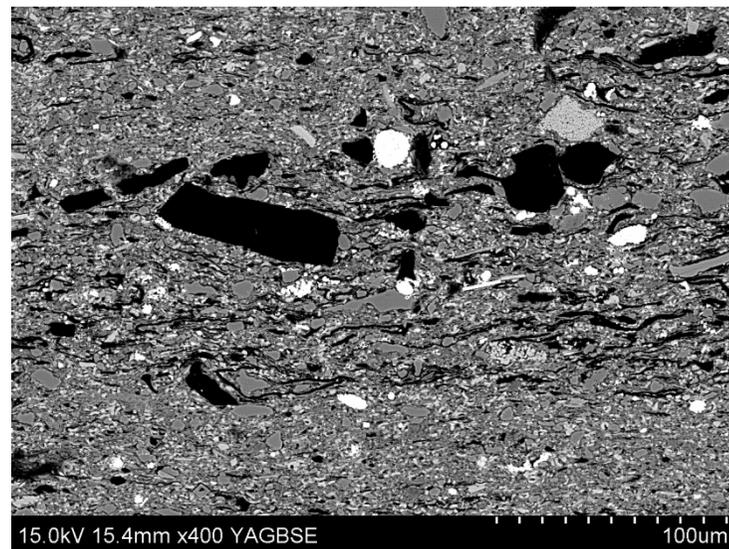
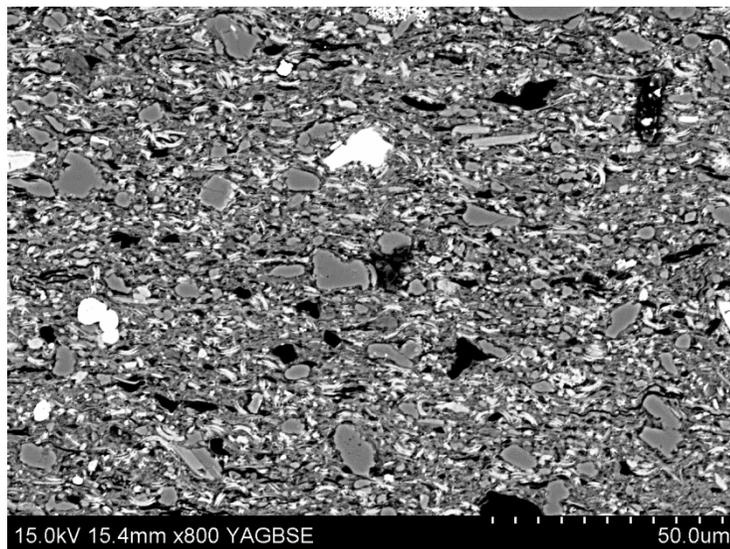
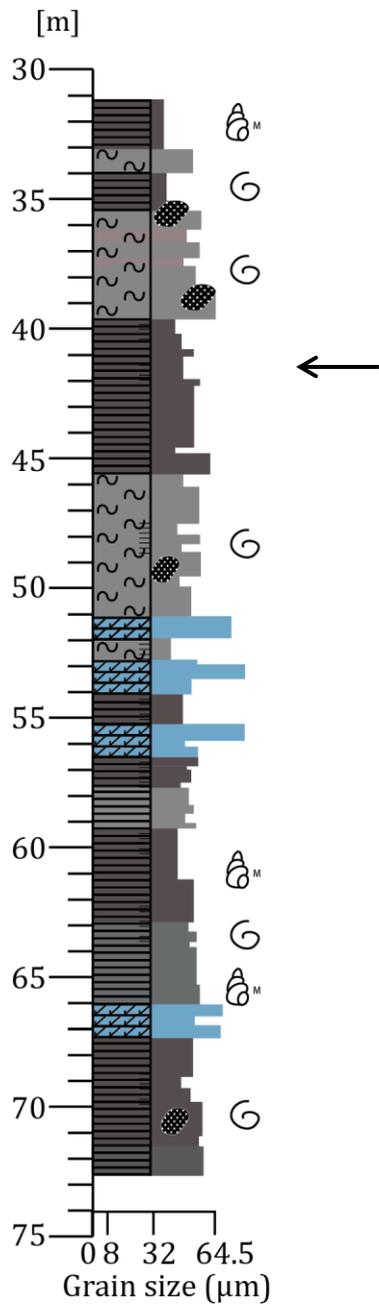
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EB 39.00 m



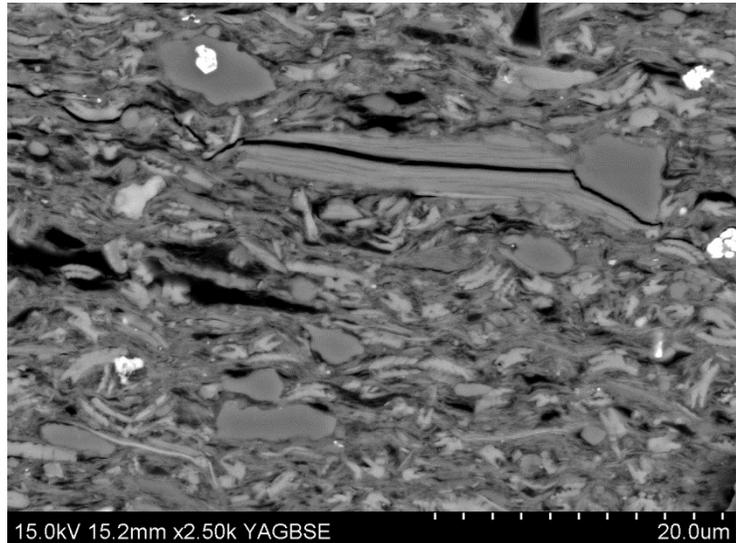
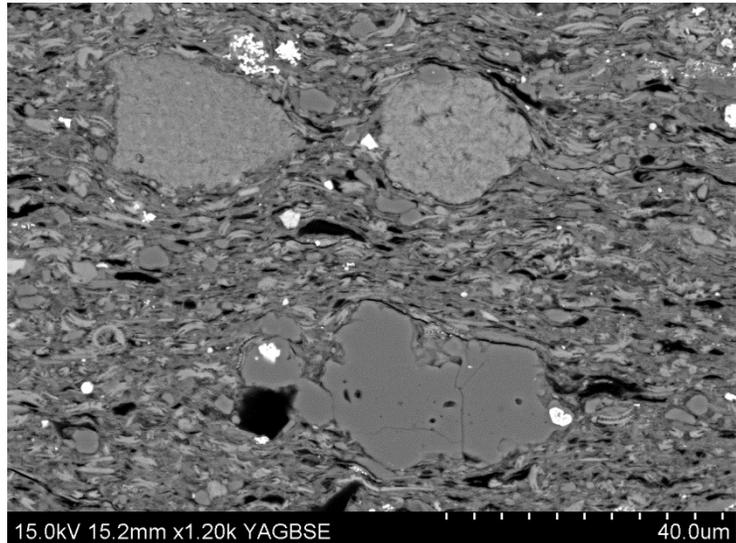
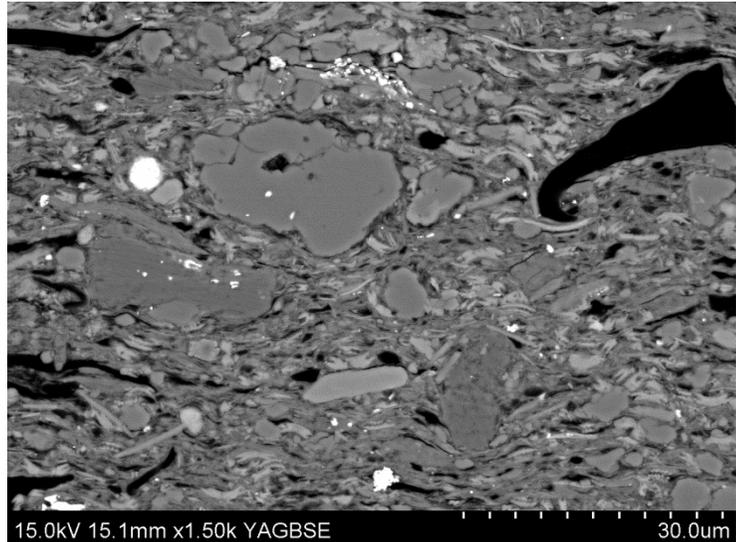
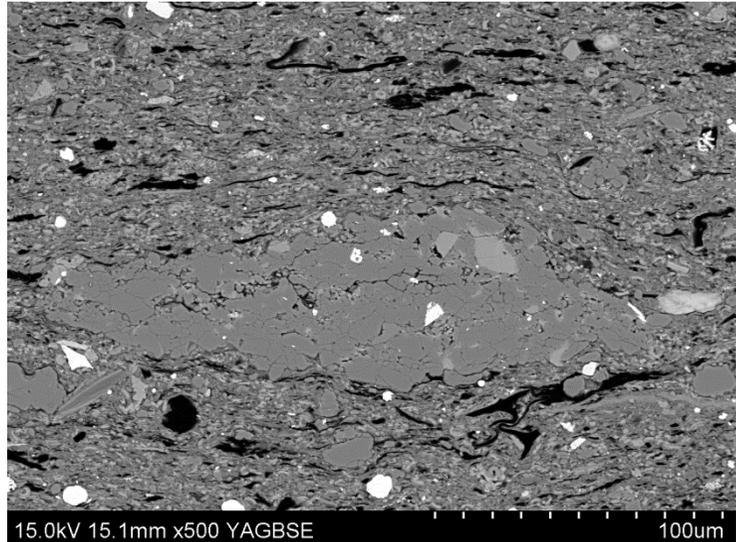
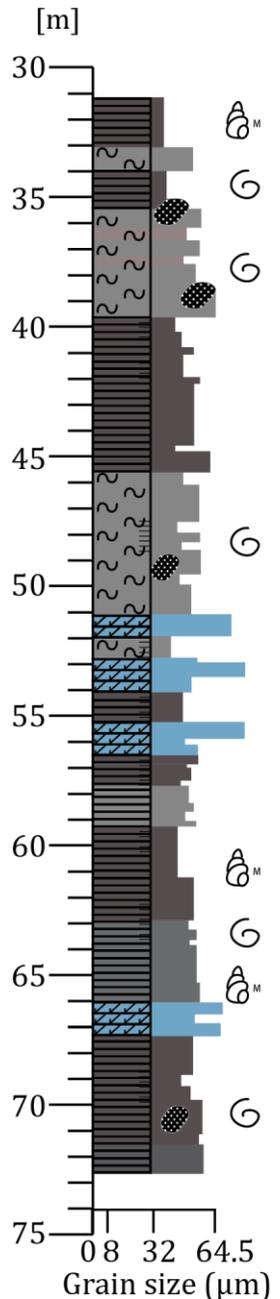
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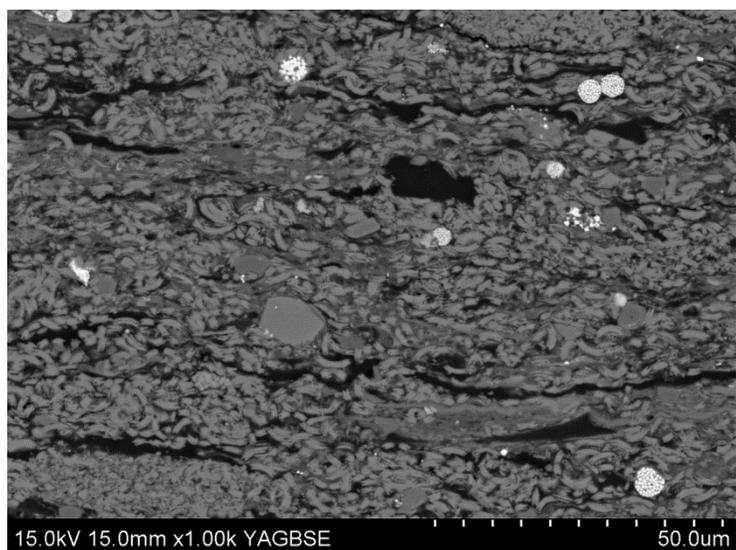
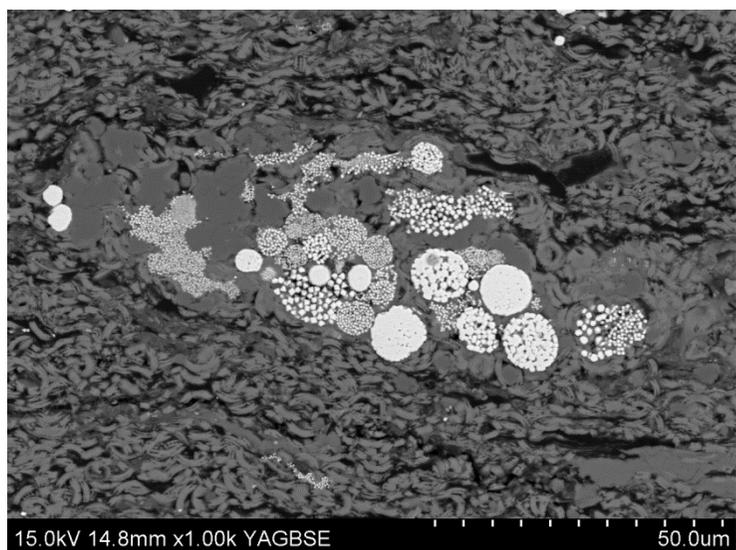
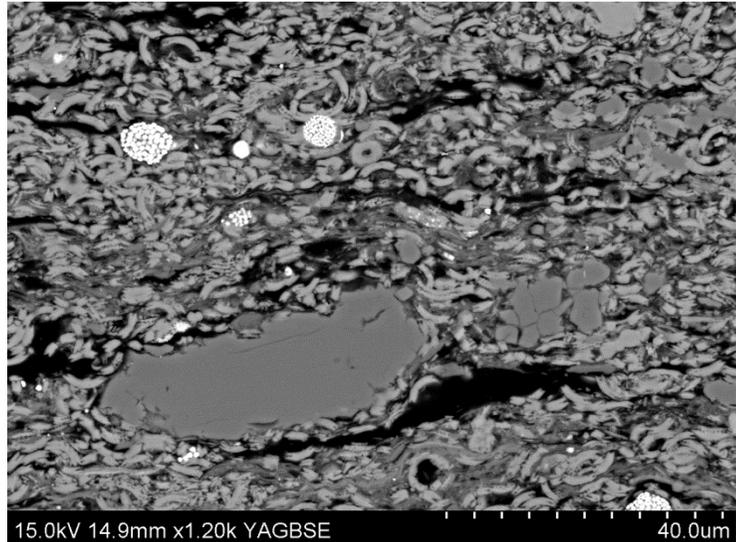
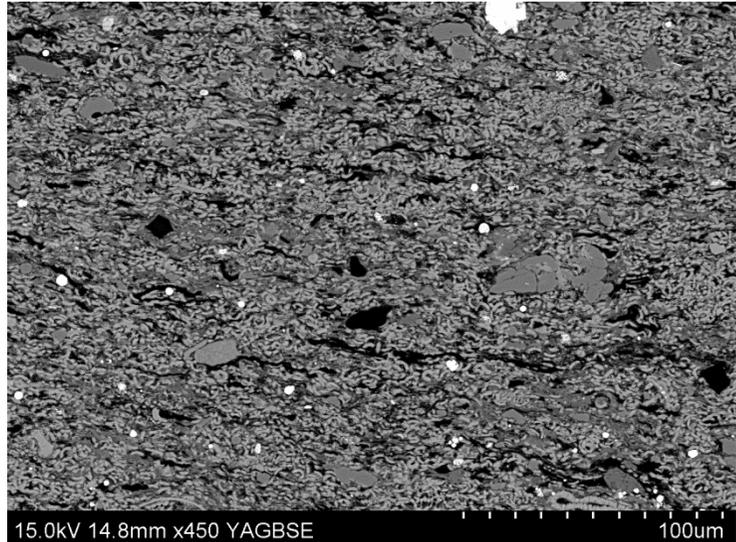
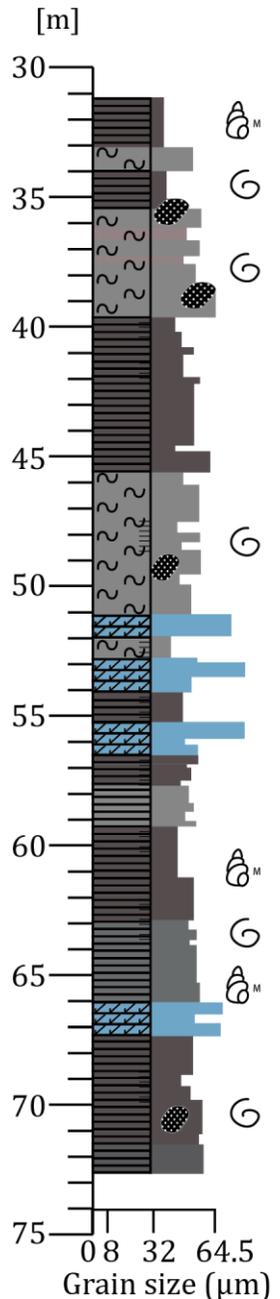
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EB 43.50 m



