

## N. DE HOOP VLEI GORGE

### Field note N6. Evidence of tectonics



**Vertical cliffs on the eastern bank of the de Hoop Vlei Gorge, in Tierhoek Coves.**

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The De Hoop Vlei Gorge is situated about 30 km east of Bredasdorp. It contains the De Hoop Vlei, which has no outlet to the sea. It is separated from the sea by a ~2.5 km wide field of shifting dunes (Figure 1).



**Figure 1. Satellite image of the De Hoop Vlei Gorge area.**

The widely accepted explanation for the formation of the De Hoop Vlei is, that the Salt River mouth was blocked by the dunes, which were driven westward by the onshore winds. This is a very possible scenario, as the river carries (and probably also carried in the past) very little water. The vlei is contained in a gorge, about 13 km long, parts of which have probably been shaped by tectonic activity.

This Field Note is about evidence of tectonics along the De Hoop Vlei Gorge, which may indicate that the gorge was formed as a result of tectonic activity (faulting) or by an earthquake, or both. Vertical and nearly vertical cliffs are present on either side of the gorge and in the ravines, which ‘flow’ into the gorge (see Chapter E, dry valleys). Blocks of rocks, cut along straight lines, are also indicators of tectonic activity. Examples are presented in Figures 2 to 13.





**Figure 2. Satellite image of the De Hoop Vlei Gorge. The dashed lines indicate vertical or nearly vertical cliffs along nearly straight lines.**



**Figure 3. Vertical cliffs along the northern section of the De Hoop Vlei Gorge.**



Figure 4. Topography map of a section of the northern part of the De Hoop Vlei Gorge, showing steep cliffs on either side of the gorge, along nearly straight lines.

