The PreVue* pore pressure analysis service provides real-time monitoring and prediction of pore pressure and fracture gradients at the wellsite, using LWD (gamma ray, resistivity, and sonic), MWD (annular pressure while drilling), drilling (ROP, torque), gas (C1–C5) and other mud logging data including cutting and caving morphology diagnosis.

Abnormal pressure events such as kicks, mud losses, and other well control problems can lead to the loss of the entire well, together with potential loss of life and property. The PreVue service can play a decisive role in minimizing these risks and improving drilling performance.

Predrill planning
Before drilling starts, pore pressure experts in the Geopressure Technical Center analyze offset data such as results from leakoff tests (LOT), engineering and geological reports, well logs, and mud weights. The experts use this information to model the pore pressures likely to be encountered along the proposed wellbore trajectory. Potential hazards are identified and analyzed and contingency plans are recommended.

Real-time monitoring
During drilling, two Geoservices engineers specialized in the PreVue service provide a 24-hour service at the wellsite, using real-time pressure monitoring software, evaluating data, and adjusting the predrill model for accurate estimation of pore pressure, fracture gradient, and overburden. Interpretations and recommendations are communicated to key decision makers both at the wellsite and in the office. Interpretation experts based at the Geopressure Technical Center provide additional support to the wellsite and client teams as required, through in-depth analysis of the daily reports submitted by the wellsite engineers.
Event analysis
The PreVue service captures particular events during the drilling phase. All observations are recorded, including the type and time of the event and the recommendations made. The result is a cogent and immediate review of pore pressure issues.

Special emphasis is placed on examining the following events:

Flowback events: Abnormal flowback is recognized through connection fingerprinting and provides valuable insight into the relationship between the mud density and formation pressures.

Drilling events: Variations in ROP are used to estimate formation competency at the bit. Drilling breaks can signal the beginning of a pore pressure ramp.

Gas events: All gas events and their contexts are recorded. Accurate monitoring of lag time and identification of connection gas origins and propagation mechanism can help detect the onset of abnormal pressure.

Mud events, and torque and drag: Accurate control of mud weight can have a positive effect on the outcome of a well influenced by pore pressure. A record of pickup, slack-off, and free-rotating weights is a valuable indicator of hole cleaning effectiveness and also helps to analyze the origin of cavings.

Caving events: Observations at the shale shakers provide a digital record of the quantity, size, shape, and mechanism of the origins of cavings. The information is included in a caving report.