

C. GEOLOGY

Field Note C6g. Enon Formation – Southwest ‘extension’

The Enon Formation deposits were mapped in 1987 (J Malan and J Theron), and the Soutpansvlakte Basin was defined, as shown in Figure 1. Field Note C6f showed the Enon Formation sediments in areas north and east of the basin, which the author called the ‘northeast extension’.

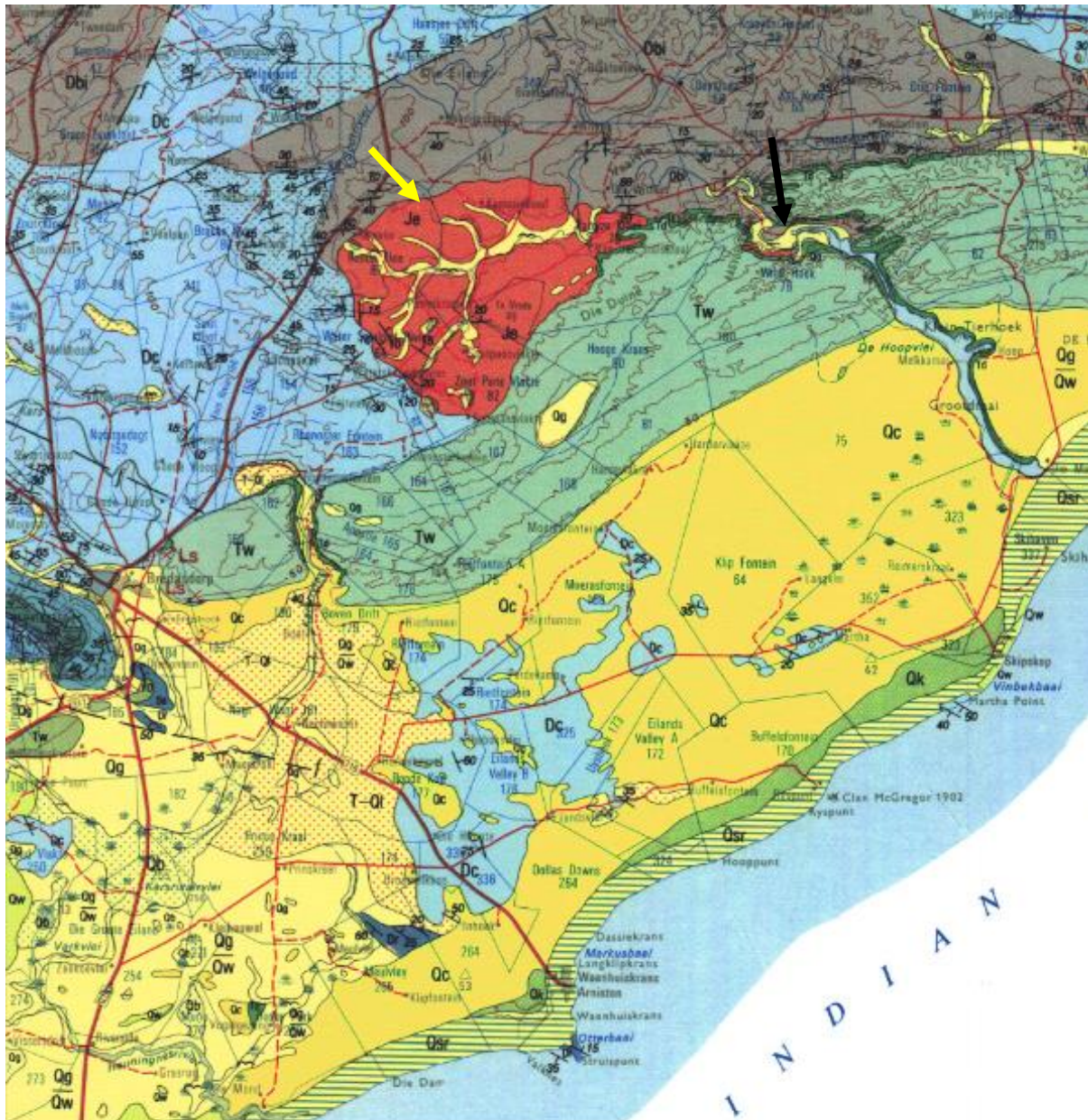


Figure 1. Geology map (3420, Riversdale, 1:250,000, 1993) showing the Soutpansvlakte Basin (yellow arrow). Black arrows point to other locations where Enon Formation deposits are located (in the Salt River Gorge).

