TETRA TECH RPS ENERGY | TRAINING

N410: Sequence Stratigraphy Applied to Exploration and Production

Format and Duration
Classroom - 5 Days

Instructor(s): Dr. Rene Jonk

Summary

Participants will learn to the use sequence stratigraphy to describe, correlate, and map strata, enhancing geoscience workflows throughout the E&P life cycle. 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.

The terminology of surfaces, systems tracts, sequence sets and stratigraphic hierarchy will be described, and then applied to subsurface data exercises 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. The sequence stratigraphic method can be applied to cores, well logs, seismic, and outcrops in all depositional environments.

Learning Outcomes

Participants will learn to:

1. Characterize and map hydrocarbon play elements in different settings.
2. Assess and interpret cores, well-logs, and seismic lines.
3. Implement sequence stratigraphic methods to define plays and prospects, and to predict play element presence and quality on seismic data.
4. Describe how the concepts of sequence stratigraphy were developed and apply the basic terminology and definitions of sequence stratigraphy.
5. Apply the concept of facies, facies stacking, and shoreline trajectory to define parasequences, surfaces, and system tracts.
6. Evaluate main controls on depositional sequences.
7. Describe the Accommodation Succession Method and Sequence Stratigraphy Hierarchy.
8. Apply chronostratigraphic techniques.
9. Apply the sequence stratigraphic method in non-marine, shallow marine, and deep marine environments.

Training Method

This is a classroom course comprising lectures, discussions, and practical exercises.

Who Should Attend

This course is intended for geoscientists, reservoir engineers, petrophysicists, and sedimentologists who require a working knowledge of the concepts of sequence stratigraphy.

Course Content

TETRA TECH RPS ENERGY | TRAINING

N410: Sequence Stratigraphy Applied to Exploration and Production

Format and Duration
Classroom - 5 Days

Instructor(s): Dr. Rene Jonk

Session 1

- Introduction and Class Objectives
- Stratigraphy History - How the Main Concepts Were Established
- Exercise - Price River C - Core Description, and Interpretation
- Sequence Stratigraphy Concepts
- Exercise - Lithostratigraphy vs Chronostratigraphy Correlations

Session 2

- Sequence Stratigraphy Method Applied to Well-Logs
- Exercises on Well Log Interpretation, Correlation, and Integration with Production data
- Exercise - Well-Log Loop-Tie Interpretation and Mapping

Session 3

- Sequence Stratigraphy Method Applied to Seismic Data
- Exercise - Idealized Depositional Sequences
- Exercise - Fundamentals of Seismic Stratigraphic Interpretation
- Sequence Sets and Composite Sequences
- Exercise - Seismic Stratigraphic Mapping at Exploration Scale
- Exercise - Play Definition at Regional Scale

Session 4

- Seismic Facies Mapping
- Exercise - Woodbine Seismic Facies and EoD Mapping
- Reservoir Distribution in Deep Water Settings
- Exercise - East Breaks Seismic Interpretation and Mapping

Session 5

- Play Elements Distribution and Stratigraphic Trap Styles
- Exercise - Identification of Stratigraphic Traps in Deep Water Settings
- Reservoir Compartments in Deltaic and Deep Water Reservoirs
- Exercise - High Resolution Mapping at Production Scale - Deltaic reservoirs
- Exercise - High Resolution Mapping at Production Scale - Deep Water Reservoirs