

3-D Seismic Interpretation Course

Interpretation³

Dan Shaughnessy

The course comes from our direct experience working on 3-D seismic data on Landmark and Geoquest software. Each customer's needs are different and we make each course fit the needs of the particular customer. The course can be taught as an interactive course with the client supplying workstations, software and data. It can also be taught from overheads and not be specific to Landmark software. We can also teach the course to small groups at our office in Houston. The course can be constructed for inexperienced users or experienced users. We work with our clients to develop the right course for their needs.

The course outline is taken from our extensive 3-D Seismic Interpretation WorkFlow:

3-D Seismic Interpretation General Work Flow

Load Data

- Seismic Data – SEGY Format(s)
- Geological Data
- Culture Data

Interpret Seismic Data

Interpret Faults

- Pick Faults
- Tie Faults at Wells
- Create Fault Planes
- Check Faults on Time Slices

Create Synthetic Seismogram, Key Wells

- Edit, Corrected Sonic and Density Curves
- Select Wavelet
- Create Synthetic Seismogram
- Tie to Seismic Data

Interpret Horizons

- Select Horizons to be Interpreted
- Tie Key Wells
- Identify Unconformities
- Pick Horizons and Unconformities
- Calculate Fault Heaves
- Create Fault Polygons
- Run Autopicker
- Calculate Isochrons

Contour Time Maps

- Sample Surface
- Grid Surface
- Select Contour Interval

Create Depth Maps (Determine Need and Accuracy)

Determine Velocity Variation

- Check Shot Surveys
- Sonic Logs
- Seismic Velocities

Determine Best Depthing Method

- Single Velocity
- Single Function
- Layer Cake
- RMS

Make Velocity Map(s)

Create Depth Maps

The course concentrates on the Interpret Seismic Data section of the general workflow but without the Create Synthetic Seismograms section, which is covered in another course. Sections can be added or deleted as needed. A basic course takes five days to complete. Other sections include: Creating Depth Maps, Amplitude Analyzes, Data Loading and Calculating Gross Rock Volume of reservoirs