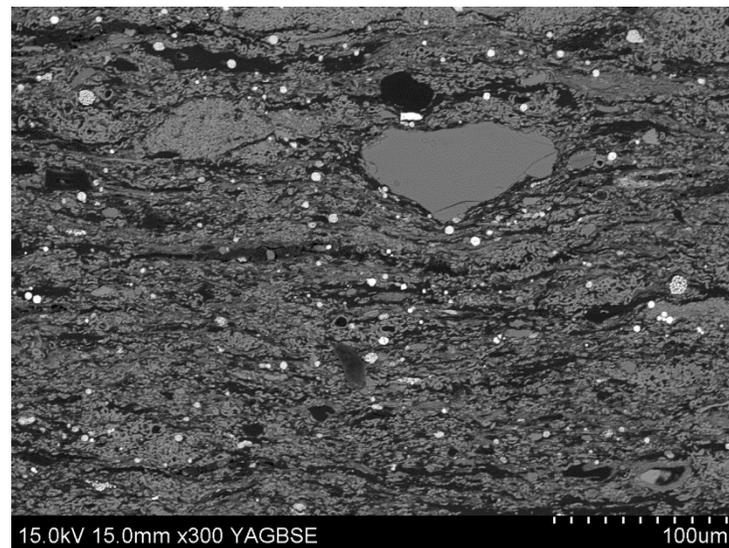
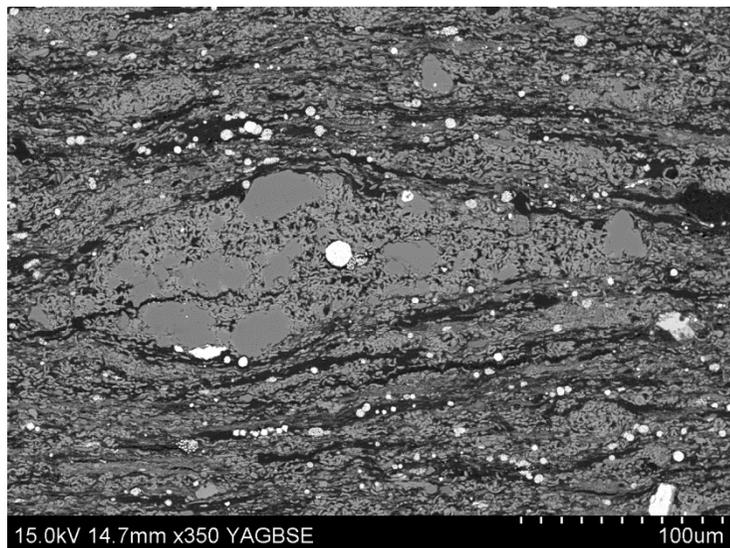
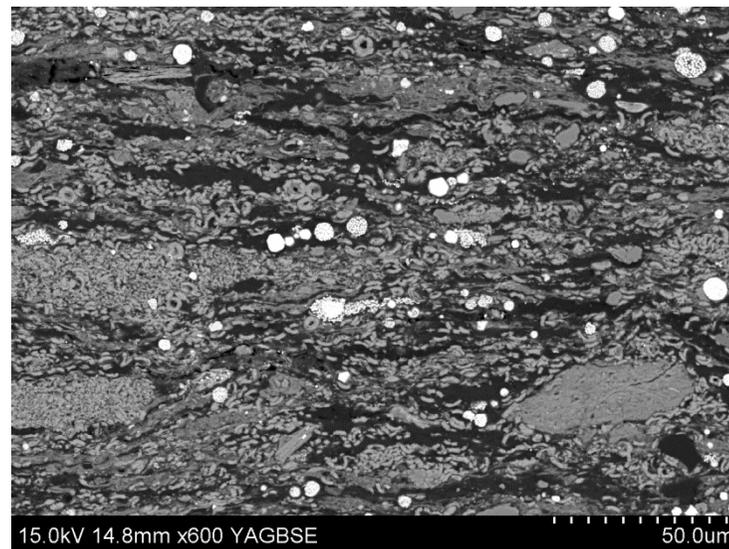
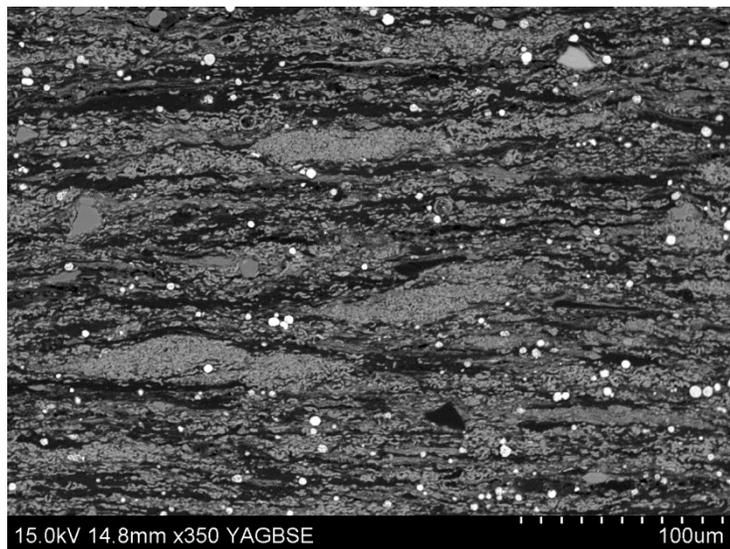
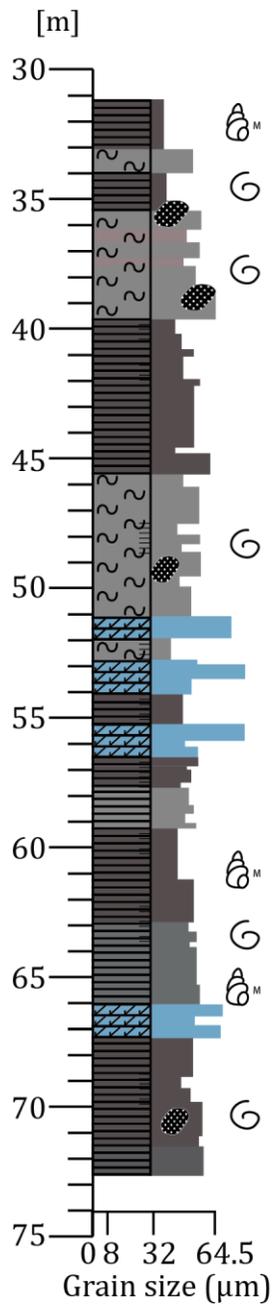
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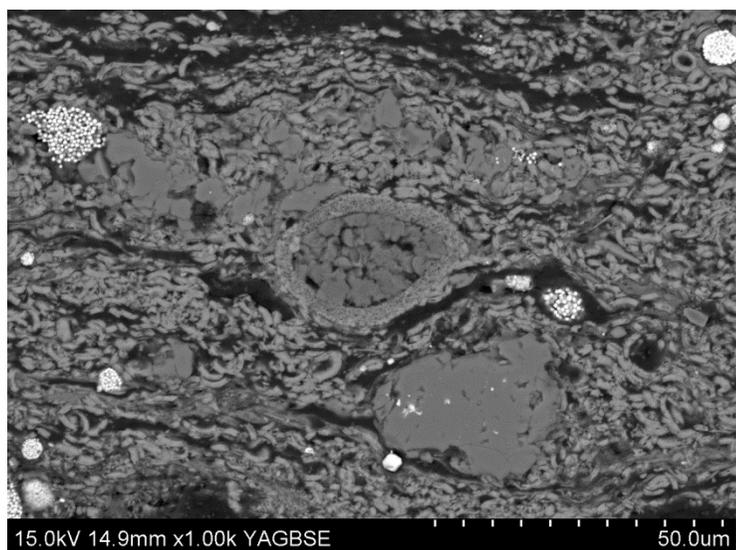
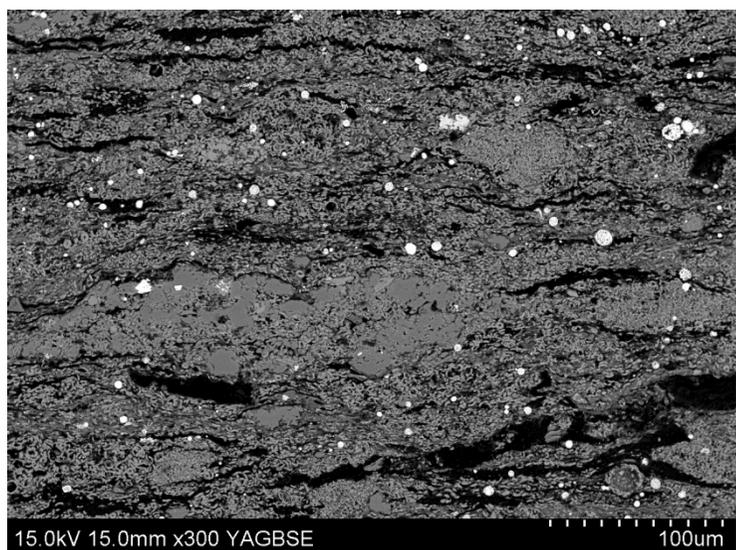
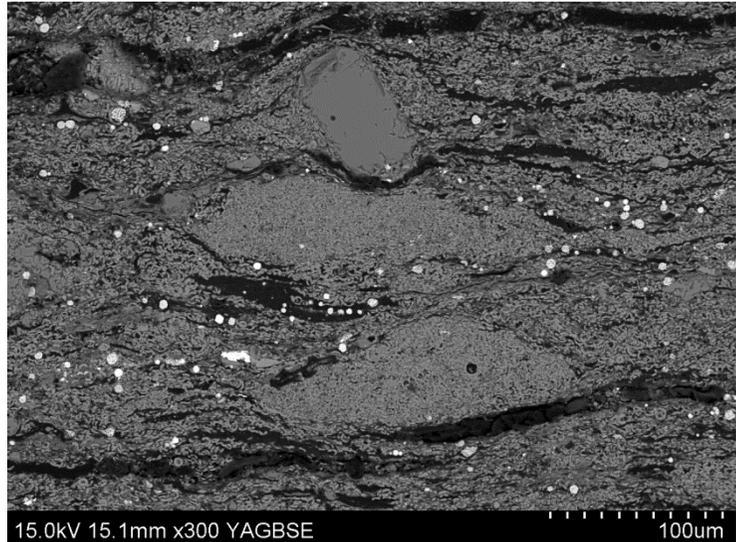
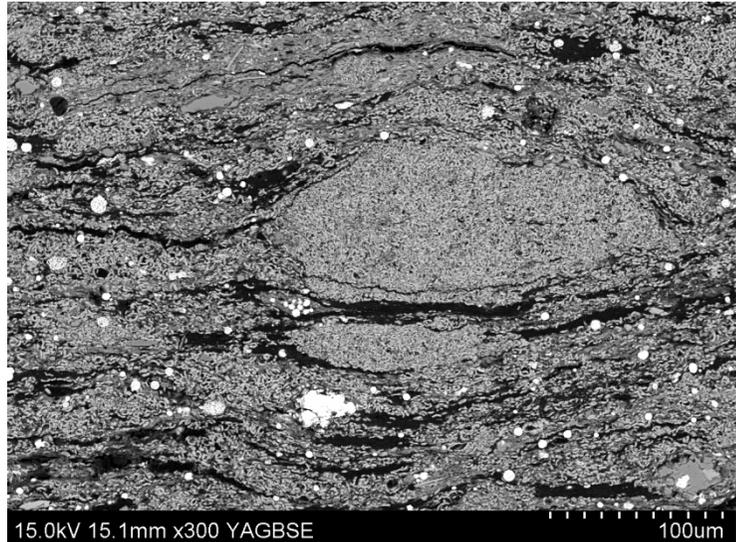
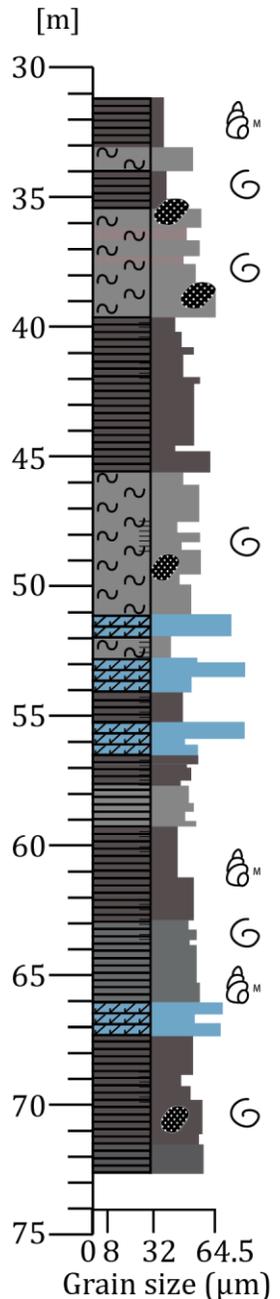
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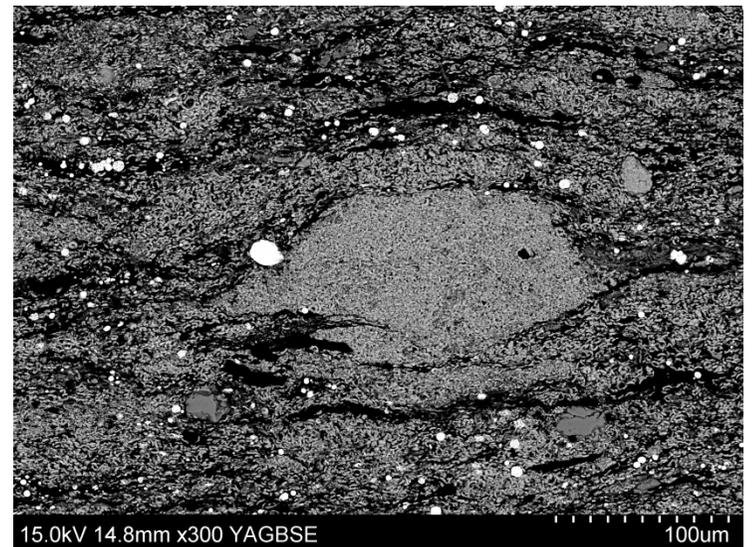
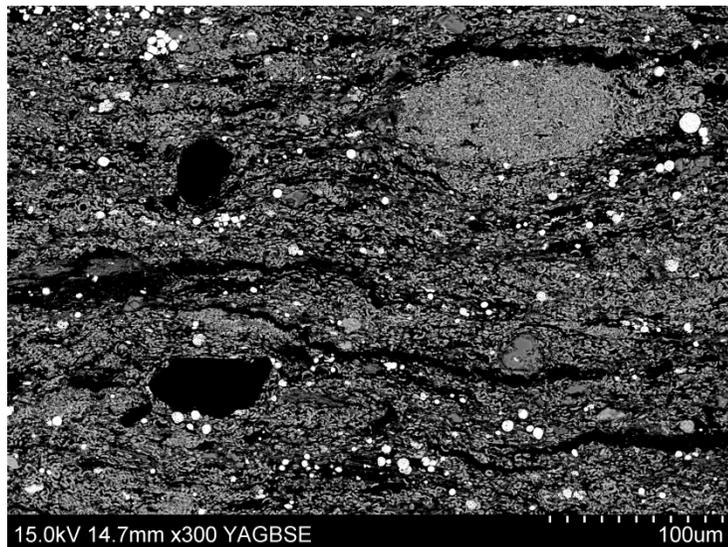
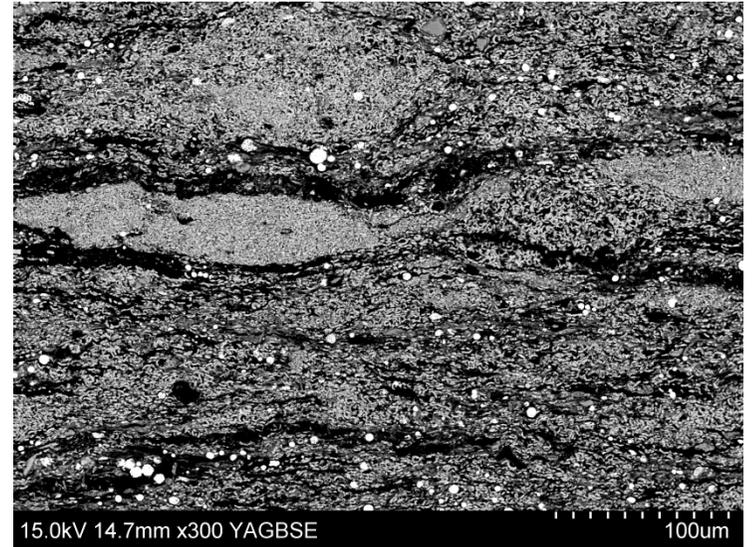
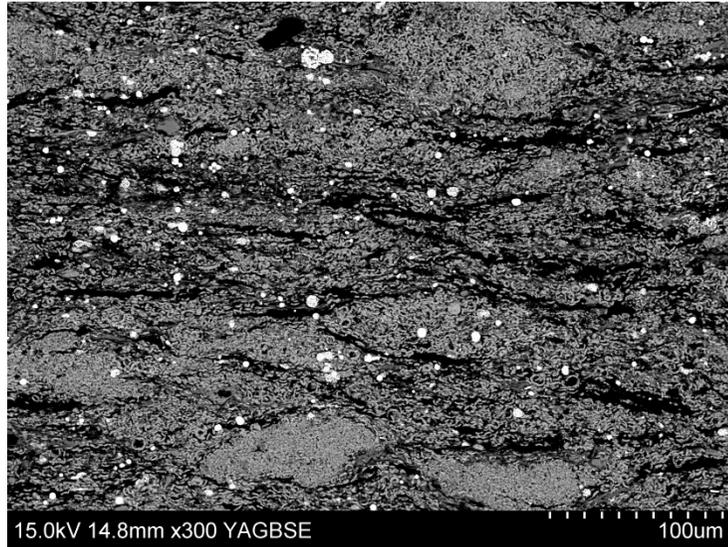
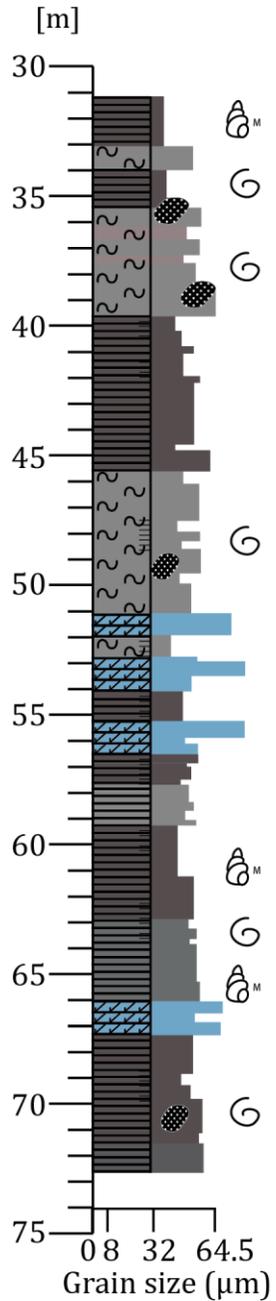
Thin section preparation: Durham University