This field note is about a possible 'southwest extension' of the Enon Formation, after pockets of deposits were found in a few locations west and south and west of the Soutpansvlakte Basin (Figure 2).



Figure 1. Satellite image showing the points where Enon Formation deposits were found: A – West Renoster Valley (Figures 2 to 4); B – Kars River Farm (Figures 5 to 7); C- valley next to the lime mine (Figures 8 and 9); D- trenches at the lime mine (Figures 10 to 12); E- along the railway north of Bredasdorp and F- along the entrance road into Bredasdorp (Figures 13 and 14); G – east of Bredasdorp; H- east of Bredasdorp and near the airfield SE of Bredasdorp (Figures 15 and 16). In locations A B and E, very large areas are covered with pebbles and boulders; in all other points, only limited quantities of clasts were found.



Figure 2. Satellite image of the West Renoster Valley. Arrow points to the Kars River.



Figure 3. The floor of the West Renoster Valley consists of Enon Formation deposits.



Figure 4. Enon Formation clasts on the floor of the West Renoster Valley.

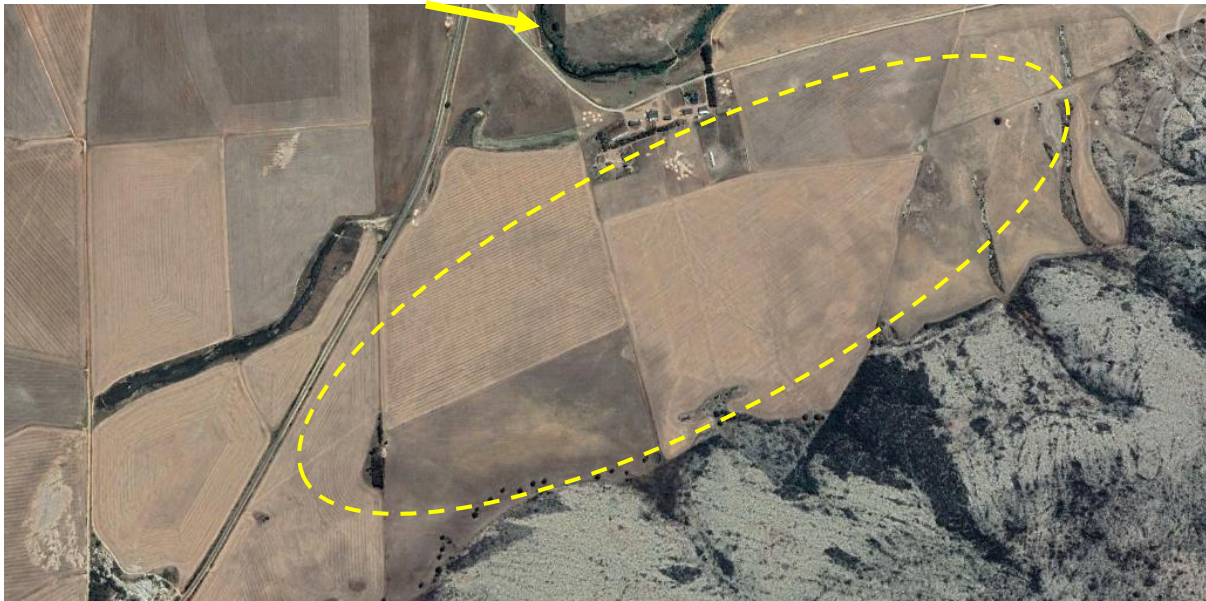


Figure 5. Satellite image of the area north of the Bredasdorp Hard Dunes. The ellipsoid indicates the area covered with Enon Formation deposits. Arrow points to the Kars River



Figure 6. Enon Formation deposits in the fields shown in Figure 5.



