

5 POPULAR PITFALLS IN SEISMIC AMPLITUDE INTERPRETATION

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Seismic amplitude interpretation has come a long way since the early attempts at “bright spot” analysis in the Gulf of Mexico. Many excellent training courses, papers and books exist on the subject yet somehow the true value of this technology is rarely realised in modern oil companies. I’ve observed the same mistakes made over and over again by seismic interpreters, geologists, managers, and even geophysicists. The most popular pitfalls appear to be grouped into 5 themes:

1. Understanding what can be inferred from seismic amplitudes for the target interval;
2. Understanding what cannot be inferred from seismic amplitudes;
3. Undue focus on a single or favoured attribute;
4. Allowing an amplitude study to become a “sideshow”;
5. The “human factor”, or overcoming the diehard sceptic.

I’ve borrowed examples from amplitude studies conducted around the world to illustrate these pitfalls and how to avoid them. The examples highlight a need to integrate better with the geology (and geologists) when attempting to calibrate the seismic amplitude response and also when updating prospect risk. If the first 4 pitfalls can be avoided, then eventually the fifth pitfall will cease to exist.

PRESENTER PROFILE

Jarrold Dunne is a geophysicist at Nexus Energy, a mid-cap oil and gas exploration company based in Melbourne. Prior jobs with Shell International and Woodside contributed to his special interest in seismic amplitude interpretation and its role in exploration and development. In 1996 he completed a Ph.D at Melbourne University focussing on seismic processing of deep seismic data from the Gippsland Basin. More recently his interests have broadened into petrophysics, rock physics, seismic interpretation and portfolio management. He is a member of the ASEG and SEG.

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