EB 45.50 m



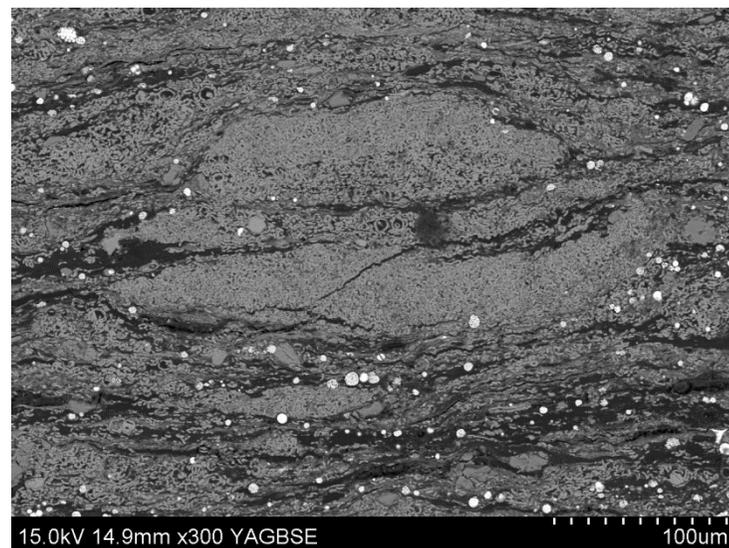
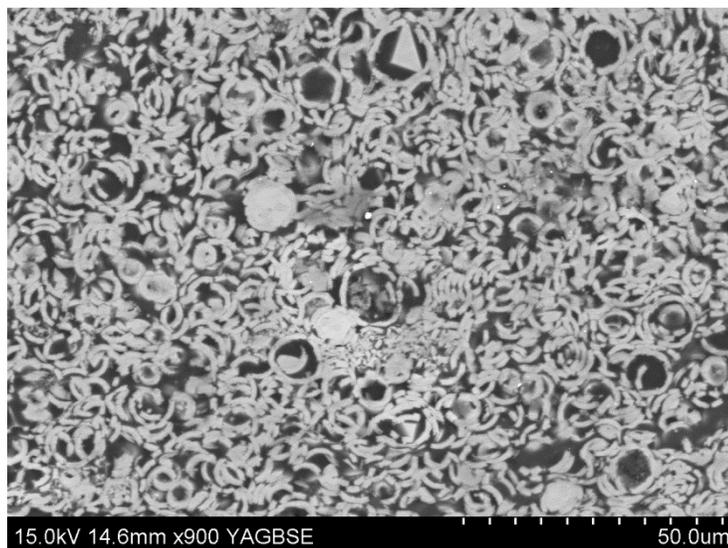
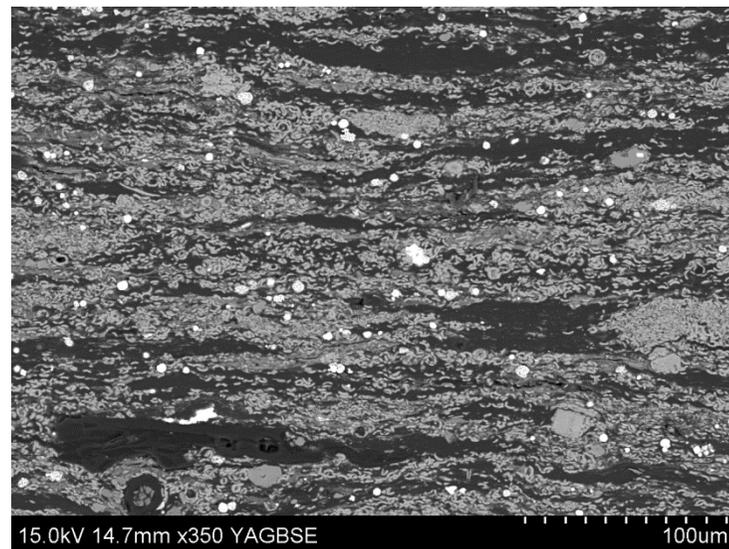
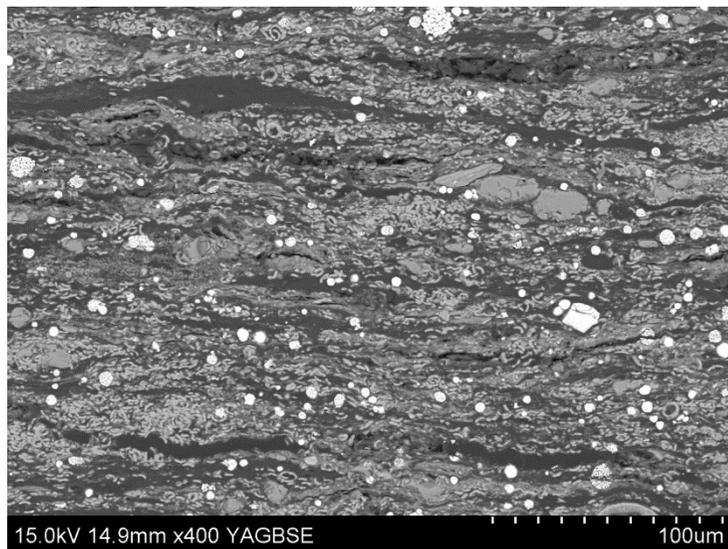
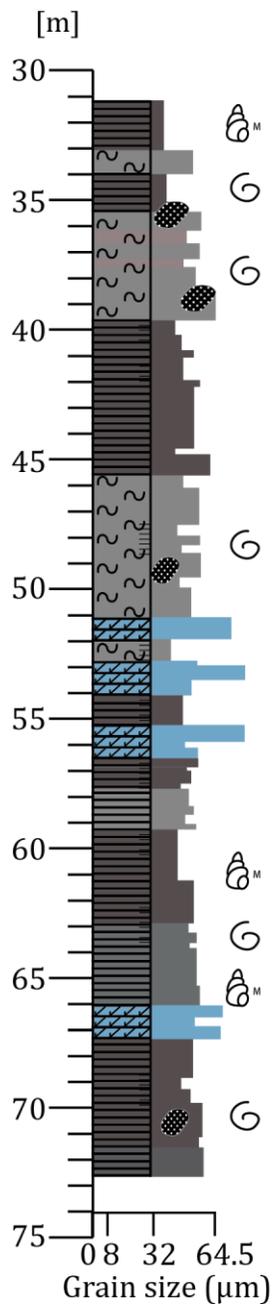
Thin section preparation: Durham University

EB 45.59 m



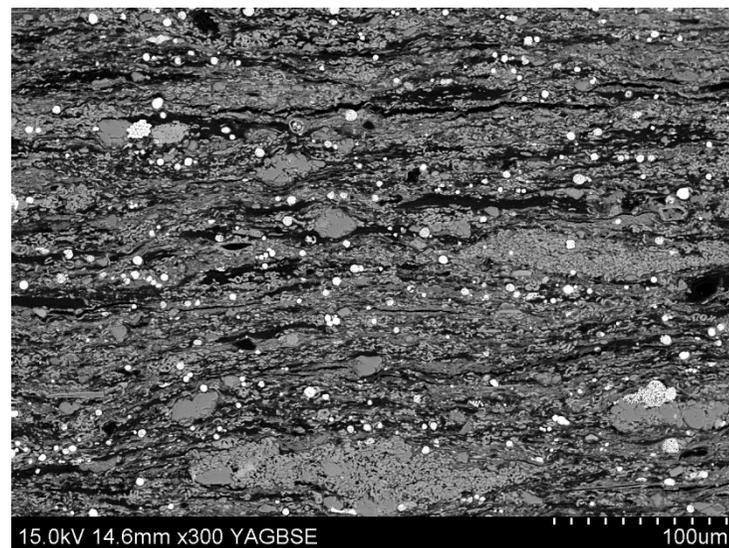
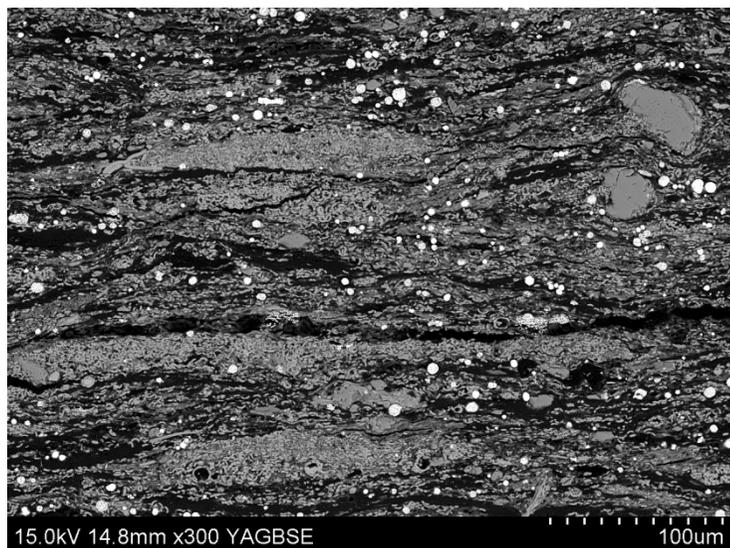
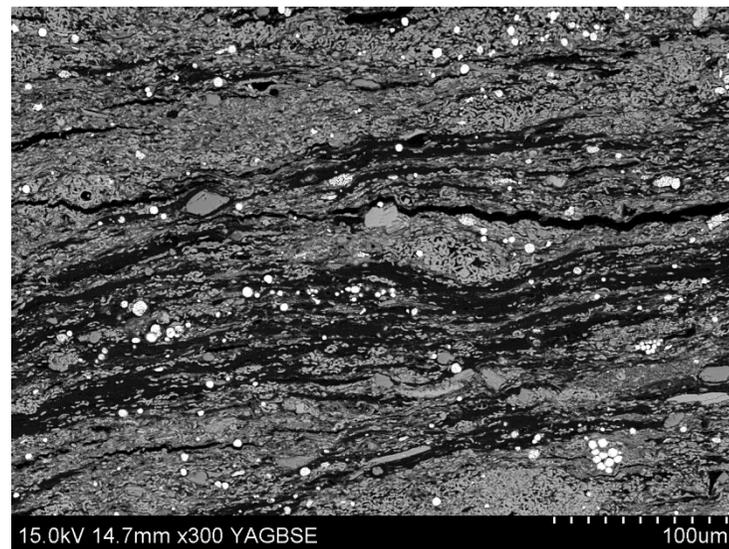
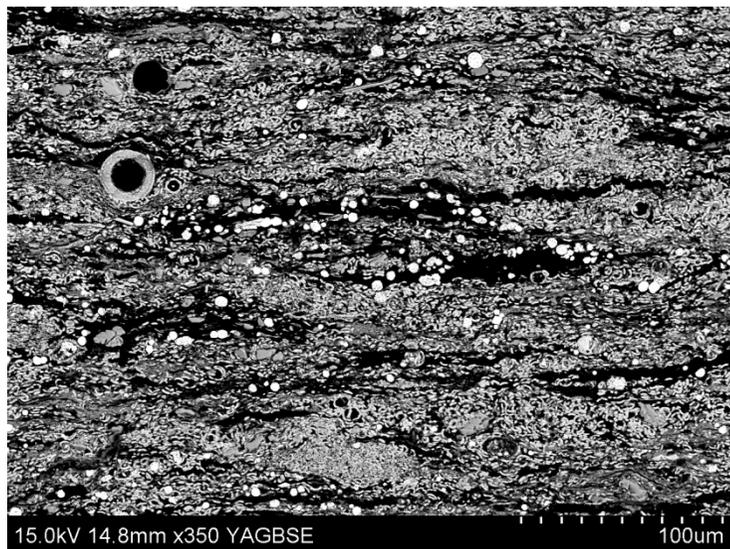
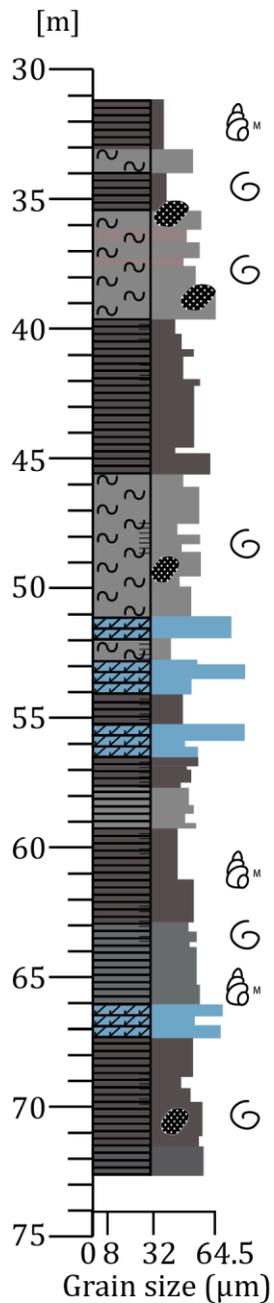
Thin section preparation: Durham University

EB 46.20 m

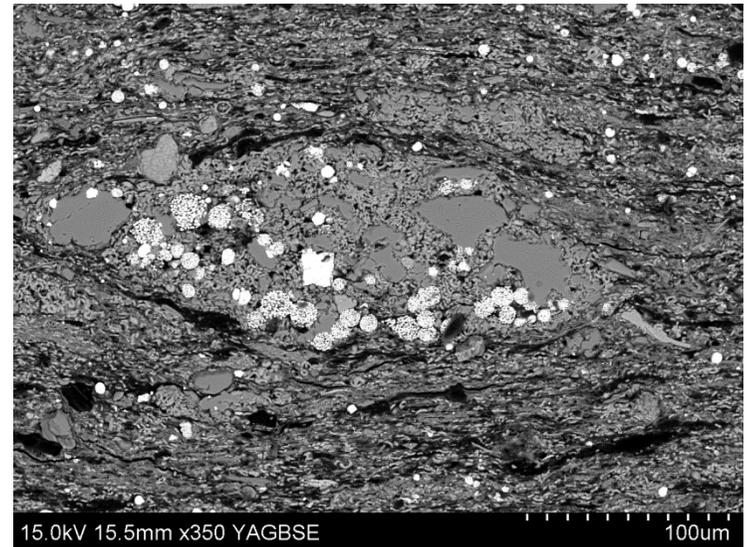
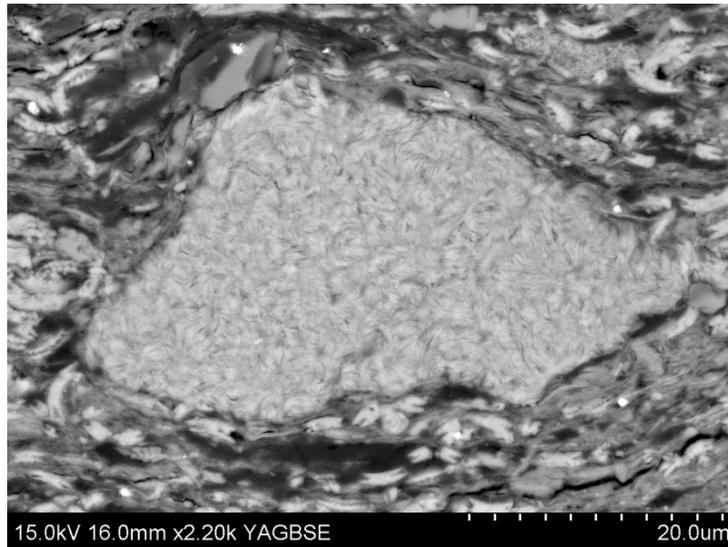
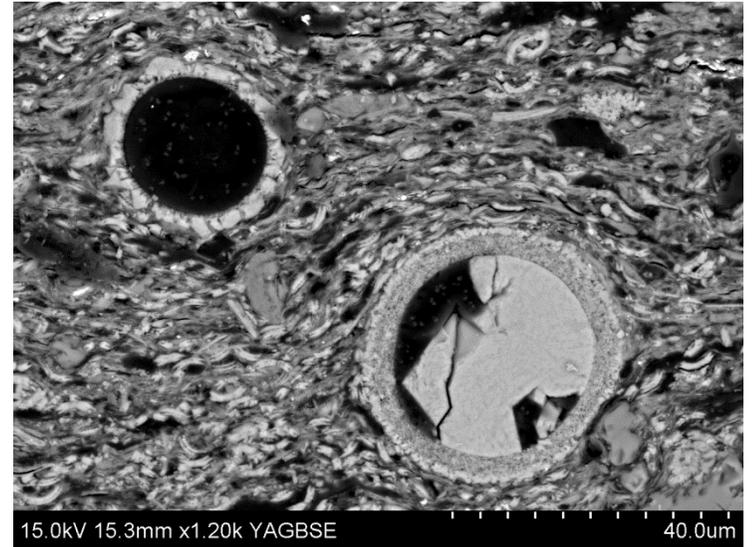
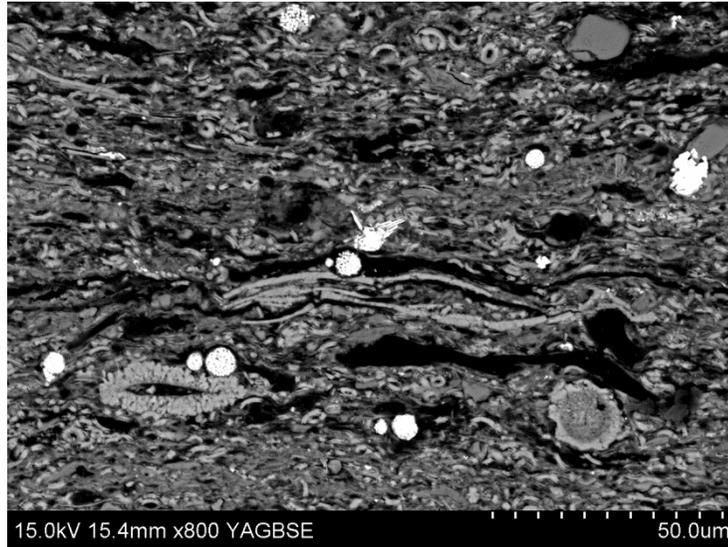
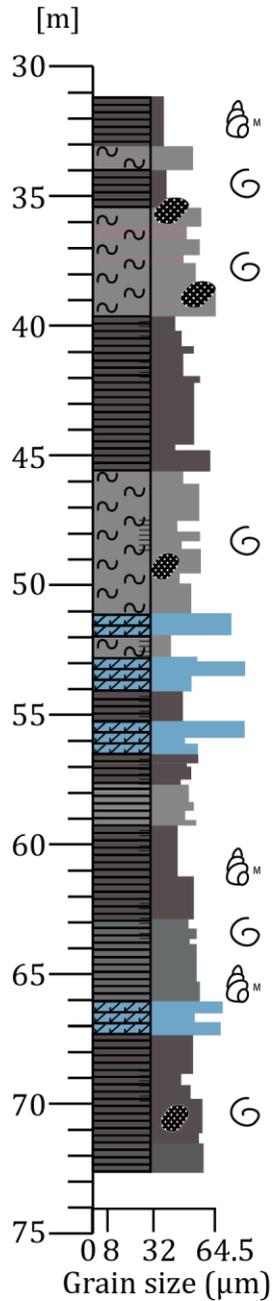