Figure 7. Enon Formation clasts (collected by farmers) on the margins of the fields shown above.



Figure 8. Satellite image of the area north of the Bredasdorp lime quarry. Arrow points to a valley containing Enon Formation sediments.



Figure 9. Enon Formation sediments in the valley shown in Figure 8.



Figure 10. Satellite image of the western part of the Bredasdorp lime quarry. Arrow points to the location where Enon Formation clasts were found.



Figure 11. Enon Formation rounded clasts found in the location, indicated in Figure 10.



Figure 12. Enon Formation clasts found in the location, indicated in Figure 10.



Figure 13. Satellite image of north-eastern Bredasdorp. Arrows points to locations where Enon Formation rounded clasts were found.



Figure 14. Enon Formation rounded pebbles along the main road into Bredasdorp, opposite the silo.



Figure 15. Satellite image of the area southeast of Bredasdorp. Arrows point to location where Enon Formation rounded clasts were found.



Figure 16. Enon Formation rounded clasts in a heap of calcrete chunks (collected by farmers), south of the airfield near Bredasdorp.

There are many more locations on the Bredasdorp Plain where pockets of Enon Formation clasts were found. Further investigation, to confirm whether these pockets are remnants are similar to those which characterise the Enon Formation in the Soutpansvlakte Basin, and in a basin south of Bredasdorp (Figure 17).

