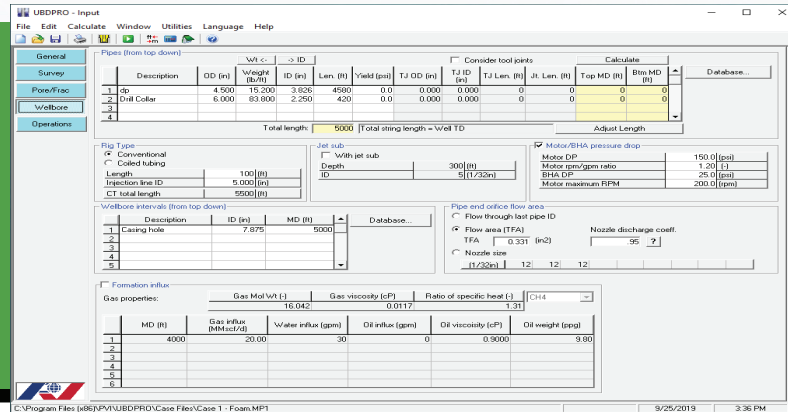


# UBDPRO

## Underbalanced Drilling Hydraulics

Model underbalanced and managed pressure drilling hydraulics



Underbalanced Drilling Hydraulics

## OVERVIEW

Managed Pressure Drilling (MPD), including Underbalanced Drilling (UBD) technology, precisely controls the annular fluid pressure profile within a wellbore, which allows drilling of what might otherwise be economically unattainable prospects. Managed pressure drilling is often performed with the primary motivation of reducing formation damage. Therefore, increasing production and aerated fluid is commonly employed in the drilling process. In hard rock applications, managed pressure drilling is often performed with the primary motivation of increasing ROP (rate of penetration). Here air/mist drilling fluids are commonly employed.

UBDPRO models the complex hydraulics for compressible fluids including air, mist, foam, and 2-phase fluids. The advanced software model can be used to optimize gas and liquid injection rates in order to control bottomhole pressure.

## KEY BENEFITS

### Improved Drilling Efficiency

- Increases Rate of Penetration (ROP) in hard rock formations through air/mist drilling.
- Optimizes gas and liquid injection rates for optimal bottomhole pressure control.

### Risk Mitigation

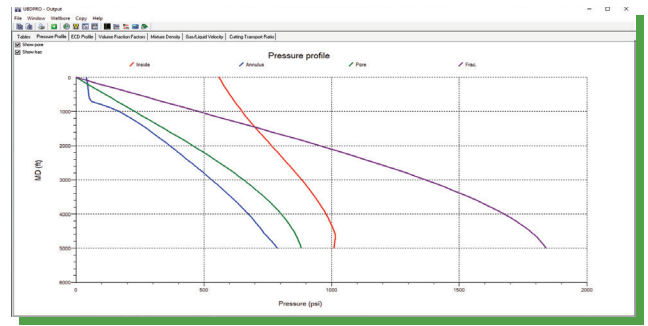
- Identifies potential issues and provides solutions before they occur.
- Helps prevent costly wellbore incidents.

### Cost Reduction

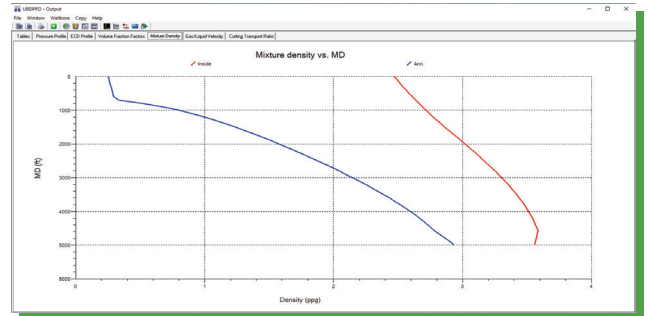
- Optimizes drilling parameters to reduce operational costs.
- Minimizes non-productive time (NPT) due to wellbore instabilities.

## KEY FEATURES

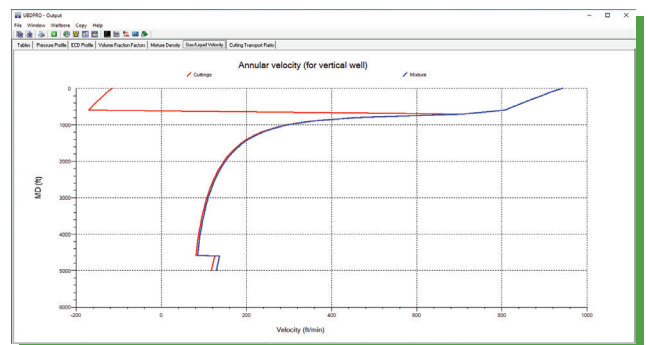
- Vertical or directional well
- Compressible fluid hydraulics
- Up to 1,000 survey stations
- Pore and fracture profiles
- Temperature gradients
- Jet sub calculation
- Motor pressure drop
- Foam flow: Bingham plastic/Power-law/Chevron's model/Reidenbach and Harris model
- Multiphase flow: Beggs-Brill method
- Cutting transport ratio
- Gas injection rate analysis
- Handles formation influxes up to 6 depths
- Pressure, ECD, gas volume, density, velocity, and cutting transport profiles
- RPM effect
- Microsoft Word® report
- US oil field, SI, and customized units
- Multi-language: English, Spanish and Chinese



Pressure Profile



Mixture Density vs. MD



Annular Velocity

## DRILL COMPLEX PROSPECTS WITH CONFIDENCE

Discover UBDPRO—Schedule Your Demo Today

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