Thin section preparation: Durham University

EB 46.50 m

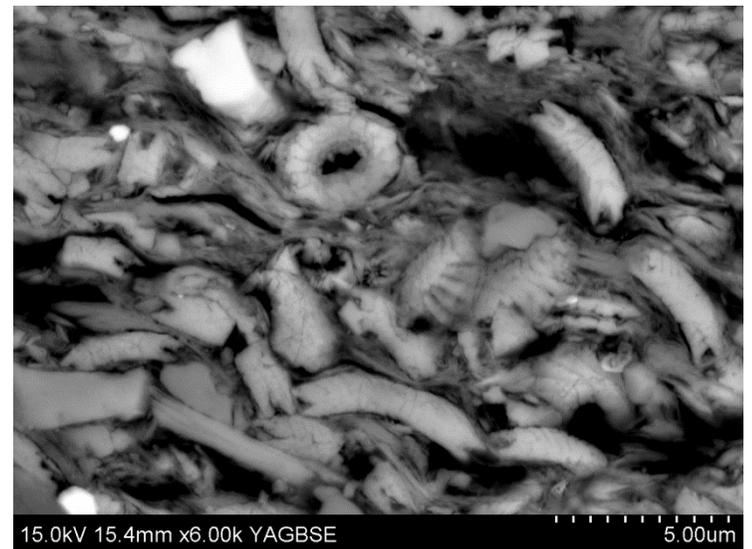
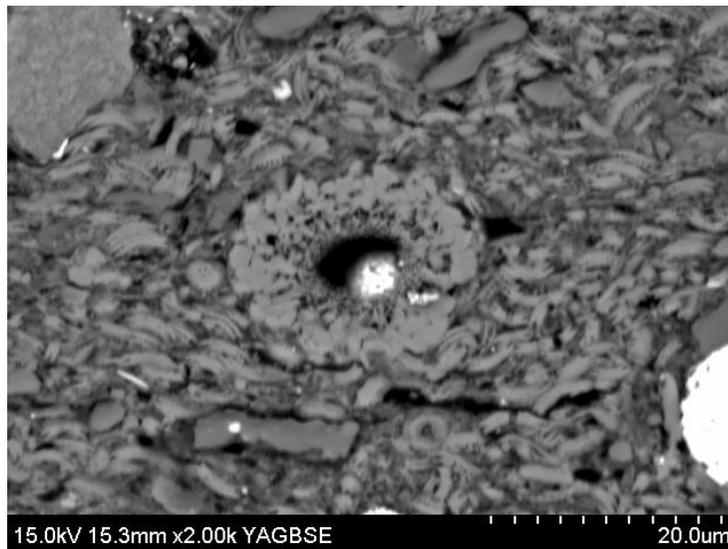
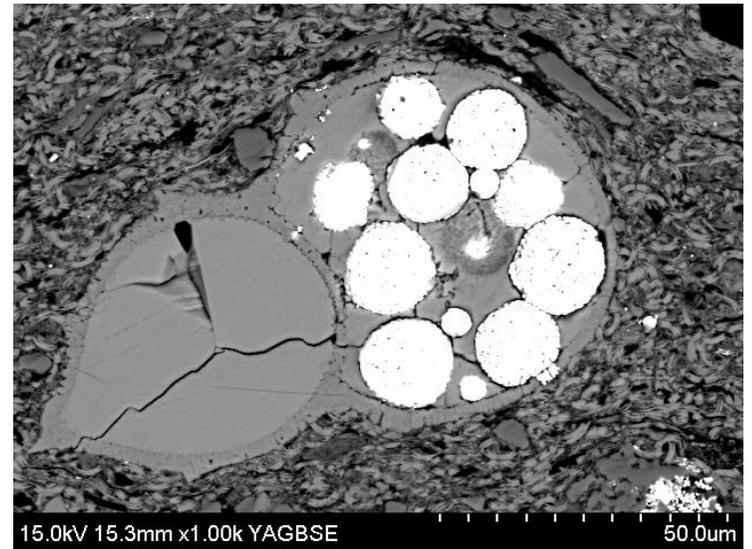
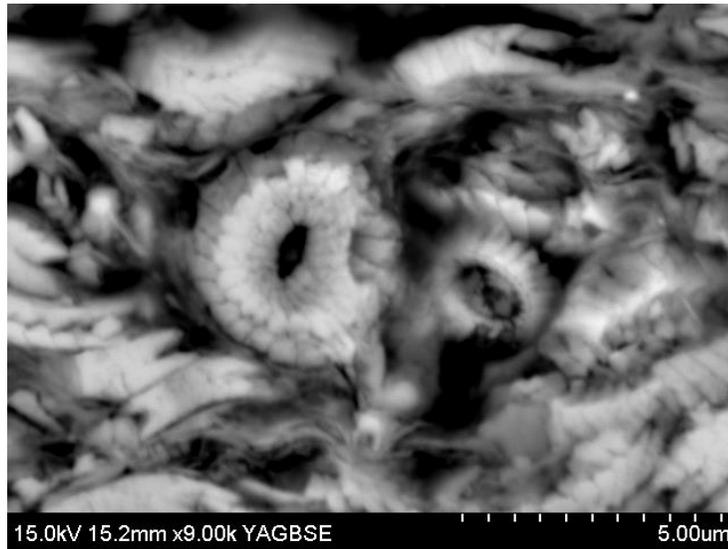
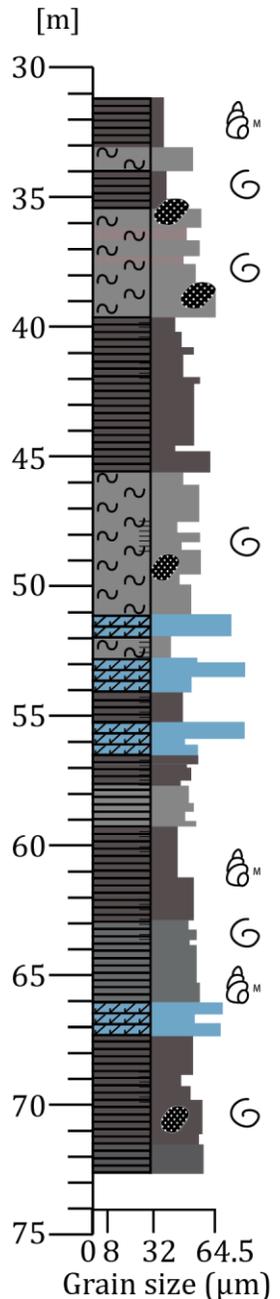


EB 46.60 m



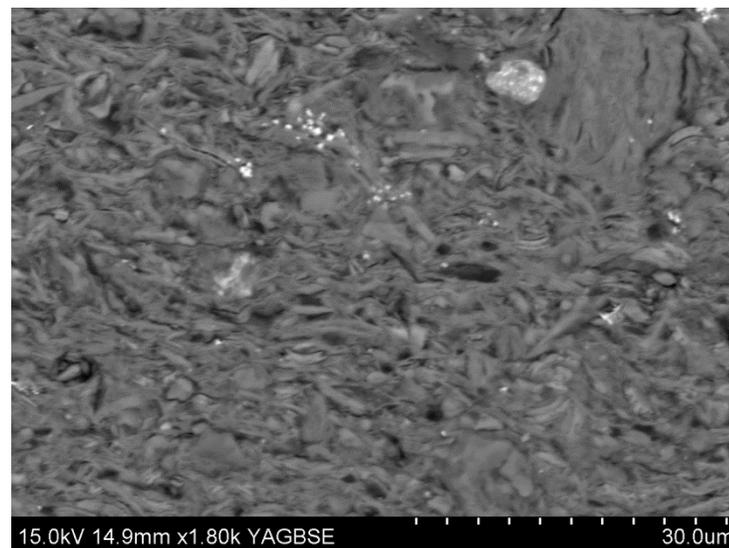
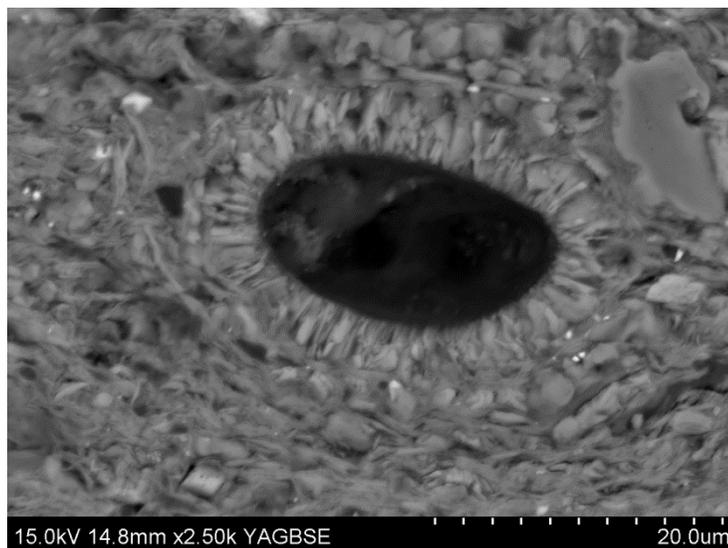
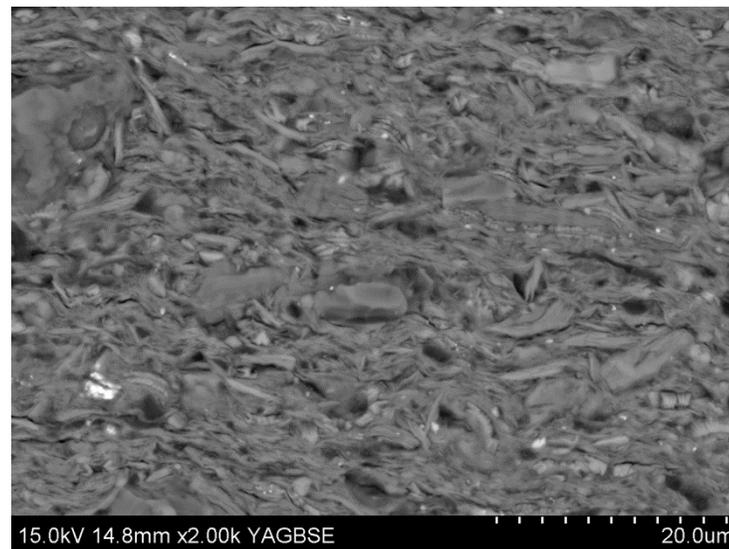
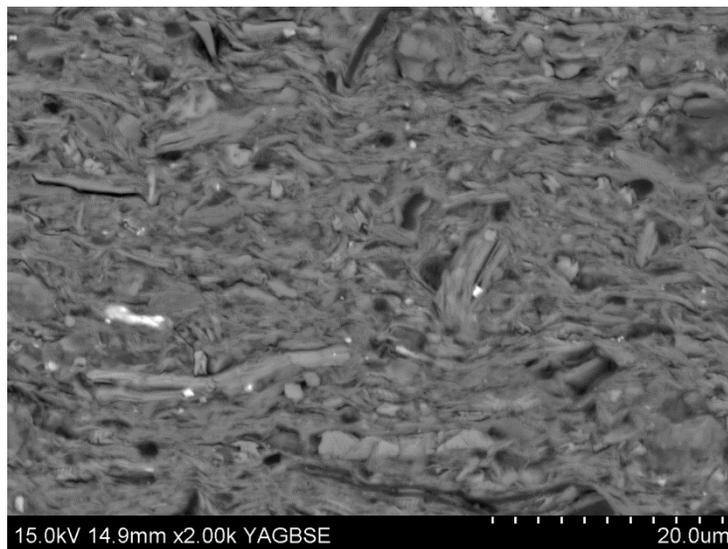
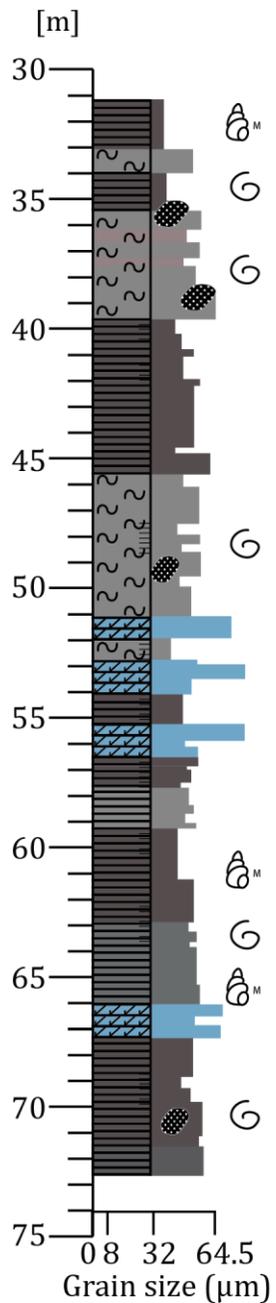
Thin section preparation: Durham University

EB 47.00 m



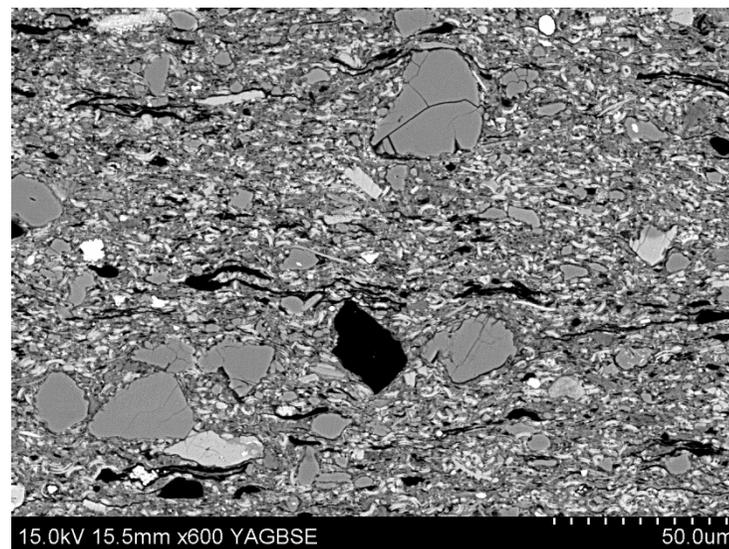
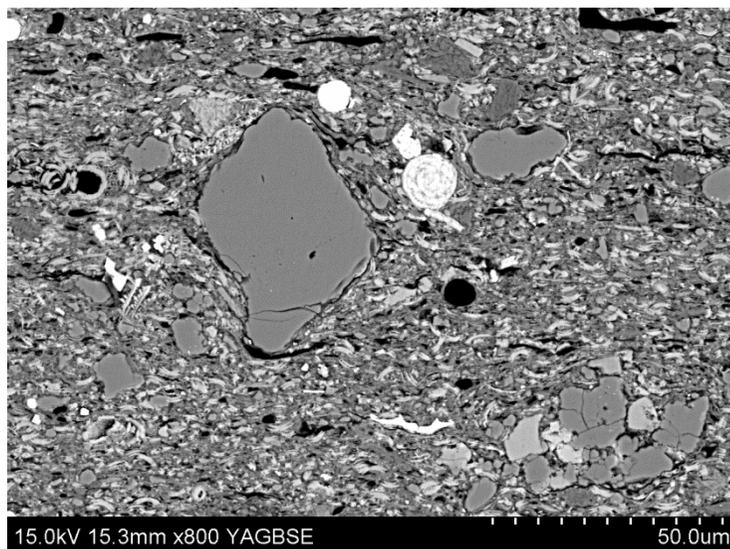
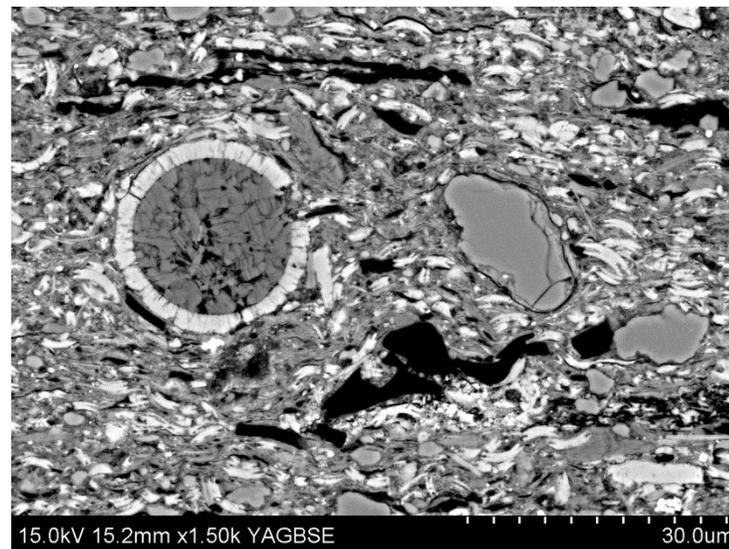
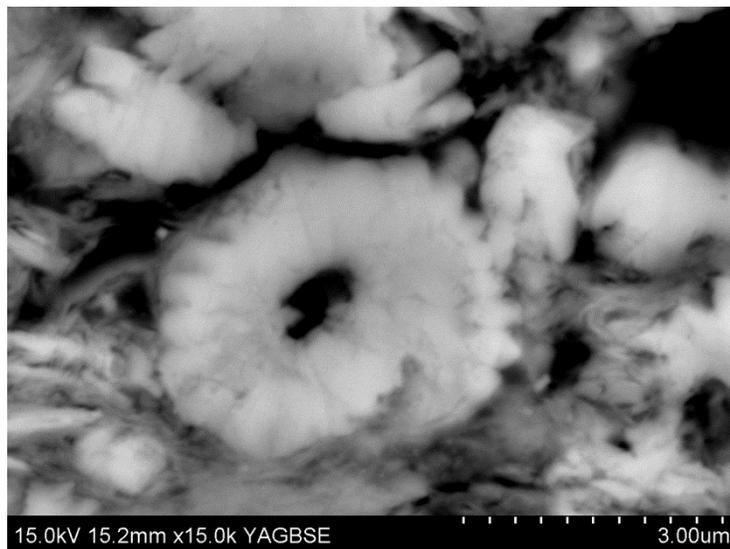
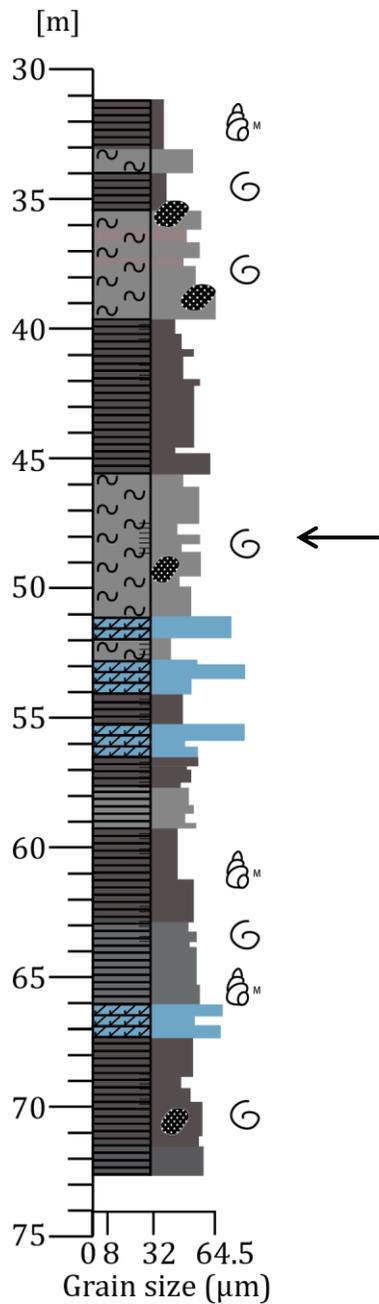
Thin section preparation: Durham University