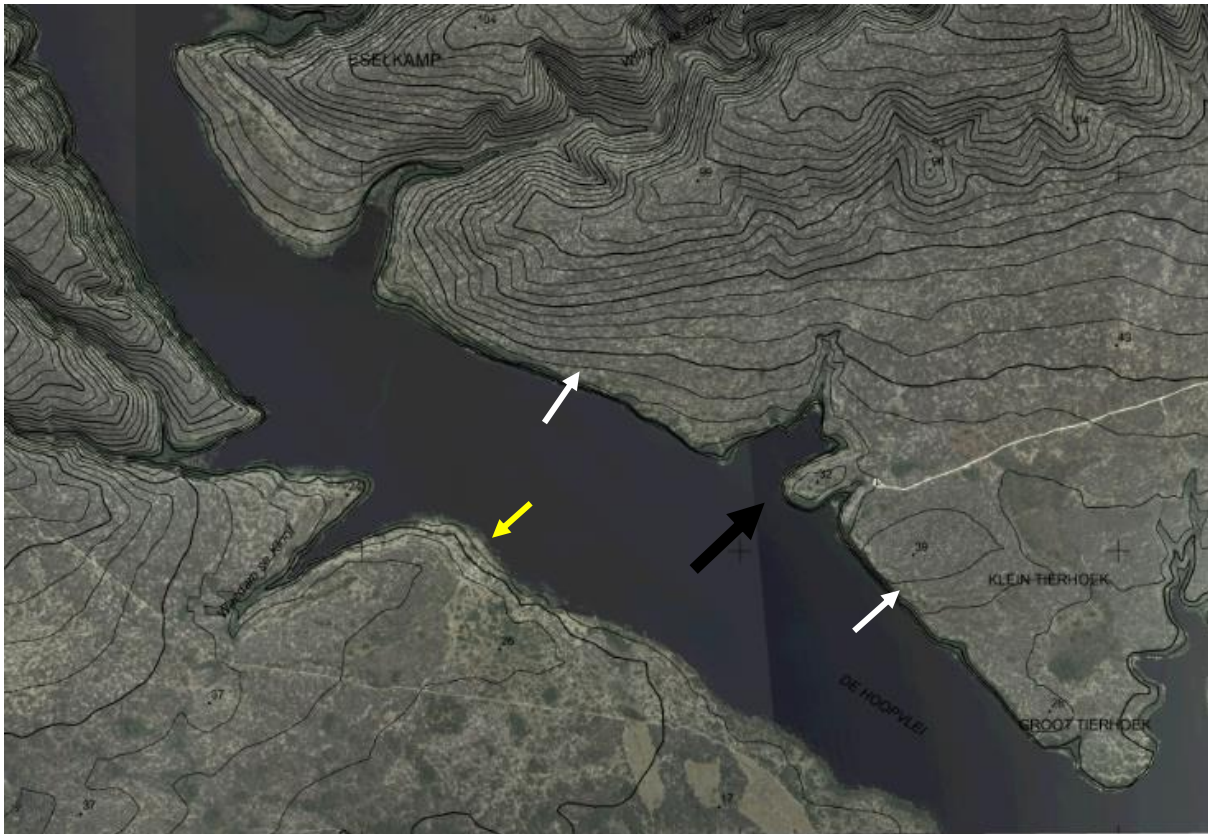




**Figure 5. View on a vertical cliff (arrow) at the outlet of the Jaftasfontein se Kloof, and the huge blocks which rolled into the vlei.**



**Figure 6. Closer look at the fallen blocks shown in Figure 5.**



**Figure 7. Topography map of a section of the middle part of the De Hoop Vlei Gorge, showing steep cliffs on either side of the gorge, along nearly straight lines (white arrows). From the outlet of the Wasdam se Kloof (yellow arrow) southward the west side of the gorge is of low relief. Black arrow points to Tierhoek Coves (name given by the author).**



**Figure 8. Vertical cliffs along the east bank of the middle part of the De Hoop Vlei Gorge.**





**Figure 9. Vertical cliffs at the North Tierhoek Cove, in the middle part of the gorge.**



**Figure 10. Vertical cliffs north of the North Tierhoek Cove.**





Figure 11. Topography map of a section of the southern part of the De Hoop Vlei Gorge, showing step cliffs on the east side of the gorge, along nearly straight lines (arrows).

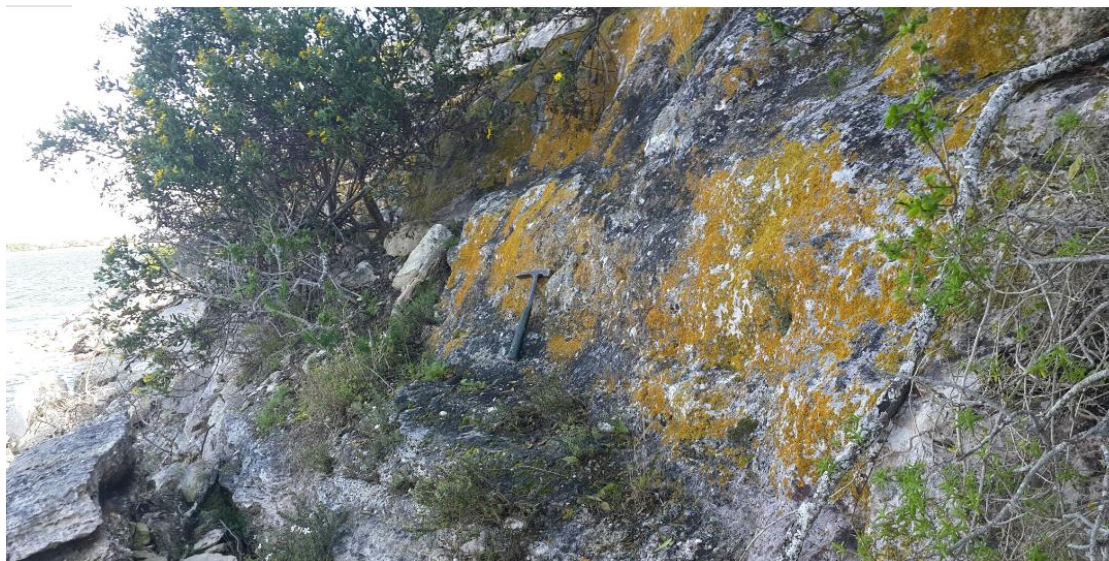


Figure 12. Nearly vertical cliff on the east bank of section of the southern part of the De Hoop Vlei Gorge.





**Figure 13. Cliffs on the east bank of the southern part of the De Hoop Vlei Gorge.**

The above evidence of tectonic activity, together with evidence of tectonics from other parts of the Study Area, are discussed in Chapter W, as the forces which may have formed the De Hoop Vlei Gorge and other features in the Study Area.