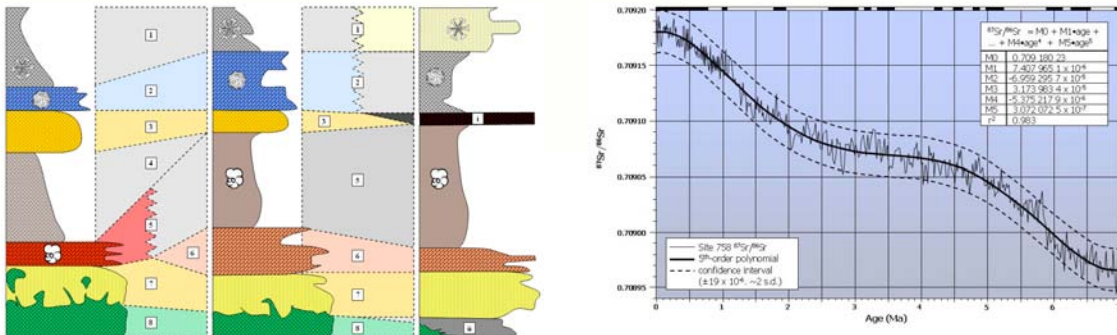


Petroleum and gas reservoirs are known to be found in confined geological strata. In order to successfully identify potential host rocks and determine their vertical and lateral continuity, a high chronostratigraphic resolution of the sedimentary sequences is mandatory including the correlation of strata over a multi-well area.

Seismic and geophysical well log data may be highly misleading, as their information is based on the pure lithological properties of the ambient rocks (sandstone, siltstone, mudstone, carbonates, etc.). Lithologic similar rocks must not necessarily be chronologic in origin, as their properties are additionally controlled by basin geometry and subsidence (facies and thickness changes) than by time only.

High resolution chronostratigraphy may be obtained by either biostratigraphy, a proper sequence stratigraphic analysis or by  $^{87}\text{Sr}/^{86}\text{Sr}$  seawater stratigraphy. With one of these powerful tools in hand petroleum explorationists are enabled to more accurately determine drilling targets and potential reservoirs in exploration. C



These two images demonstrate how crucial biostratigraphy can be as part of a basin/reservoir model or for multi-well core interpretations and correlations.

In the first image, correlation is based on lithological properties. However, as facies patterns are known to change within a depositional area, dependent on basin geometries and subsidence, this method (used e.g. by correlating wireline logs) may lead to highly diachronous results and thus misleading interpretations in terms of reservoir rock localisation.

This is highlighted in the second image where fossil data have been considered when erecting the stratigraphic framework. It is demonstrated that similar lithological properties do not match chronostratigraphical conditions.

For Cenozoic sediments void of fossils, the Sr-seawater curve may apply for stratigraphic purposes.

## **Corex offer the following services for this purpose:**

- Geological mapping
- Core logging
- Palaeontological analyses
- Stable Isotope Stratigraphy