EB 47.80 m



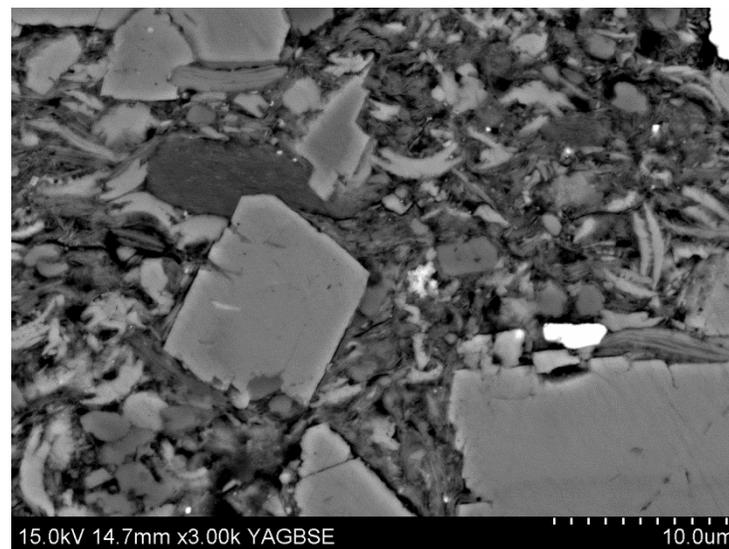
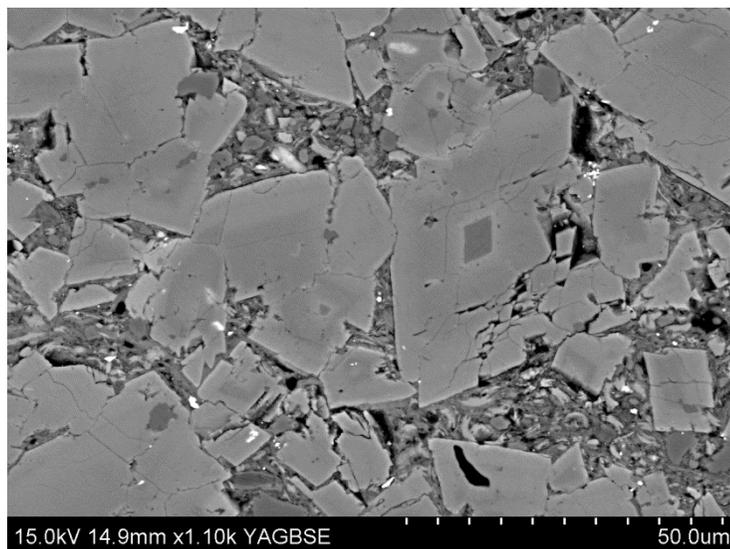
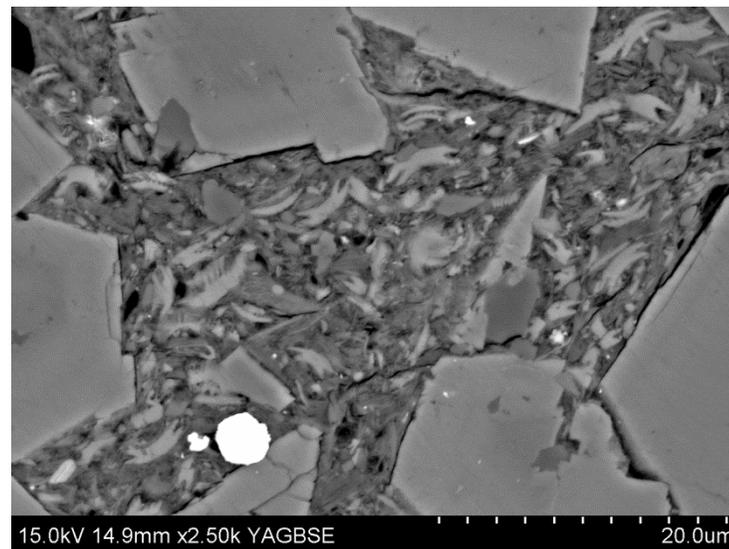
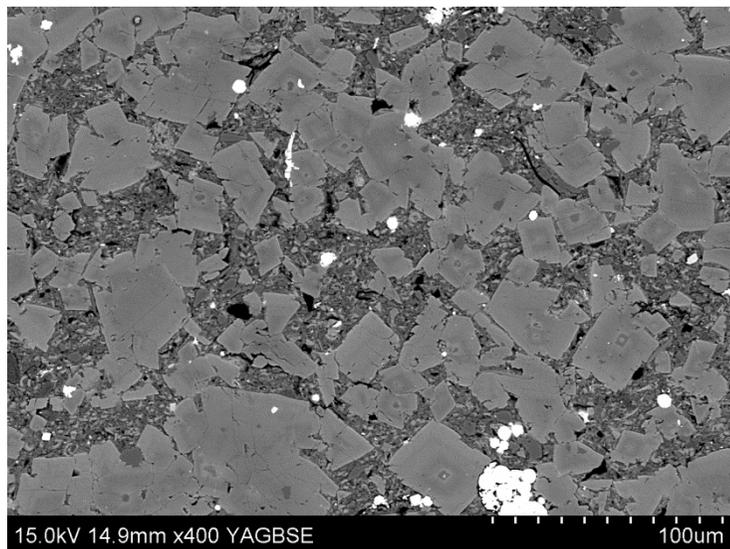
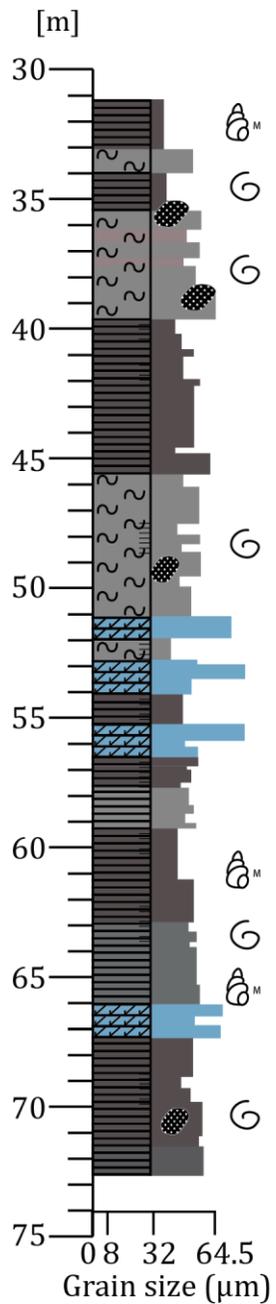
Thin section preparation: Durham University

EB 48.00 m



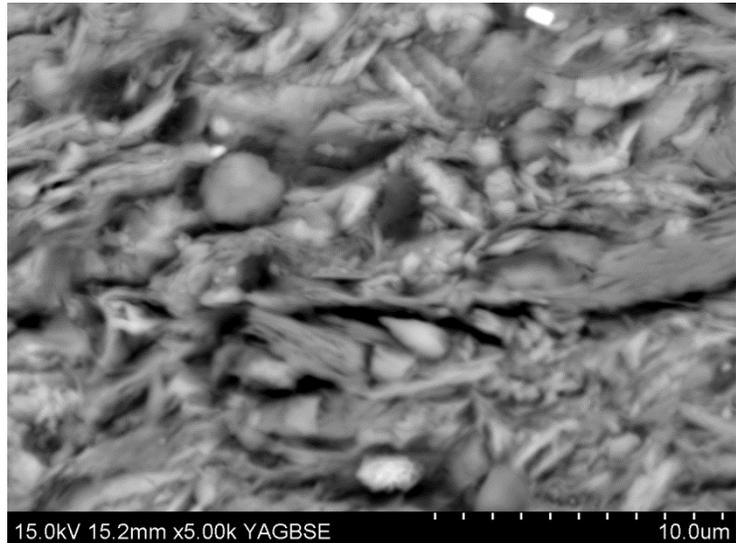
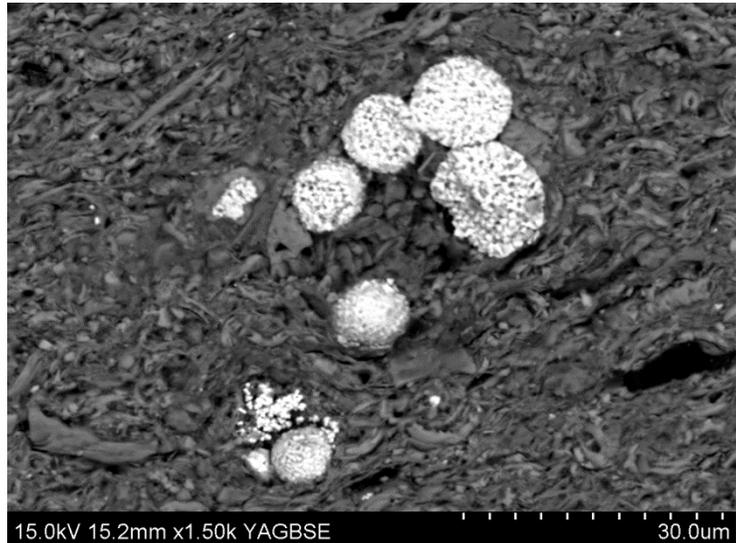
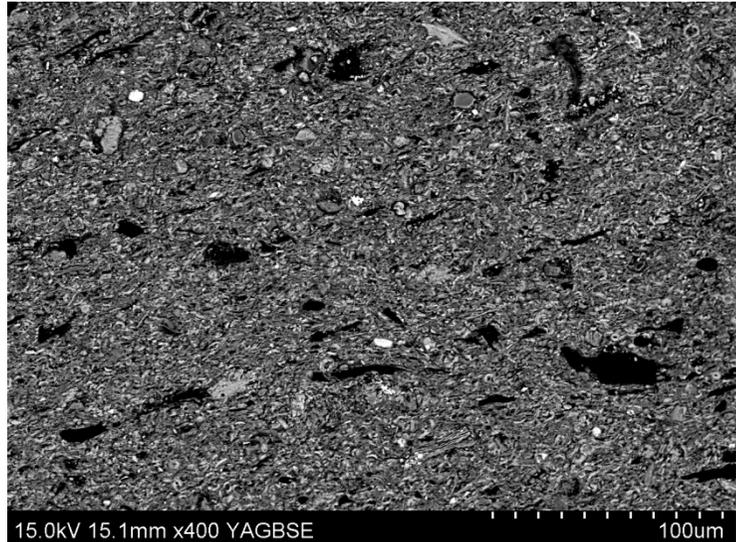
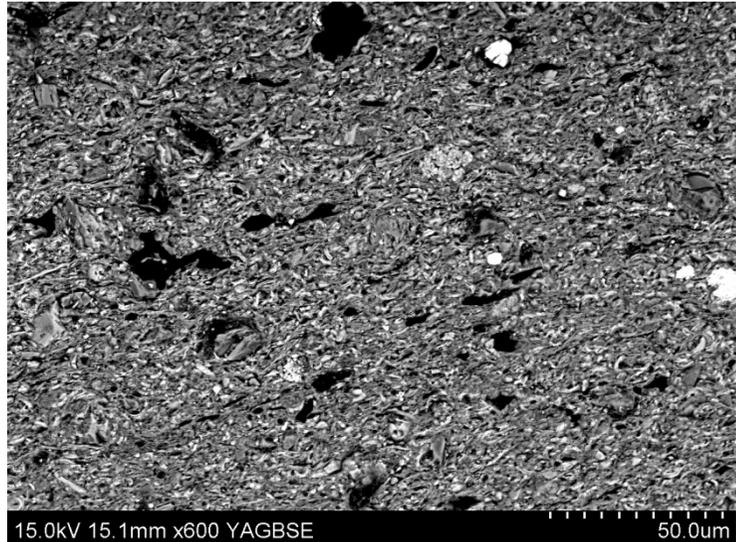
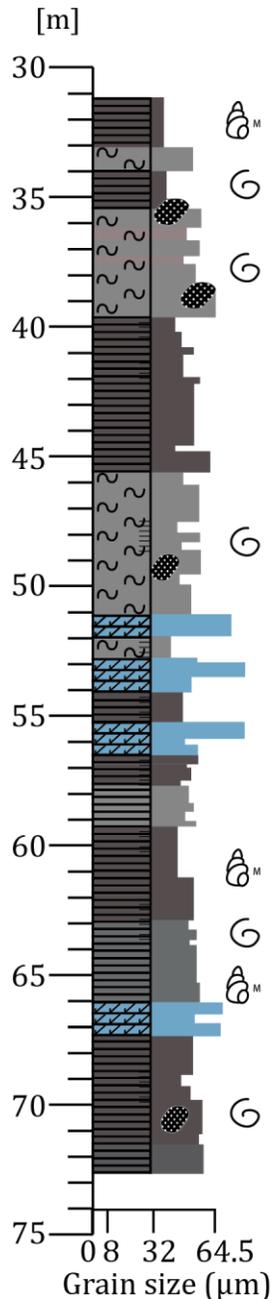
Thin section preparation: Wagner Petrographic Ltd

