3 Case Example

A large area around the villages Midlum and Dorum in Northern Germany is prospective to find heavy mineral placers. The general ore-presence was discovered locally by chance during a drilling campaign for groundwater. The ore minerals are consisting mainly of ilmenite and rutile in varying concentrations within a 4 to 8 m thick sand layer in a depth of about 50 m.

In order to prove the economic feasibility for exploitation of these mineral resources further detailed geophysical explorations were carried out. In Figure 4 the results of a helicopter-borne seismo-electromagnetic ORESCAN survey within a part of the concession area are represented.

From data acquisition and data processing the distribution of the seismo-EM spectral attribute OCP (Ore Concentration Potential) is obtained.

The geophysical measuring result allows the following threefold geological conclusions:

- Threshold-exceeding OCP-values are verifying that the sensitivity of the system was excellent to detect the ore occurrence, even though only semi-conductive ore minerals are present
- A continuous level of increased OCP indicates and maps the field extent of the heavy mineral ore deposit
- Single OCP anomaly peaks within the ore deposit field are indicating local zones of increased ore accumulations

Figure 3: Continously measurements of time-varying component of natural EM field by slow and low helicopter flighs along survey lines

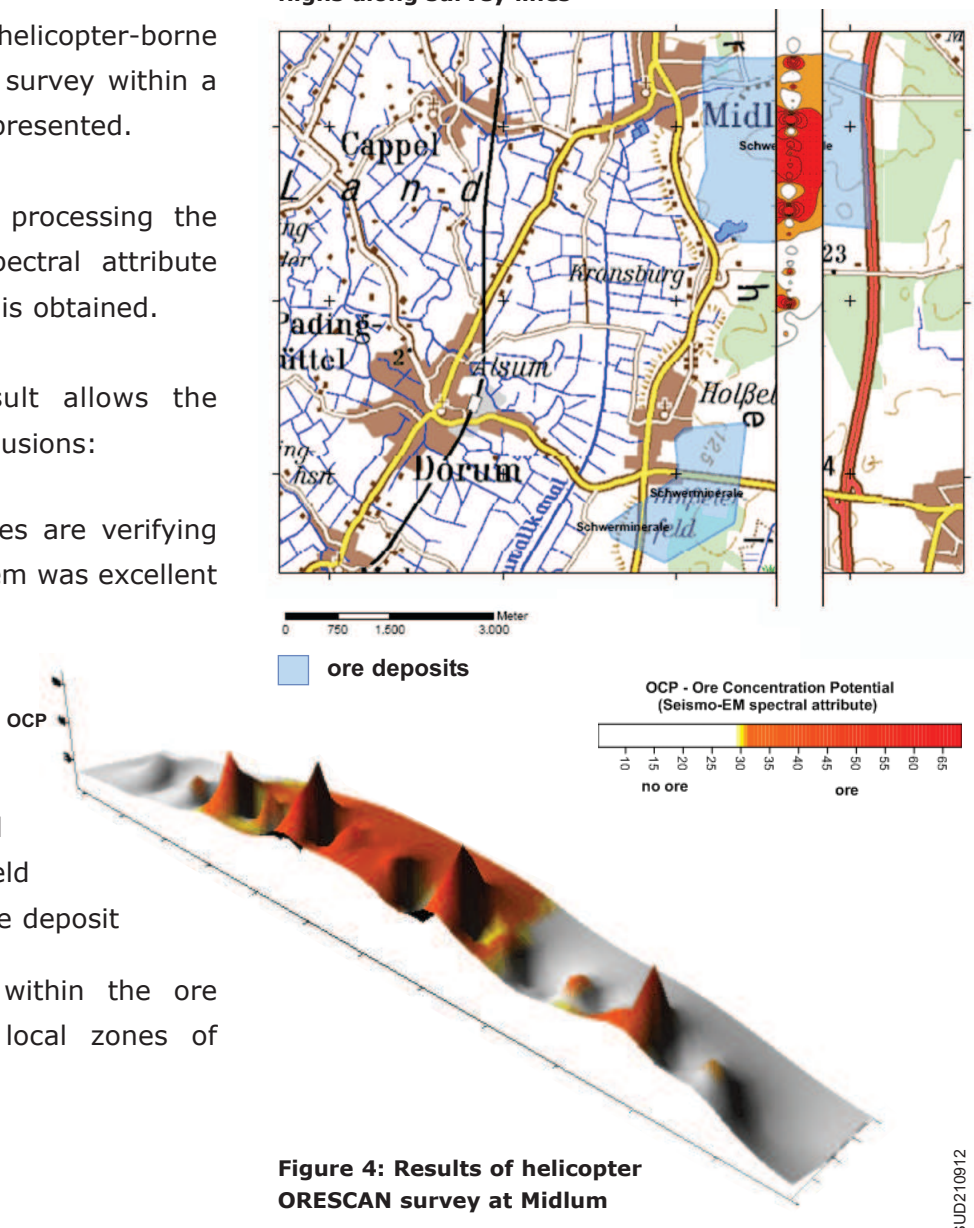

Figure 4: Results of helicopter ORESCAN survey at Midlum

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