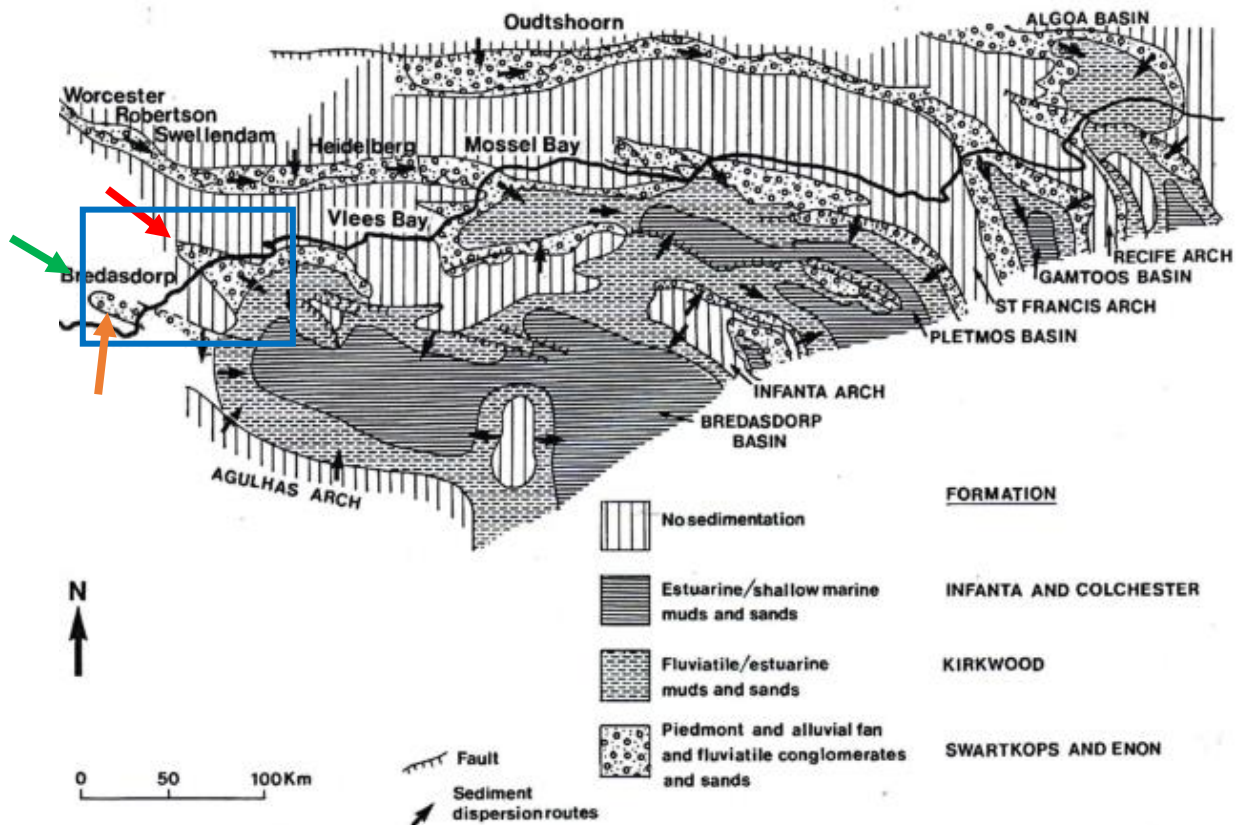


Figure 17. Paleogeography of the basins off the south coast of SA for the late Jurassic / early Cretaceous times. The blue box indicates the Study Area. The red arrow points to the Soutpansvlakte Basin; the green arrow points to another Enon basin or trough, in the south of the Bredasdorp Plain, between Arniston and Struis Bay. Orange arrow points to the locations of Enon Formation outcrops shown in Figure 18.

Source: Dingle et al, 1983. Mesozoic and Tertiary geology of Southern Africa.

It should be noted that outcrops of the Enon Formation have been mapped south and southwest of Soetendals Vlei, just outside the western boundary of the Study Area (Figure 18). They were discussed by MS Hodge in his MSc thesis.

