

N517: Well Log Sequence Stratigraphy for Exploration and Production

Instructor(s): Vitor Abreu

Format and Duration

Classroom - 2 Days

Virtual - 4 Sessions

Summary

Sequence Stratigraphy is a method developed to support geoscientists in the geologic interpretation of subsurface data, with the objective of predicting and mapping play elements' (reservoir, source/charge, seal) presence and quality before drilling. The method can be applied to cores and well logs in all depositional environments. This course will review the basic terminology and definition of surfaces, systems tracts, sequence sets, and stratigraphic hierarchy. The method will be described and applied to interpret subsurface data in non-marine, shallow marine, and deep marine depositional settings. The emphasis will be on the recognition and mapping of play elements from exploration to production scales.

Business Impact: Participants will develop an understanding of how sequence stratigraphy aids in **prediction** and **mapping** of play elements' presence and quality based on well data. They will enhance value for their employers by **identifying high- and low-risk areas**, generating robust resource volume assessments, and providing an **interpretation of connectivity** that allows for more accurate **prediction of production**.

Learning Outcomes

Participants will learn to:

1. Interpret cores and well-logs in a sequence stratigraphic context.
2. Review the basic terminology and definitions of sequence stratigraphy.
3. Apply the concept of facies, facies stacking, and shoreline trajectory to define parasequences, surfaces, and systems tracts.
4. Evaluate the main controls on depositional sequences.
5. Describe the accommodation Succession Method and Sequence Stratigraphy Hierarchy.
6. Apply the sequence stratigraphic method in non-marine, shallow marine, and deep marine environments.

Training Method

This is a classroom or virtual classroom course comprising a mixture of lectures, discussion, case studies, and practical exercises.

Who Should Attend

Geophysicists, geologists, explorationists and managers who are interested in an introduction or review of the theory and application of contemporary stratigraphic techniques to exploration and production.

Course Content

The main topics covered in this course are:

- Sequence Stratigraphic Method Applied to Well Logs

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- Lithostratigraphy vs Chronostratigraphy Correlations
- Sequence Stratigraphy Method Applied to Well-Log
- Well-Log Interpretation Correlation
- Urdanetta Exercise - Well Log Interpretation and Correlation
- Well-Log Loop-Tie Interpretation and Mapping
- Well-log Interpretation and Correlation In a Production Setting