

ENGINEERING SOFTWARE

DEEPWATERPRO®

HXR's DEEPWATERPro® Pore Pressure Evaluation suite uses the unique method of integrating multiple seismic/ sonic velocity stacks to predict pore pressure along the 3D wellpath, and takes into account the effect of formation temperature, making it especially useful for offshore development projects where extended reach drilling (ERD) or highly deviated wells are planned, and for HPHT shelf projects where resistivity is the most accurate measurement used for pore pressure evaluation. DEEPWATERPro® features a modeling library of both commonly accepted as well as proprietary and user-defined algorithms, and a LOT/FIT/MDT database for every block in the GOM. In addition to its pre-planning capability, DEEPWATERPro® is designed for near-realtime density, sonic, and resistivity inputs, with the capability to add d-exponent overlays and MSE calculations for simple visualization of transition-zone pressure changes.

Functionality Highlights of DEEPWATERPro®:

- Uses RHOB, sonic (DT slowness), seismic, resistivity, Dexp, MSE/DSE inputs
- 2-D/3-D Seismic/Sonic Stacks — uses multiple 1-D velocities along actual well path to account for changes as the well is drilled out (ERD development wells)
- Utilizes various basin models (Eaton, Modified Eaton, etc). New models/user defined models can be added, and they can all be modified
- Log viewer that allows for all of the data to be viewed/QC'd
- "Lookahead" capability — allows for the user, using the current pressure change, to project ahead of current position to model what pressure may be given current increase; gives rig team an idea of what they may potentially be facing if drilling continues
- It can automatically, from cation exchange (a X-plot of res/sonic), pick out "clean" shales
- Salts, wet sands and other special models can be interpreted (sands may show regression due to hydrostatic effect, etc).
- Simple to use LAS reader
- Takes into account formation uplift and varying water depth for offsets
- Common datum automatically calculated

Future Additions Include:

- A seg-y file reader
- Enhanced daily reporting function
- Enhanced presentation capability
- Add additional fracture gradient (FG) models to software — increase/updated library
- Enhanced X-plotting capabilities

