MIGRIS

FINDING MORE WITH LESS

PGS

North Sea Charge

Migris offers a hydrocarbon maturity, generation and hydrocarbon migration modelling study for the Norwegian North Sea.

A MULTI-CLIENT STUDY

DELIVERABLES

A report will be delivered in digital format (PDF / Microsoft Word/PowerPoint documents and 3D animations).

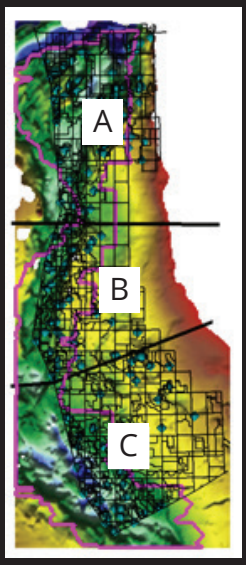
The final report details the methodology used for each of the four work tasks. In addition to the final report, important results are delivered as grid files.

The database used in the project will not be included as a deliverable. The seismic data and interpretations can be purchased separately from PGS. The geochemical data used in the project and/or the full Migri model (depth domain) can also be purchased separately from Migris.

THE RESULTS FROM PHASE 1 ARE NOW OFFERED TO THE INDUSTRY FOR PURCHASE:

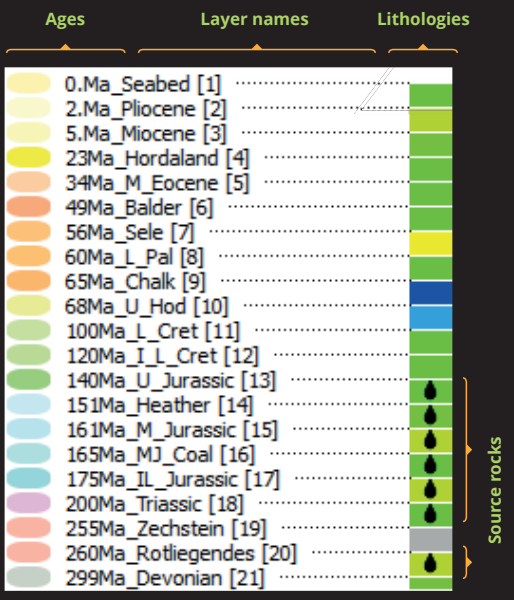
MIGRIS.NO/STUDIES-AND-SERVICES

STUDY AREA



Study area with locations of well data. Phase 1 reporting shows results for the Norwegian side only (the entire study area consists of areas A, B, and C), including a 10 km zone along the borders. (Violet outline = Mega Survey interpretation of layer)

LAYER MODEL

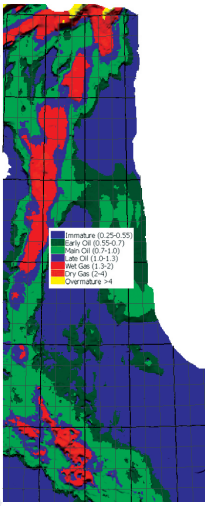


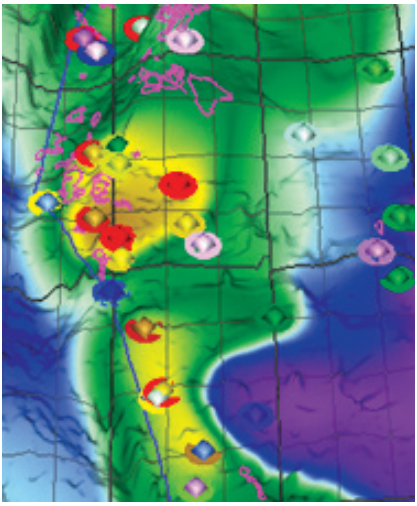
NORTH SEA CHARGE – PHASE 1

Migri is a “next generation 3D hydrocarbon migration simulator” which enables the evaluations of multiple alternative scenarios and sensitivities. Burial, maturity, generation and migration are dynamically modelled through time in each scenario.

In this study a probabilistic approach has been applied to the description of the source rock model (seven source rock units of Jurassic to Permian age), to the thermal history modelling, to the hydrocarbon generation modelling and to the migration modelling. The simulations are based on a 21 layer basin model constructed in the project.

A database of 153 wells has been used for constructing the source rock model and in calibrating the maturity model. The hydrocarbon migration models are calibrated to existing discoveries in the area, and a “base case” model results. Sensitivities to key uncertainties are investigated using Monte Carlo simulation approaches and alternative migration and filling scenarios are shown.



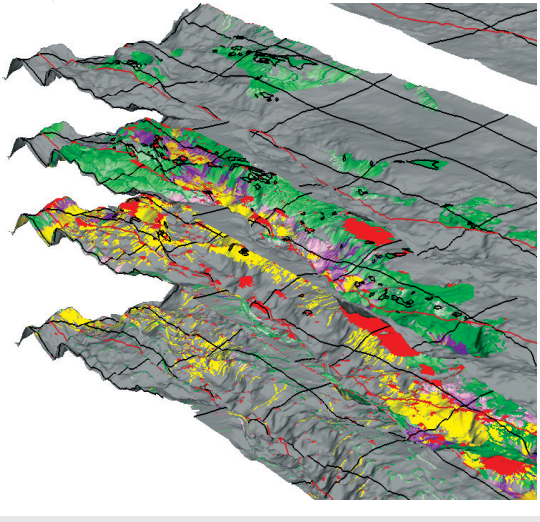


Modelled maturity windows (left), TOC and HI source rock properties (right) are important results from the project.

The results from this project will be useful in assessing where to explore for prospective areas and in helping to understand the hydrocarbon charge systems of the study area. The results can also be used as input to detailed modelling in a licensed area or future prospect evaluation in combination with your own data. Migris is the operator of this project and PGS has provided seismic interpretations based on MegaSurvey and Digital Atlas TWT maps.

The contents of the project include:

1) Geological model building and calibration data compilation
2) Calibration of hydrocarbon maturities and creation of generation histories
3) Calibration of a migration scenario that can explain fields and discoveries
4) Uncertainty investigations with elaboration of alternative migration scenarios



Migration flowrates (green = oil, yellow/red = gas, violet = mixed phase) are important results from the project.

Multi-client studies

- Digital maps and of hydrocarbon maturity, oil and gas generation histories and migration modelling results
- Investigations of sensitivities and uncertainties (e.g. P10-P90 results) using stochastic methods
- Useful in assessing where to explore for prospective areas and understanding the petroleum charge systems of the study area
- Can be used as framework for our in-depth Single Client Studies using high resolution local maps

Single-client studies

- Our geoscientists perform an in-depth, high resolution study of a licensed area, prospect, basin or play
- Client normally provides additional data, such as maps, well data and faults
- Describe exploration potential and risk using the clients exploration model, ideas and concepts

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