

Drilling Software | Sophisticated Yet Simple



HYDPRO®

Drilling Hydraulics Model

Overview

Whether you are drilling a vertical or extended-reach well, a too high or too low equivalent circulating density (ECD) can cause serious drilling problems or even compromise your project's budget. A successful drilling operation relies heavily on achieving an optimal ECD. Accurate modeling and optimized drilling hydraulics are crucial. It allows engineers to plan ahead, improving drilling efficiency, reducing risk, and decreasing non-productive time (NPT).

Pegasus Vertex's HYDPRO is a comprehensive drilling hydraulics model that covers all aspects of hydraulics, including downhole circulating pressures, surge and swab, ECD, bit optimization, hole cleaning, and volumetric displacements. With these features, downhole drilling hydraulic conditions can be fully examined, and any potential problems can be identified prior to field execution.

Benefits

Improved Drilling Efficiency

- Selecting the right bit for specific drilling conditions improves drilling performance and extends bit life.
- Optimizing drilling parameters for effective hole cleaning prevents complications like stuck pipe and wellbore instability.

Cost-Effectiveness

- By identifying potential issues beforehand, HYDPRO helps minimize on-site problems, leading to less downtime and cost savings.
- Enables the optimization of drilling parameters, such as ECD and bit selection, which can lead to faster drilling rates and reduced wear on equipment, lowering overall operational costs.

Risk Mitigation

- Accurate modeling helps prevent incidents like stuck pipe, differential sticking, and wellbore instability, safeguarding personnel and equipment.
- Prevents downhole problems like formation fluid kick-in and loss circulation fluid.





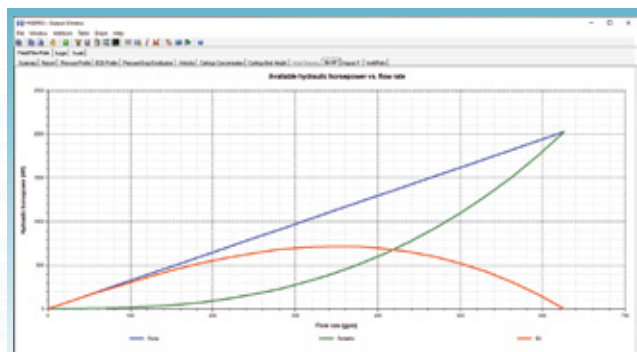
HYDPRO®—Drilling Hydraulics Model

Features

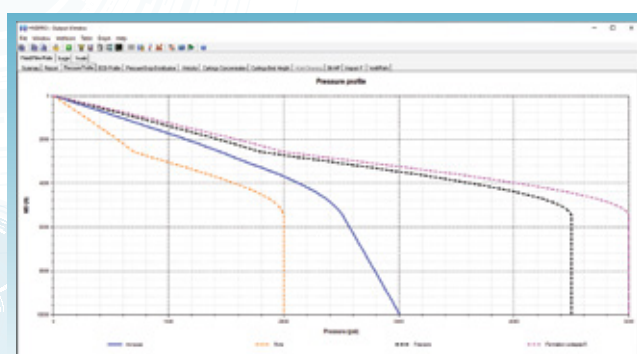
- Fixed flow rate analysis: pressure, ECD, hole cleaning
- Cuttings concentration
- Bit hydraulics optimization
- Surge and swab
- Hydraulics sensitivity analysis
- Surge and swab speed sensitivity analysis
- Field data comparison on ECD and SPP
- Bingham Plastic, Power Law and Herschel Buckley rheology models
- Land and offshore wells
- 2D animation
- Hydraulics calibration
- 3D well path visualization
- Graph customization
- Microsoft Word® report
- Survey import from Excel®, text or PDF® files
- US oil field, SI, and customized units
- Multi-language: English, Spanish, Chinese, Russian, and Portuguese

System Requirements

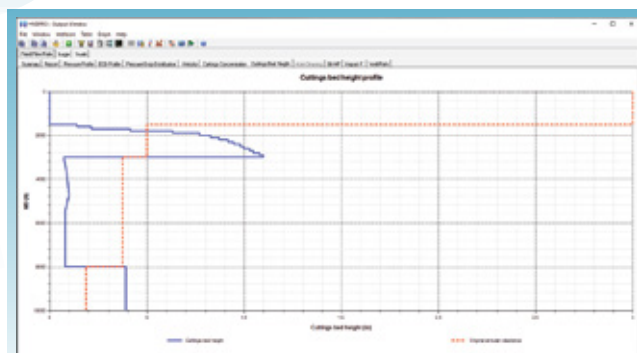
- Microsoft Windows® 10 or above
- Microsoft Office® 2016 or above
- Dual-core processor, 1.4 GHz or higher (Not compatible with ARM processor)
- 4 GB RAM (8 GB Recommended)
- 200 MB of free disk space for installation
- 1,280 x 768 display resolution



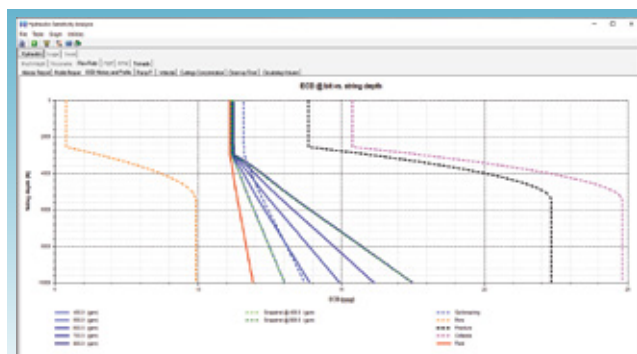
Bit Hydraulics Optimization



Pressure Profile



Cuttings Bed Height Profile



ECD History and Profile