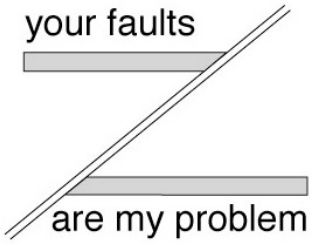

NewTec

geo-consultancy

NewTec

NewTec International BV., is specialized in geological advice and training for exploration and development of hydrocarbons.

NewTec services

NewTec offers professional services in the following fields:
Seismic interpretation of complex and unusual structures.
Geomechanical analysis and advice (well planning; hydro-fracturing).
Fractured reservoir analysis and development advice.
Fault and top seal analysis.
Technical audits of field development planning, geological projects and operations.
Geological field studies, including static geological reservoir modeling and dynamic (fluid flow) modeling.

Alliances with geological and geophysical service companies and with the Dutch geological service (TNO/NITG) allows a broad range of services and modeling capabilities.

Proven NewTec R&D results

NewTec has successfully applied the results of research in the fields of structural geology and geo-mechanics in the **prediction of natural fracture systems**:

- Prediction of location and orientation of open fractures in reservoirs (Algeria, Netherlands North sea.
- Prediction of location, orientation and maximum depth of open fractures in a granite basement reservoir (Yemen). This is a unique, NewTec proprietary technique.

NewTec has a vast experience in fault sealing processes and a long history of proven successful **prediction of sealing fault location and orientation**.

- Prediction of sealing faults in sandstone reservoirs by clay smear.
- Accurate prediction of fault seals in sandstone reservoirs by cataclasis. This is a unique, NewTec proprietary technique (**Fault reactivation and fault seal prediction tool**).

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NewTec Training

NewTec offers courses in structural geology at all levels (entry level to advanced).
Topics include: geo-mechanics, fault sealing, fracture systems, poly-phase deformation.
Clients may request special topics of specific relevance to current problems.
NewTec courses have been presented in Algeria, Angola, Azerbayan, Colombia, Iran, Kuwait, Libya, Netherlands, Nigeria, Mexico, Saudi Arabia and Venezuela.
Most locations have had multiple courses, requests for follow-up training is ongoing.

Examples of NewTec projects

Azerbayan, Salyan Oil Co. (2002): Development of structural models for two heavily faulted oil and gas fields, complicated by high pressure mud volcanism. The model was used to develop the seismically un-mappable northern field area. Successful drilling proved the predictive value of the model.

Algeria, SonaHess (2004): Structural model of the El Gassi oil field formed the basis for out step appraisal drilling and the discovery of an additional significant STOIIP. Proven successful prediction of location and orientation of open fractures and magnitude and orientation of in-situ stresses.

Shell Europe Exploration (2005): Seismic interpretation and structural geological advice in fold-and-thrust belt exploration.

Azerbayan, Shirvan Oil Co. (2005): Staff training, geological advice and interpretation guidelines for Shirvan Oil staff. Structural model development.

Algeria, Gaz de France (2005): Seismic interpretation and structural model development on field scale and on basin scale. Complex poly-phase deformation of faulted and fractured reservoirs.

Yemen, Dove Energy (2006 - 2007): Fracture prediction in a granitic basement reservoir, including exploration advice.

Netherlands, Gaz de France (2007): Geo-mechanical model development in support of exploration and field development. A new technique to predict fault sealing in sandstone reservoirs without soft clay layers (no clay-smear) has successfully been tested.

Example of a long lasting NewTec model

Maleisia, Shell & Petronas: was considered to be an unsolvable complex case. The 1981 Geo-mechanical model of the giant South Furious oil field, still serves as the basis for field development. The published story received the Shell Gold Award for best publication in 1993.

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