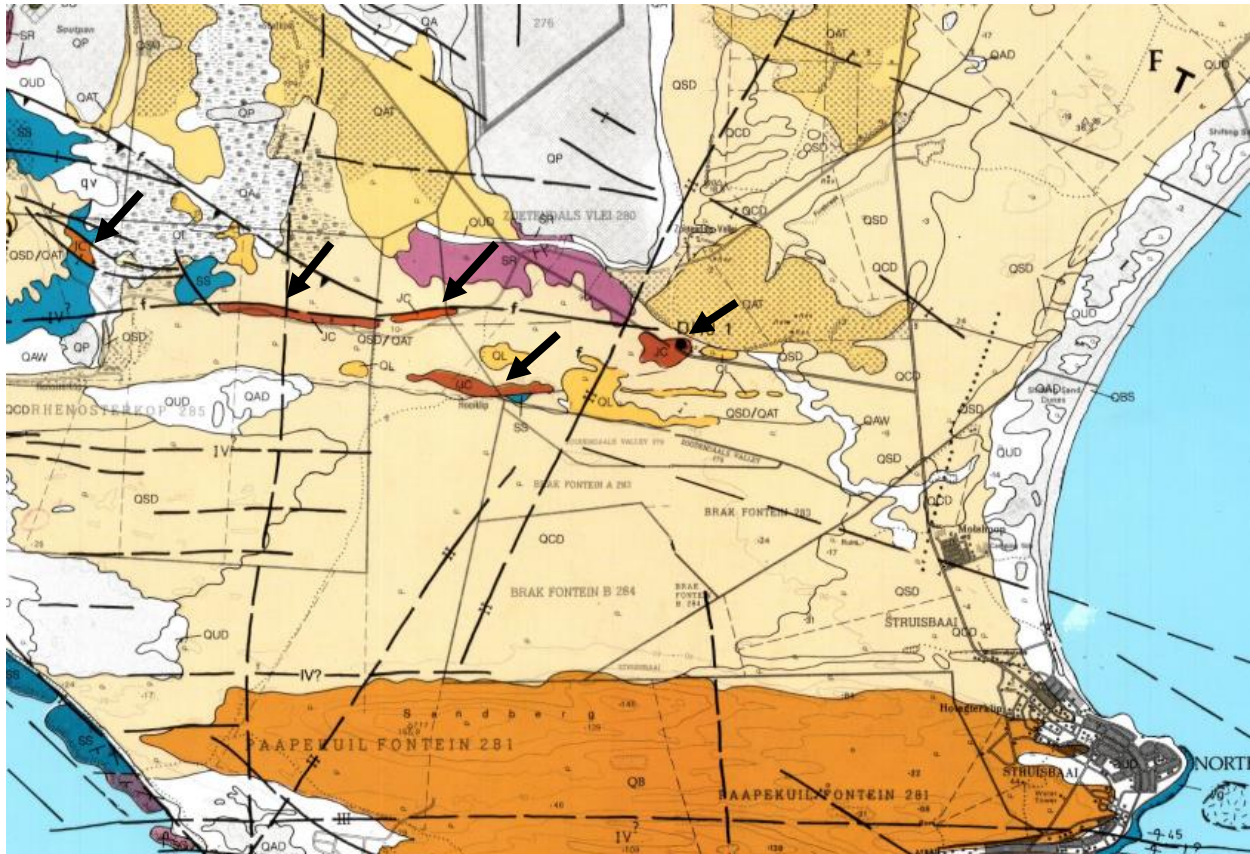


Figure 18. Geology map (MAG Andreoli, 1989) of the area north of Struis Bay. Arrows point to the Enon Formation outcrops. They appear to be part of the Jubilee Hill Basin (Figure 19).

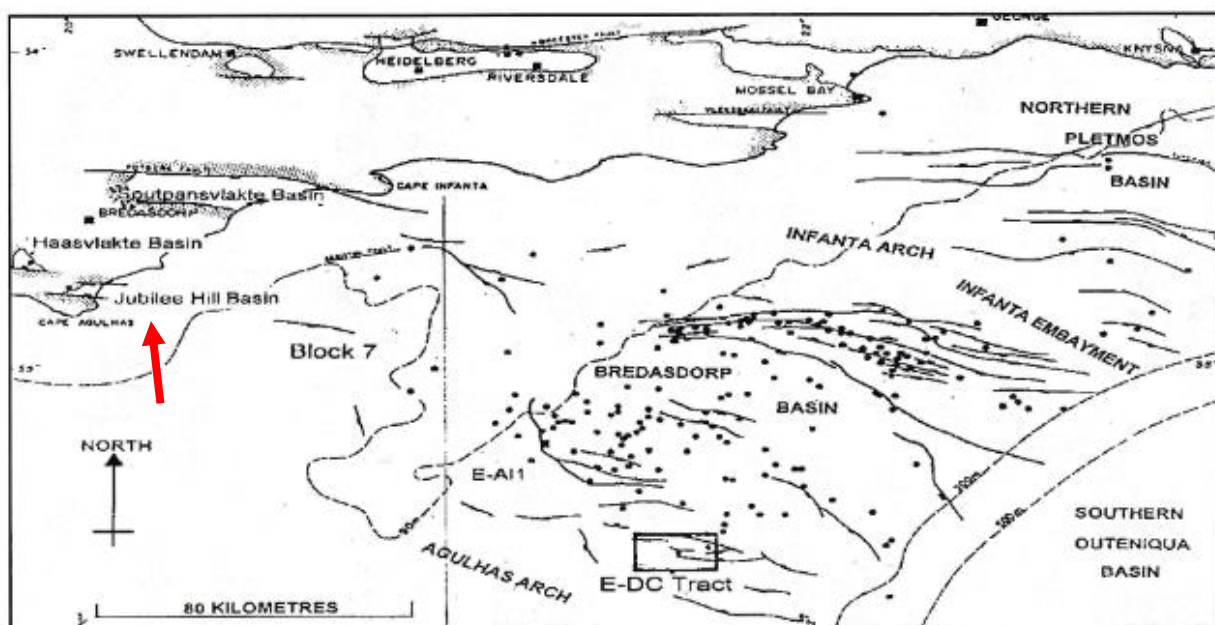


Figure 19. The Study Area offshore paleogeography. Arrow points to the Jubilee Hill Basin.
Source: J Malan and J Viljoen, Field Trip Guide, 2016.