

# LEAP ENERGY

## CARBONATE EXPERTISE

### EXPERTISE IN CARBONATE RESERVOIR ENGINEERING, GEOSCIENCE, WELLS AND PRODUCTION TECHNOLOGY

LEAP Energy is a Global Petroleum Consulting company with offices in Malaysia, Australia and Romania and representative offices in Oman, India and Indonesia.

LEAP Energy has developed workflows tailored to our client's needs. We offer our clients highly developed skills, technology and capability in the areas of geoscience, reservoir engineering, wells and completions. Our expertise is related to carbonate reservoirs at all stages, including exploration, development and production. We bring creative solutions to the table and we understand the importance of meeting deadlines.

#### PROJECTS

Over the years we have accumulated a wealth of carbonate project experience. We have delivered specialist project solutions to clients worldwide. Our multi-discipline experts have worked on approximately twenty carbonate projects in five countries, in a variety of geological settings. Project challenges and issues include karst, fractured reservoirs, reservoir compaction, multi-field aquifer modelling, water influx, and high rate well design.

#### GEOSCIENCE

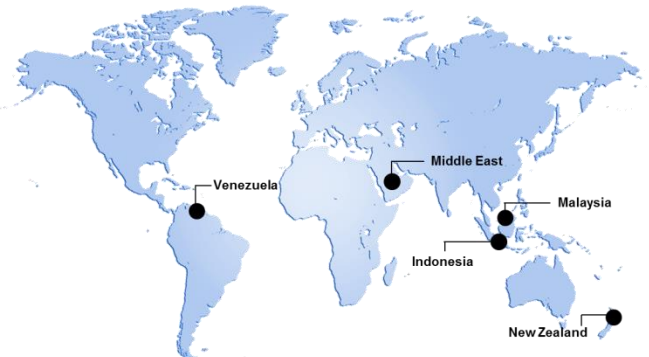
- Carbonate seismic facies characterization
- Karst mapping and modeling
- Seismic inversion
- Reservoir property assessment (in-house analogue database)
- Carbonate reservoir characterization
- Fracture characterisation and modeling
- 3D carbonate reservoir modeling
- Effective properties and upscaling advice

#### RESERVOIR ENGINEERING

- Carbonate well test analysis
- 3D dynamic modeling
- Incorporation of karst into dynamic models
- Automated history matching
- Reservoir and fluid property benchmarking (in-house analogue database)
- Experimental design

#### WELLS AND PRODUCTION TECHNOLOGY

- Well design
- Completion design
- Stimulation design
- Production optimisation



#### CLIENTS

We have provided a number of Clients with carbonate-specific advice and consultancy include: Shell, Talisman, Mubadala, PEXCO/Tately, Hess, and Sinopec.

FOR MORE INFORMATION PLEASE CONTACT US AT

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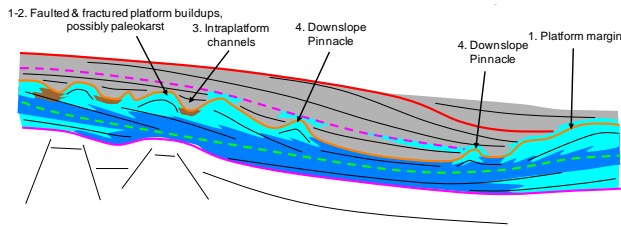
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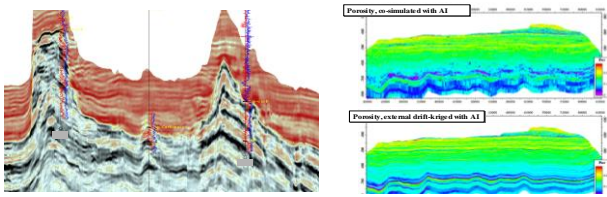
## EXPERTISE IN CARBONATE RESERVOIRS - EXPLORATION & DEVELOPMENT

### PLAY TYPE RECOGNITION AND PROSPECT MATURATION



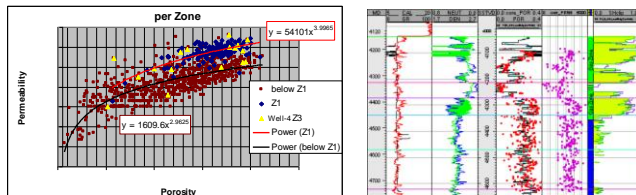
- Understand key controls on carbonate growth and reservoir quality based on field data complemented by appropriate analogues
- Regional mapping, lead-to-prospect high-grading, volumetrics and nFDP

### SEISMIC INTERPRETATION AND CARBONATE GEOMODELLING



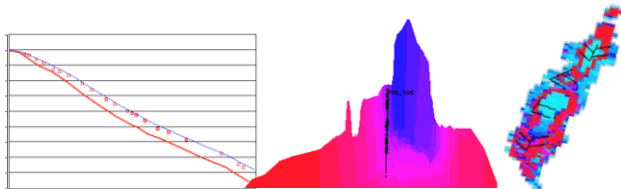
- Integrated seismic-geologic workflows

### RESERVOIR PROPERTIES, DIAGENESIS, FRACTURES AND KARST



- Integration of core and well-log data
- Upscaling of well properties to reservoir and field scale
- Understanding reservoir diagenetic and fracture patterns and their impact on reservoir behaviour

### DYNAMIC SIMULATION AND FORECASTING



- Development concept screening & optimization
- History matching and production forecasting
- Aquifer modelling

### OPEN DOMAIN PUBLICATIONS

Alessio, L.D., Coca, S., Bourdon, L.M., 2006. Development of Multiphase Karstification in Central Luconia Carbonates – Imaging and Modelling the Unpredictable, AAPG International Conference and Exhibition, Perth, Australia.

Alessio, L.D., Coca, S., Bourdon, L.M., 2005. Experimental Design as a Framework for Multiple Realisation History Matching: F6 Further Development Studies. SPE paper 93164.

Bourdon, L.M., Alessio, L.D., Coca, S., 2004. Karst Identification and Impact on Development Plan, SPE paper 88520.

Alessio, L.D., Macarthur, J., Coca, S., Bourdon, L.M. and Everts, A.J.W., 2004. 3D-All-The-Way™ in F6 further development. SPE paper 87014.

Zampetti, V., Schlager, W., Van Konijnenburg, J.H., & Everts, A.J.W., 2004A. 3D seismic characterisation of submarine landslides on a Miocene carbonate platform (Luconia Province, Malaysia). J. Sediment. Research 74 (6): 817 – 830.

Zampetti, V., Schlager, W., Van Konijnenburg, J.H., & Everts, A.J.W., 2004B. Architecture and growth history of a Miocene carbonate platform from 3D seismic reflection data; Luconia province, offshore Sarawak, Malaysia. Mar. Pet. Geol. vol. 21 (5): 517-534

