The Petrophysics of Tight Gas Sandstones (PETGAS) project has been hugely successful in generating a high quality database of the petrophysical properties of tight gas sandstones and using bespoke software to visualize the results to increase understanding of key properties.

The project has led to new understanding of key controls on the petrophysical properties of tight gas sandstones and created a new data visualization/software tool PETMiner.

**PREVIOUS SPONSORS**

BG, BP, EBN, GDF Suez, San Leon Energy (formerly Aurelian Oil and Gas), Shell and Wintershall.

**DELIVERABLES**

**WP 1**: Extending the Rock Core Analysis PETGAS database

The rock core analysis PETGAS database will be continually updated throughout the project with 15 samples per sponsor analysed. Updates to the PETGAS website and PETMiner software will be provided every 3 months.

**WP 2**: Long-term Special Core Analysis (SCAL) experiments

Obtaining high quality SCAL data for tight gas sandstones is extremely time-consuming. Indeed, many experiments conducted in Phase II took nearly the full 3 years to complete, which has limited the amount of SCAL data we have collected. We therefore propose to continue SCAL measurements on samples gathered during Phase I & II of PETGAS.
KNOWLEDGE TRANSFER
Knowledge transfer will take place using the same methods as for PETGAS Phases I & II.

- 6 monthly sponsor meetings.
- A range of reports will be provided aimed at different audiences within the sponsor organisations.
- The searchable website will be maintained and enhanced.
- Data will be uploaded to the PETMiner software and sponsors will be provided with regularly updated version of the software.
- The academic team will make regular presentations of the results to individual sponsors.

WP 3: Data Visualisation, data mining and integration with wire-line logs

The PETMiner software has already proven to provide a step-change for the visualisation and mining petrophysical property analysis data. We propose to increase the functionality of PETMiner in several ways including development of an image analysis plugin, on-the-fly database editing and improved integration with wire-line log data. We will investigate various the use of various machine learning techniques (e.g. clustering, Bayesian inference, deep learning etc.) to predict property values.

WP 4: Data analysis

We propose to continue analysis of data collected during PETGAS Phases I & II and integrate the results with other datasets in the PETMiner environment.

COSTS

Phase III of PETGAS costs £150,000 per sponsor and runs until the end of 2019.

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