EB 51.00 m



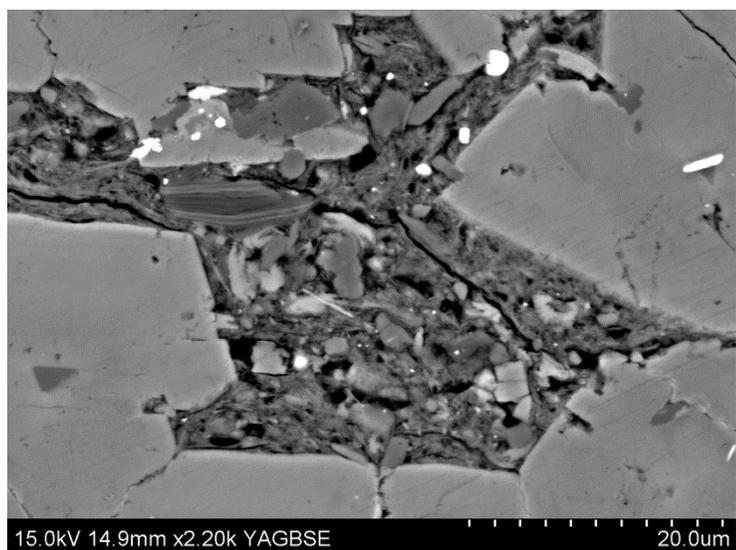
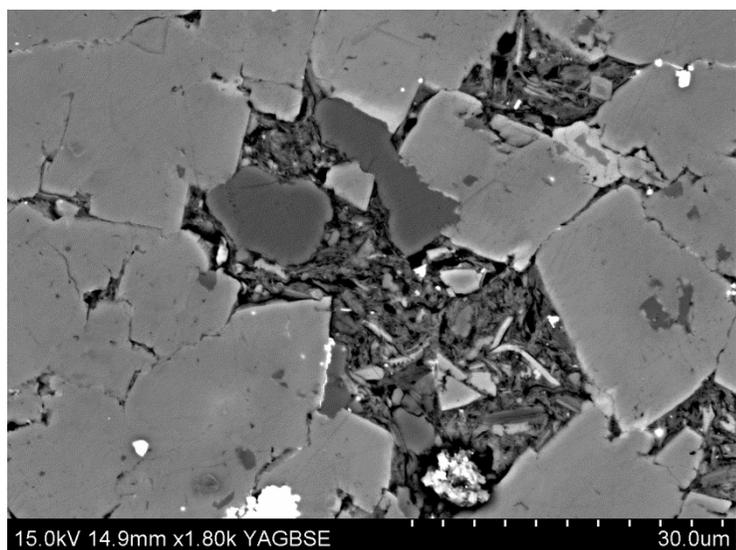
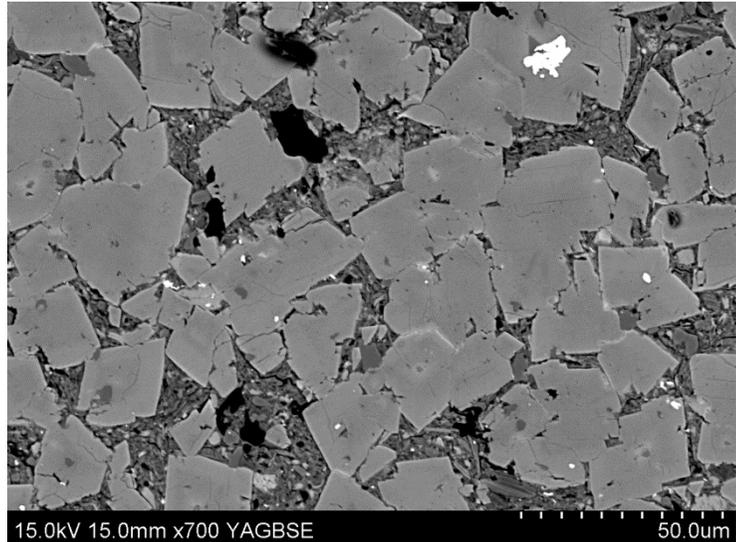
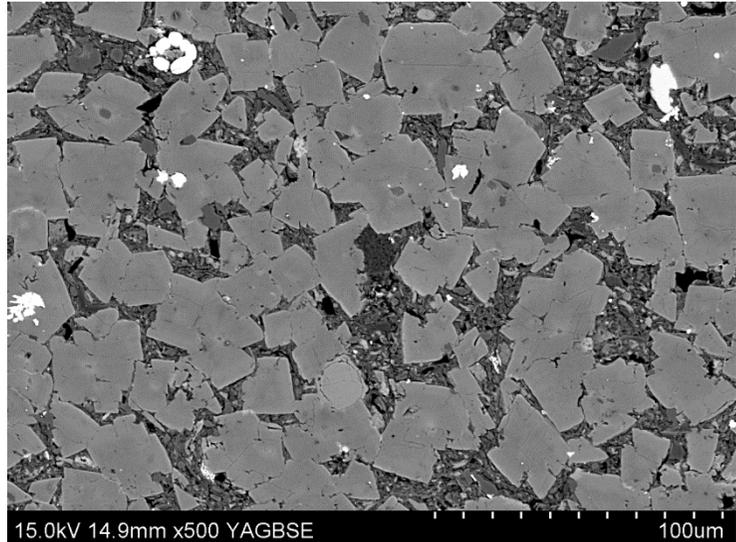
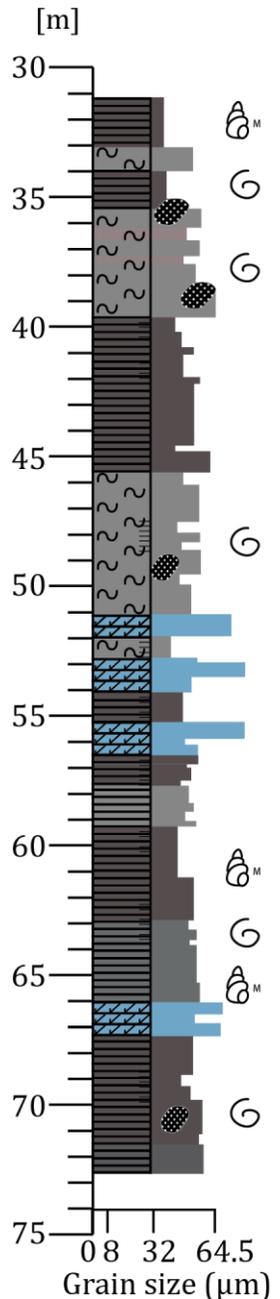
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EB 52.00 m



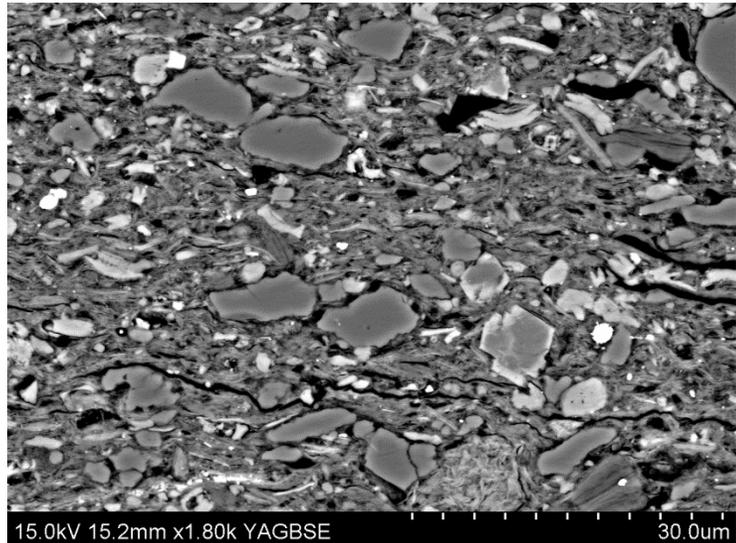
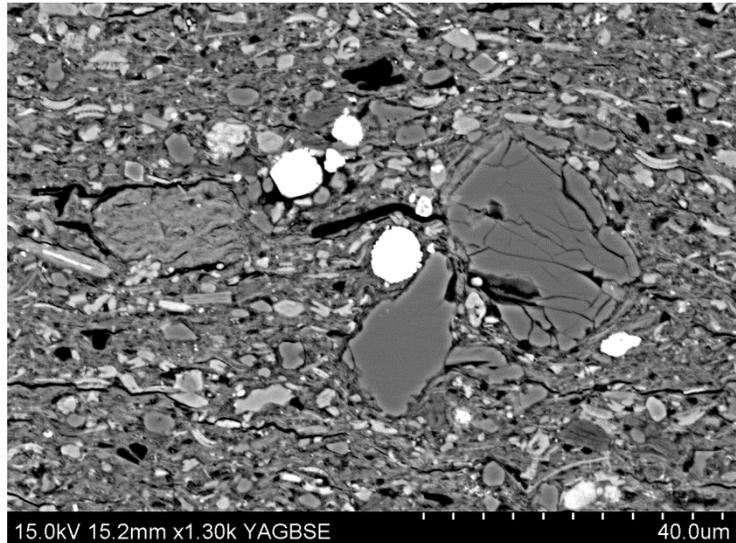
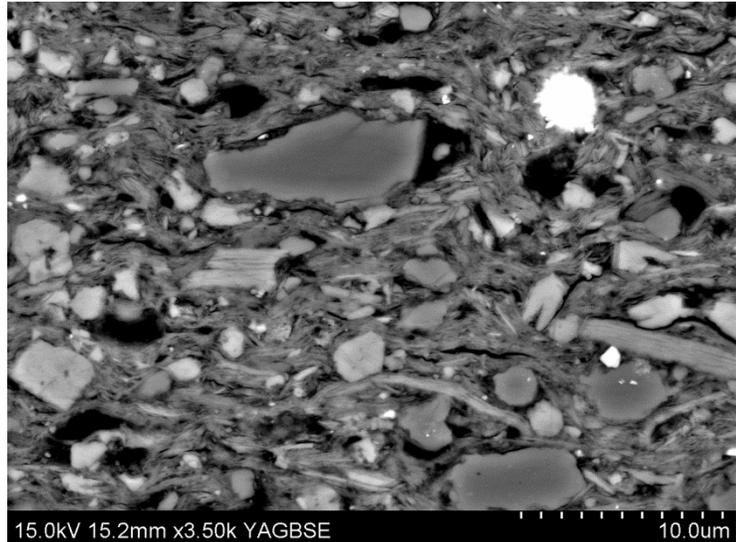
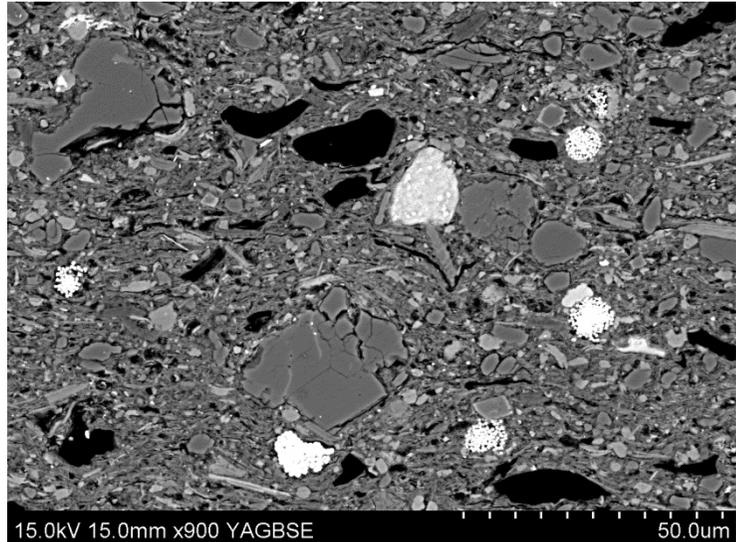
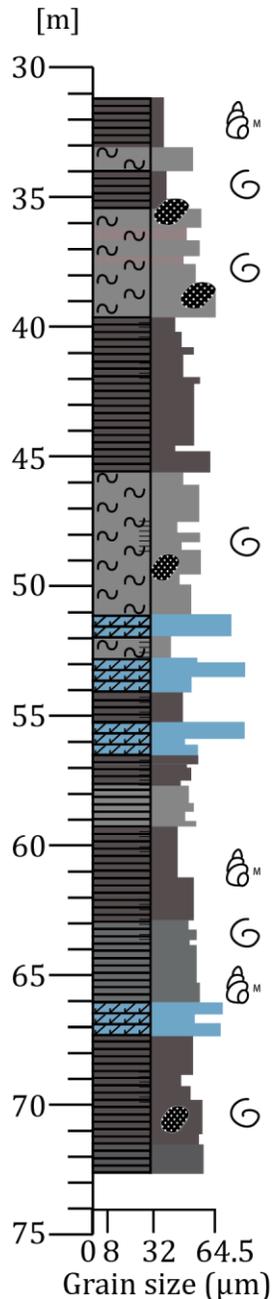
Thin section preparation: Durham University

EB 55.70 m



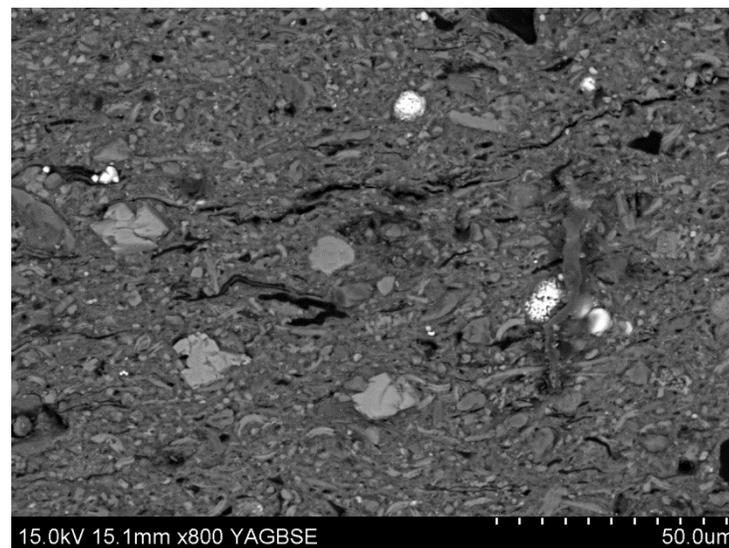
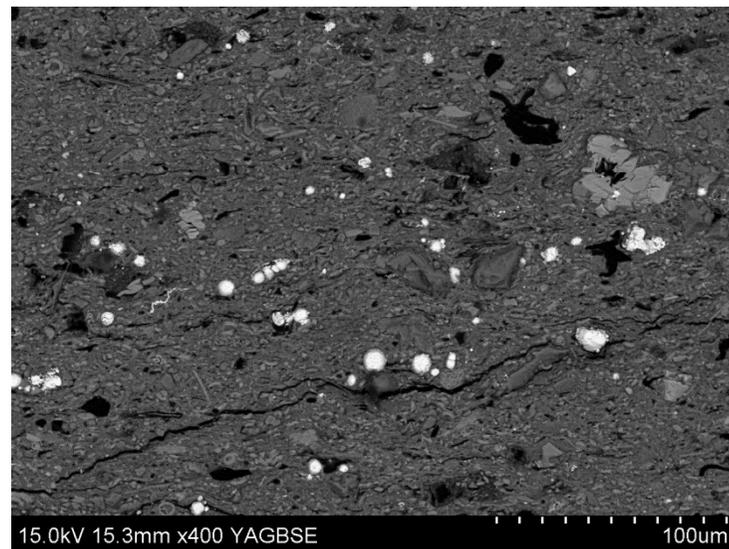
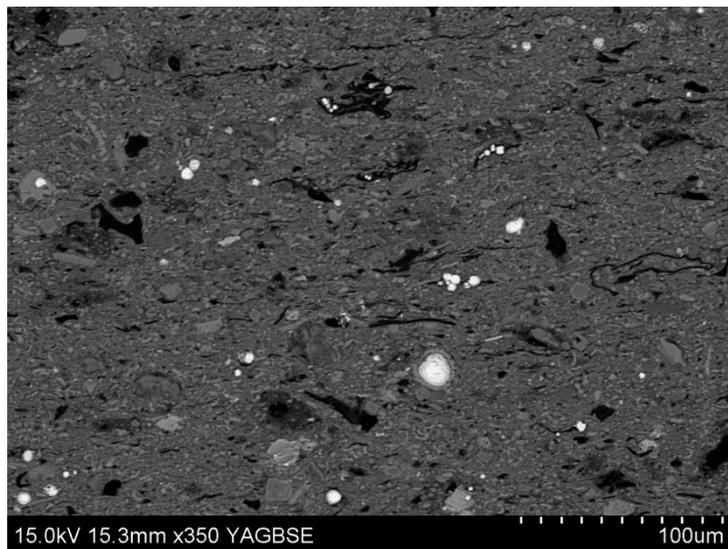
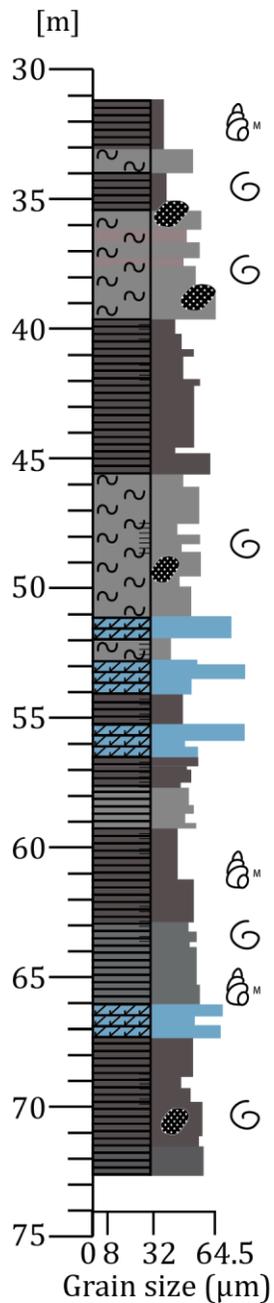
Thin section preparation: Wagner Petrographic Ltd

EB 57.70 m

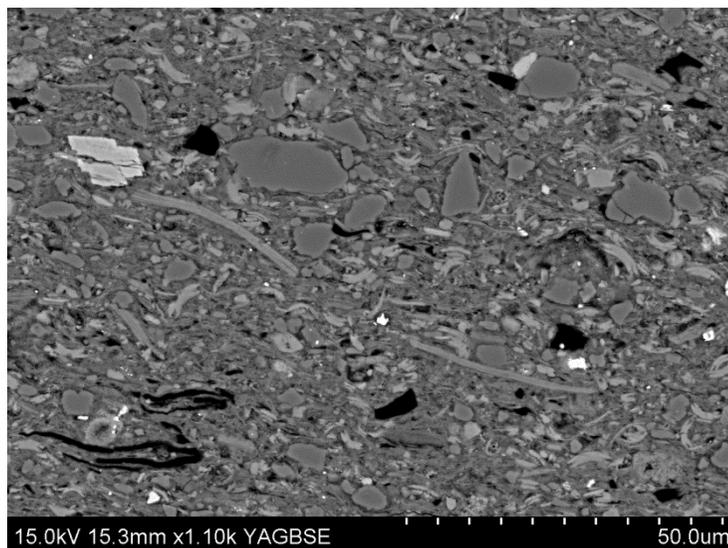
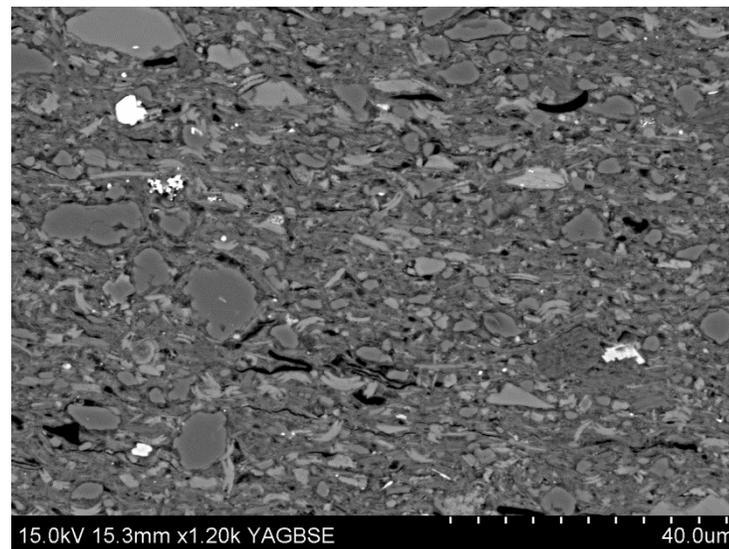
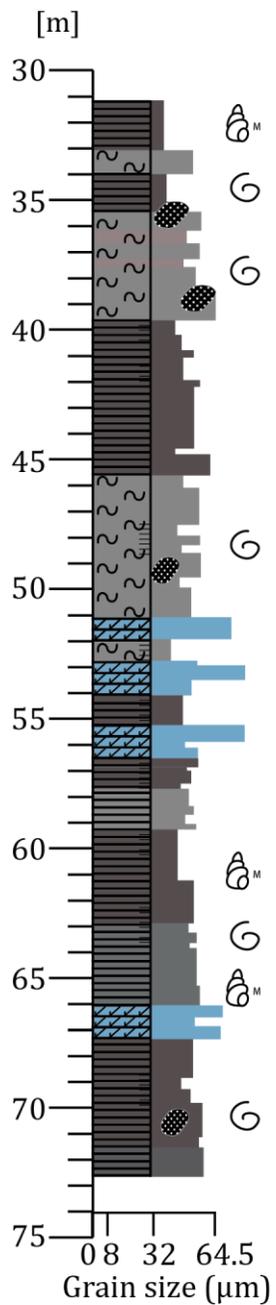


