PeriScope

Real-time bed boundary mapping
The capability of the PeriScope bed boundary mapper to detect reservoir and fluid boundaries while drilling makes it possible to keep wells in the sweet spot of the reservoir—and evaluate formations in less time. Welcome to productive drilling.

**A NEW APPROACH TO PRODUCTION ENHANCEMENT**

PeriScope bed boundary mapping while drilling delivers the measurements needed to place as much of the wellbore as possible in the best reservoir zone on the first try—even if that zone is thin or dipping, or has poor seismic definition. By reducing uncertainties about geometry and formation properties, this new approach to well placement optimizes production, avoids drilling hazards and water zones, eliminates sidetracks, and minimizes well construction cost and risk. Real-time PeriScope mapping enables production objectives to be achieved with less drilling and allows recovery of reserves that could not be accessed economically with earlier technology. Mapping can be done in both water- and oil-base muds.

**DIRECTIONAL AND DEEP**

Robust, accurate boundary mapping is enabled by directional measurements highly sensitive to boundaries. The 360° mapping and the measurement depth of up to 21 ft [6.4 m] permit proactive geosteering by the well placement team to position the wellbore in the best place and avoid exiting the reservoir.

**ILLUMINATING THE RESERVOIR**

Because the PeriScope mapper continuously delivers deep images of boundaries around the borehole, uncertainties in structure and formation properties are significantly reduced in larger volumes of the reservoir than with any traditional well logs. This results in more accurate reservoir models, superior reserves estimation, and improved planning of future wells.

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Maximize reservoir contact and production, access attic oil, and delay water production by using PeriScope real-time bed boundary mapping to steer wells to the best place and evaluate formations while drilling.

- Increase production rates and recovery
- Reduce or delay water production
- Access reserves previously considered economically marginal
- Cut drilling cost by avoiding drilling hazards and eliminating need for a pilot hole
- Estimate reserves more accurately
- Shorten BHA by integrating resistivity and azimuthal deep measurements in one tool
PeriScope real-time bed boundary mapping ensures precise well placement to maximize production while minimizing drilling costs.

**Conventional measurements**—Reactive steering
Real distance to the boundary unknown. Measure point 40 ft behind the bit.

**At-the-bit measurements**—Reactive steering
Real distance to the boundary = zero/nill. Measure point 3 ft behind the bit.

**PeriScope real-time boundary mapping**—Proactive steering
Real distance to the boundary detection = 21 ft. Measure point 40 ft behind the bit.

- Reservoir exit avoided
- >500 ft Enough reaction distance
- PeriScope real-time bed boundary mapping ensures precise well placement to maximize production while minimizing drilling costs.

PeriScope, Productive drilling, guided by PeriScope real-time bed boundary mapping, puts wells in the best place—in less time—on the first try.

- Formation and fluid boundary mapping while drilling
- High-resolution azimuthal sensitivity for accurate boundary orientation while drilling
- Unique symmetrization that provides accurate boundary mapping independent of anisotropy and dip
- Fully compensated multidepth resistivity measurements while drilling

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