Thin section preparation: Wagner Petrographic Ltd

EB 60.70 m

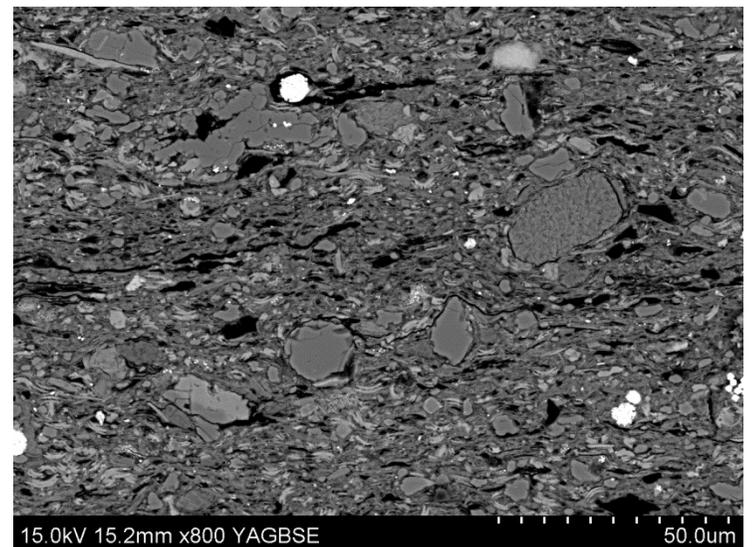
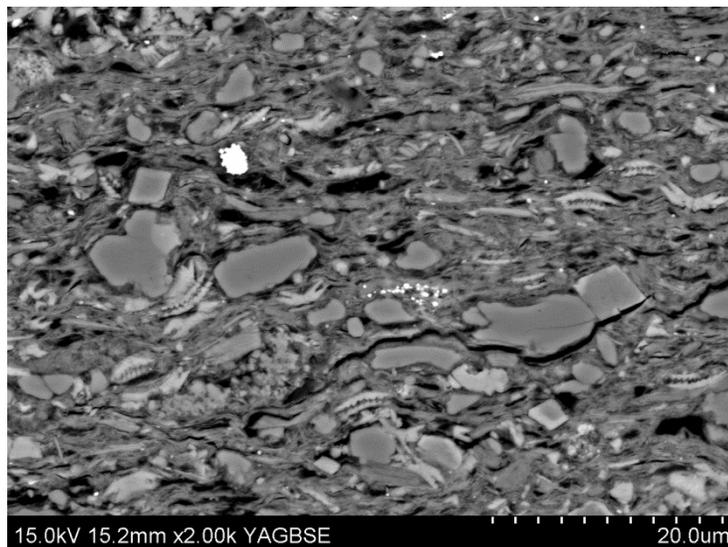
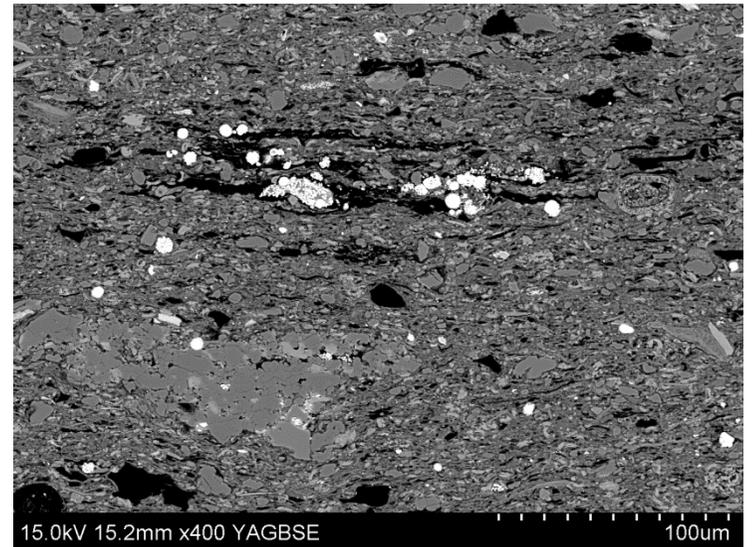
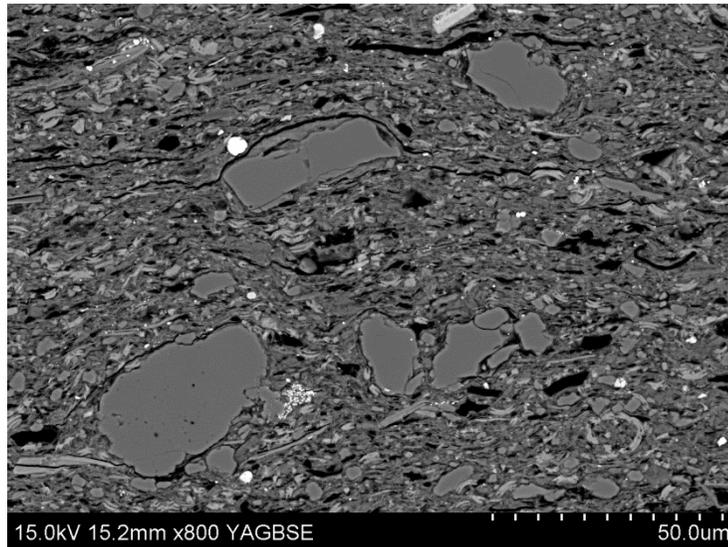
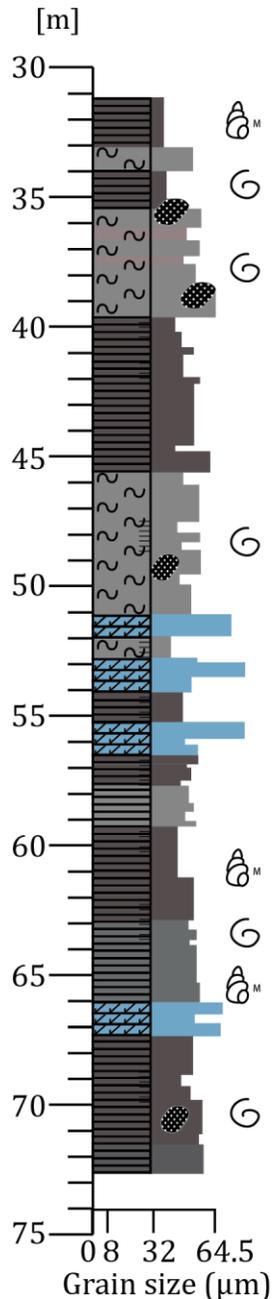


EB 63.00 m



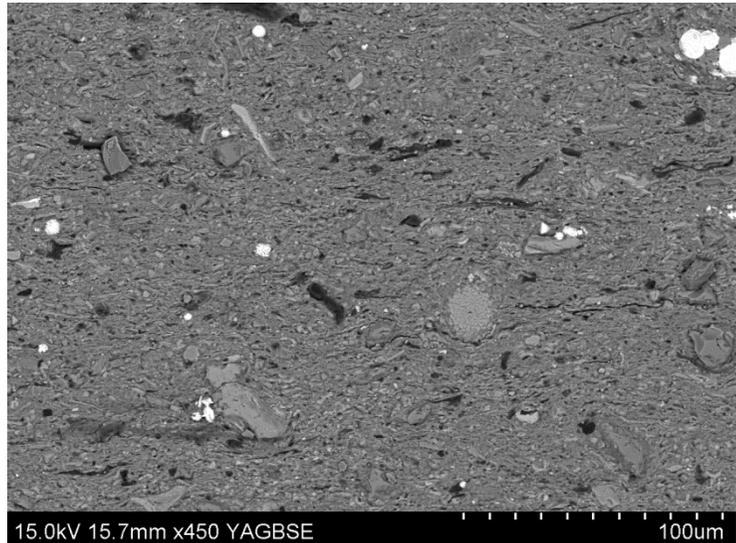
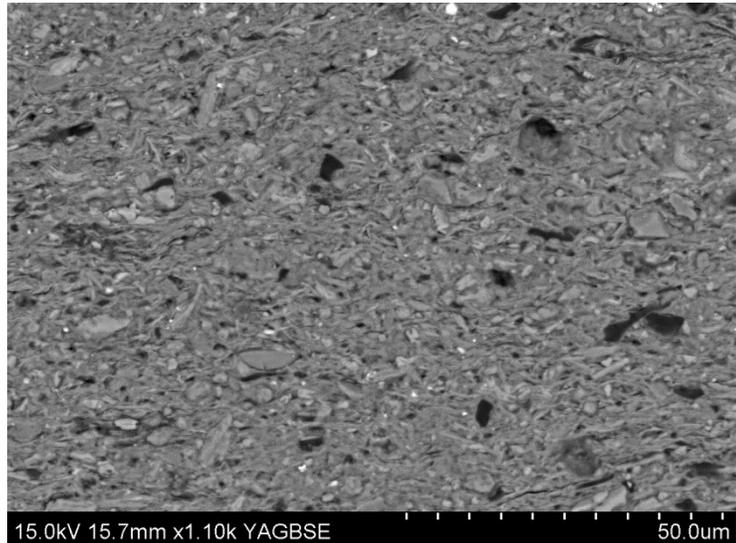
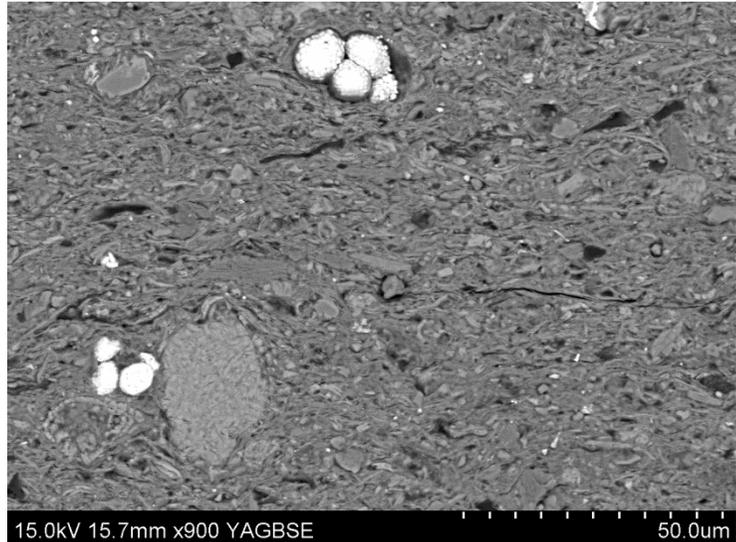
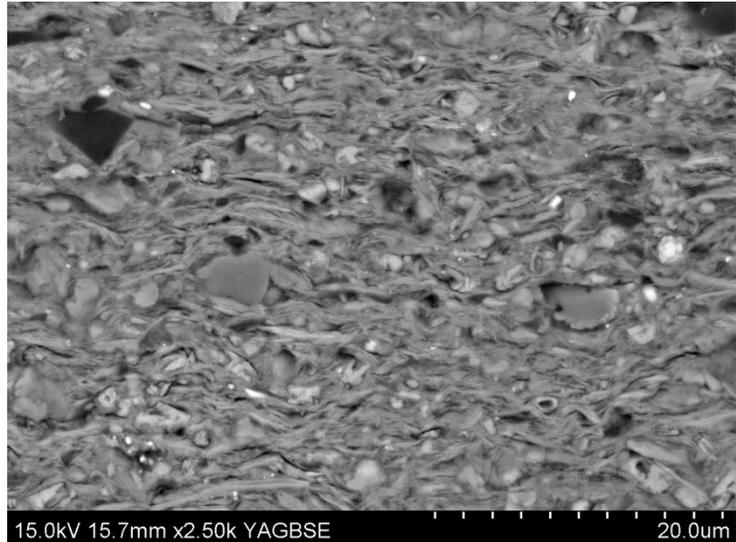
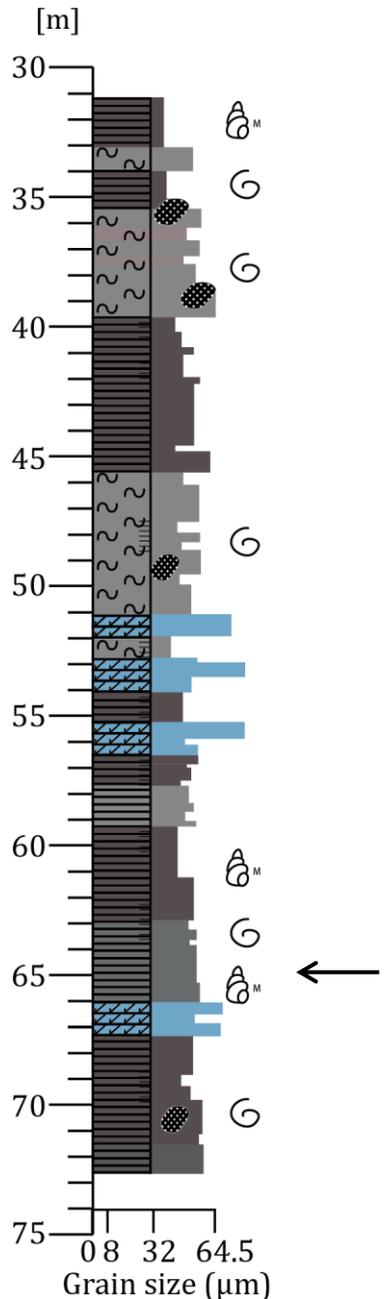
Thin section preparation: Wagner Petrographic Ltd

EB 64.50 m



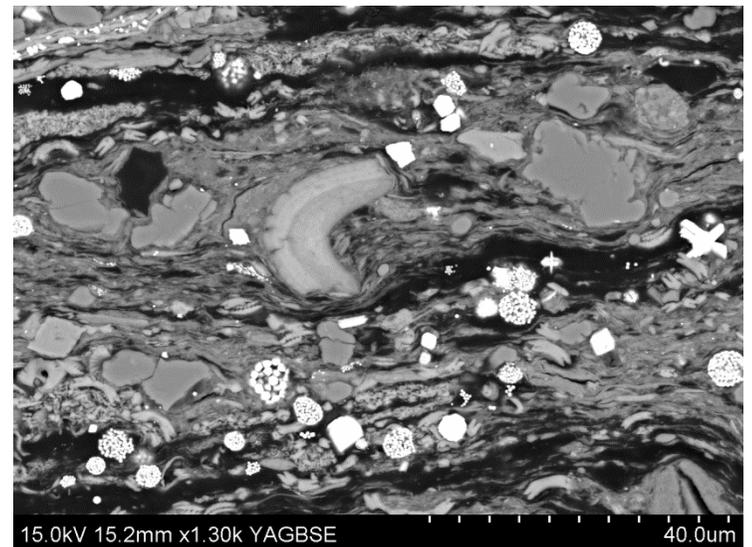
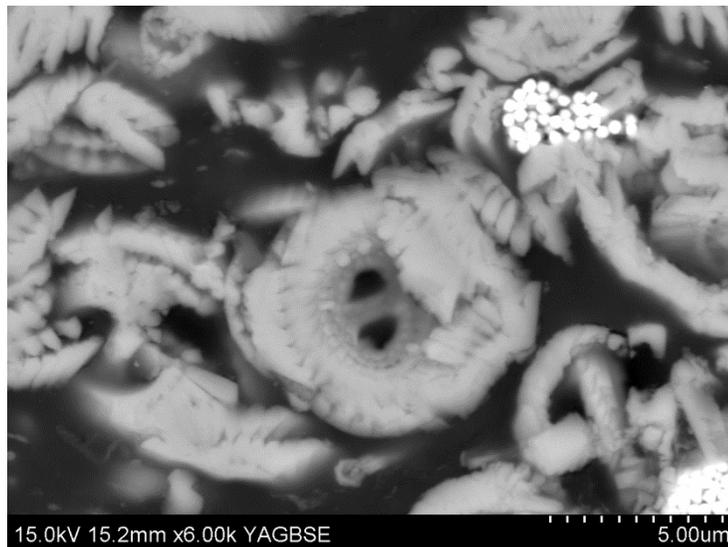
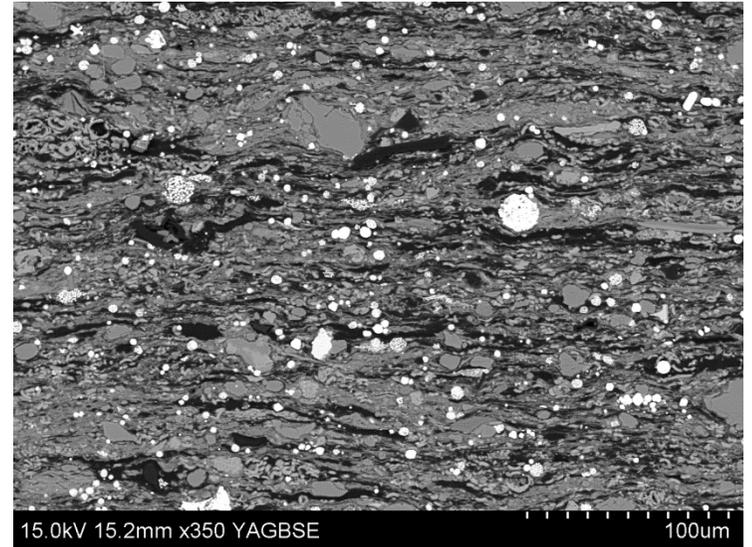
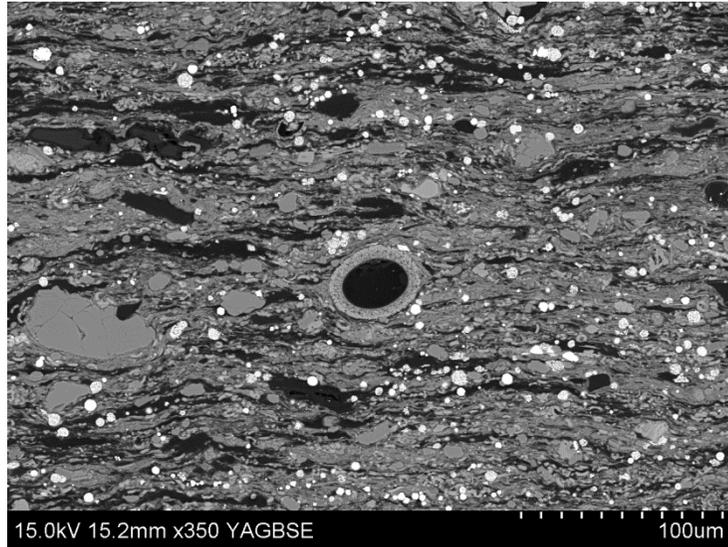
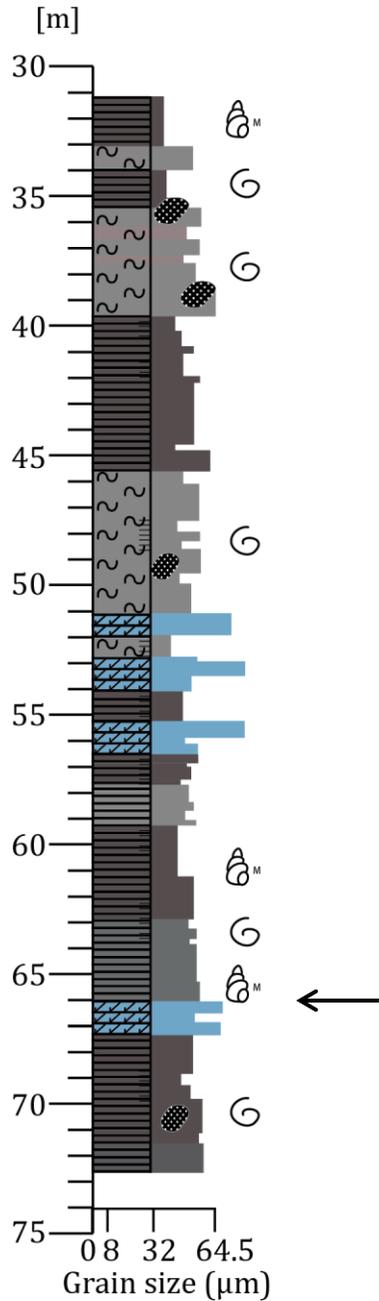
Thin section preparation: Wagner Petrographic Ltd

EB 65.00 m



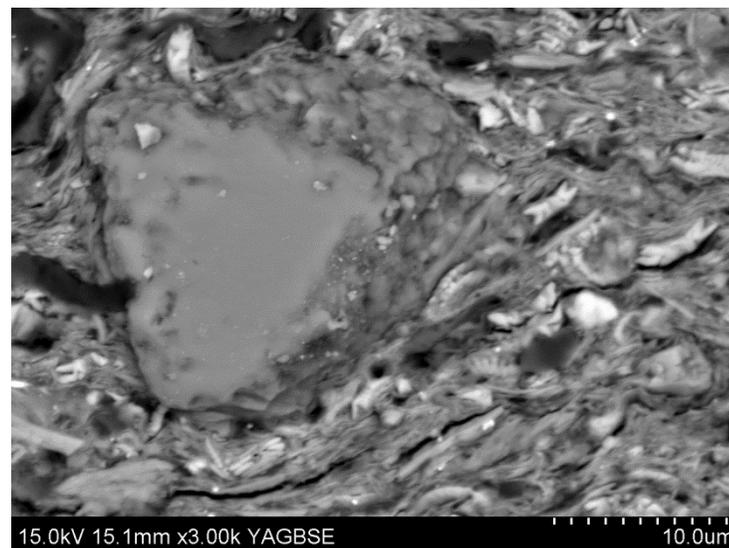
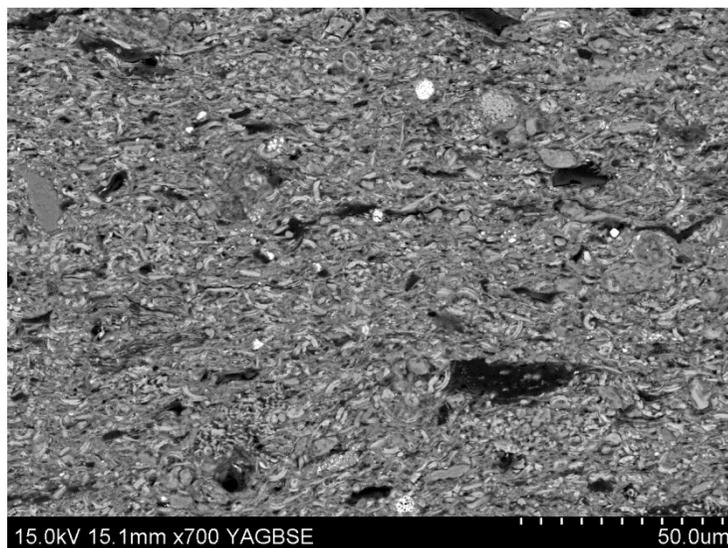
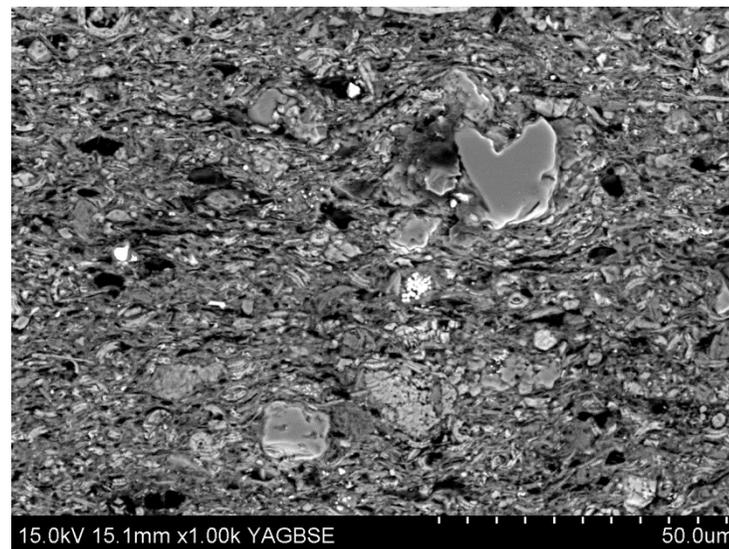
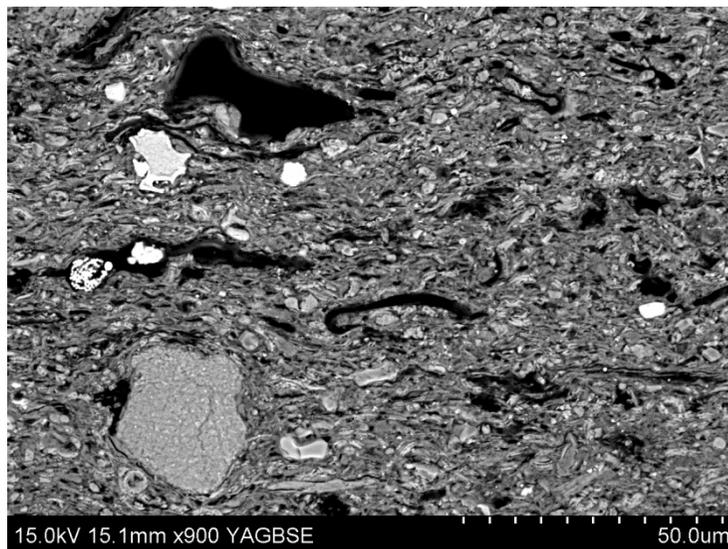
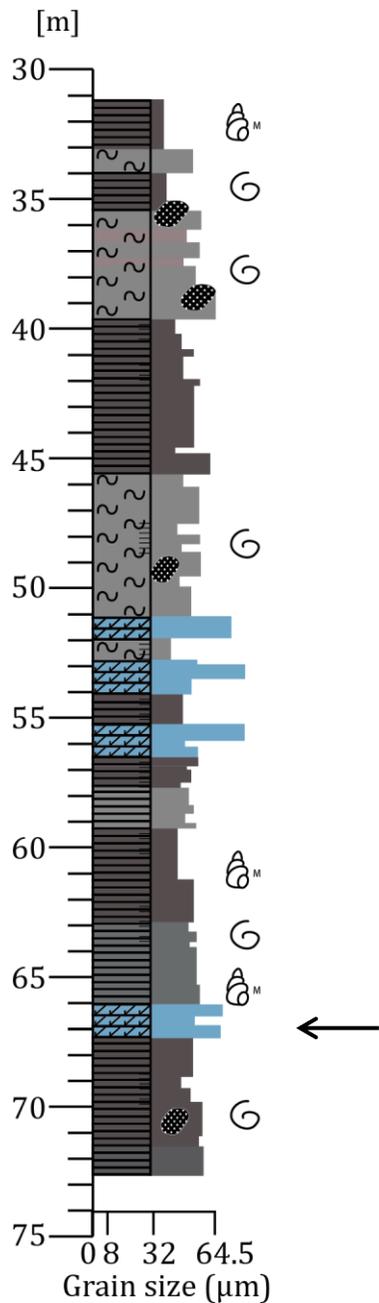
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EB 66.00 m



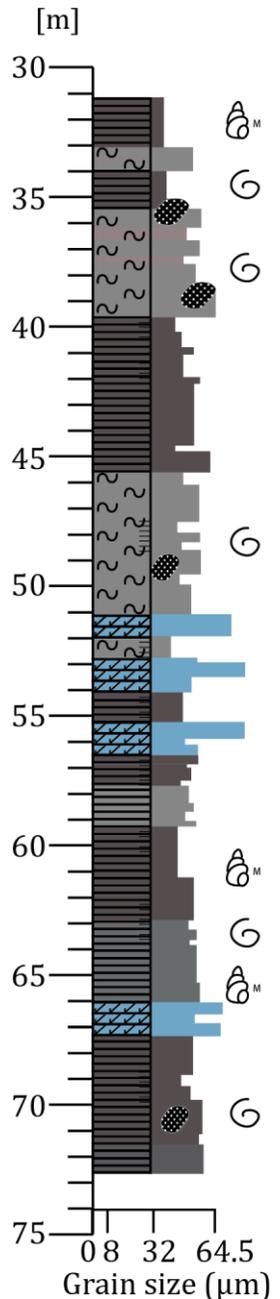
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EB 67.00 m



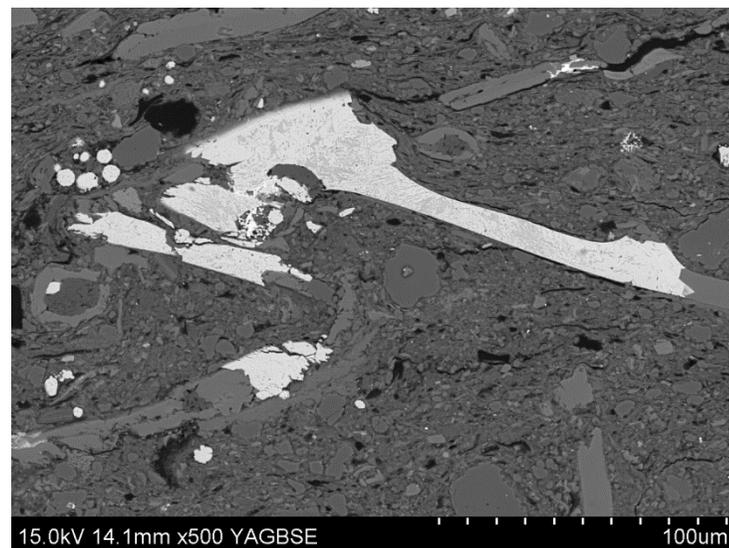
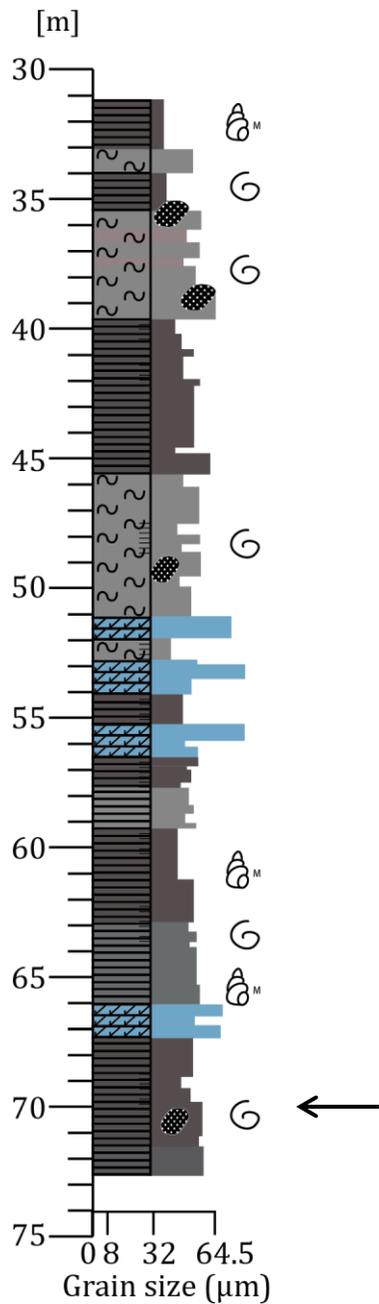
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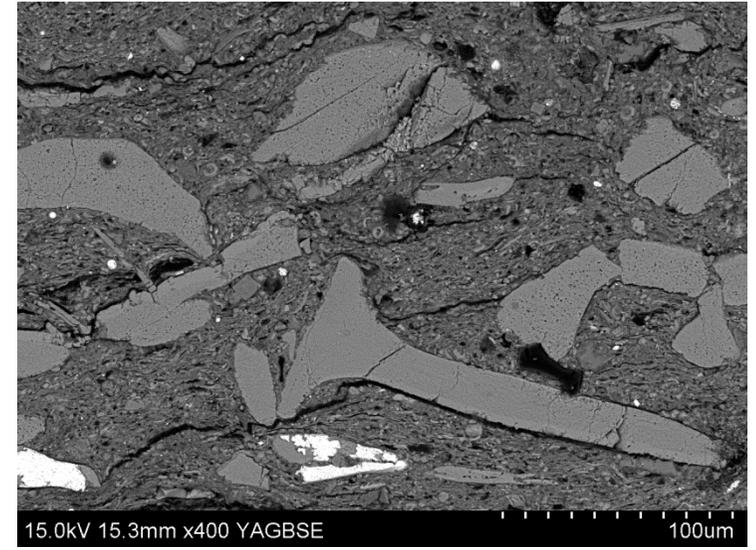
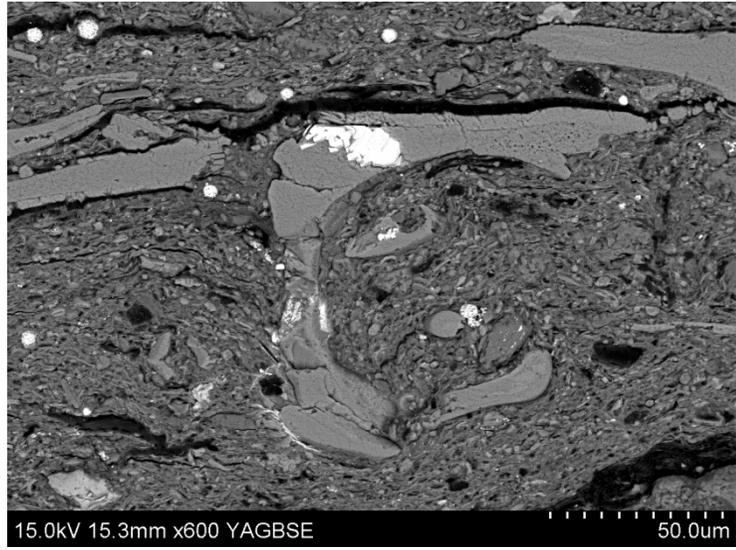
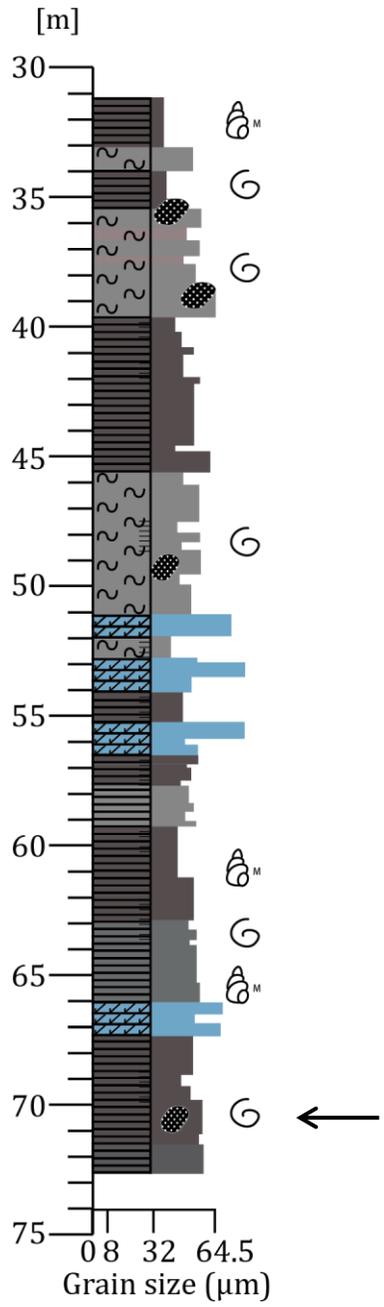
Thin section preparation: Durham University

EB 70.00 m



Thin section preparation: Wagner Petrographic Ltd/Durham University

EB 70.50 m



Thin section preparation: Durham University

EB 71.50 m

