

UCoMS Applications in the Petroleum Industry

Progress Report

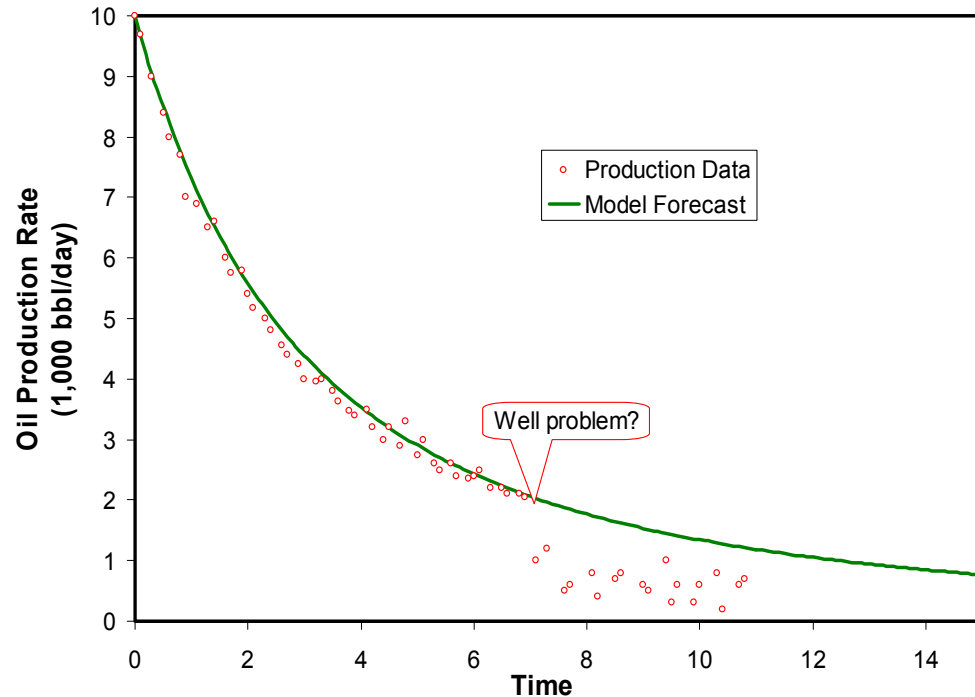
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Activities and Achievements

1. Real time well production problem identification

- Computer program completed
- 1-journal paper published

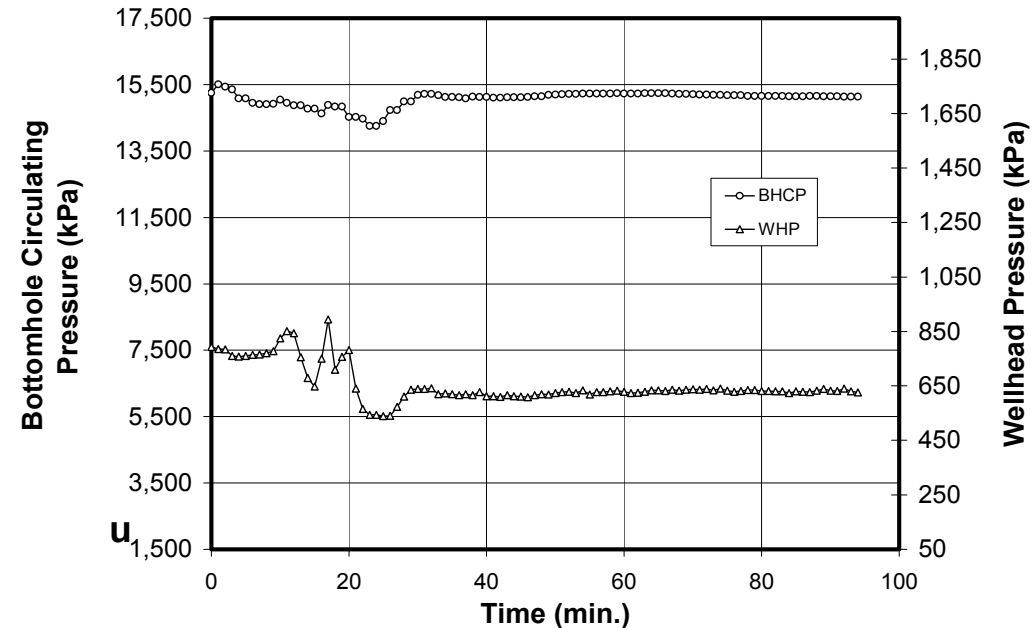


Guo, B., Ghalambor, A., and Xu, C: "A Systematic Approach to Predicting Liquid Loading in Gas Wells," *SPE Production & Operations Journal* (February 2006).

Activities and Achievements (cont'd)

2. Real time drilling problem identification

- Mathematical model developed
- 2-journal papers accepted for publication

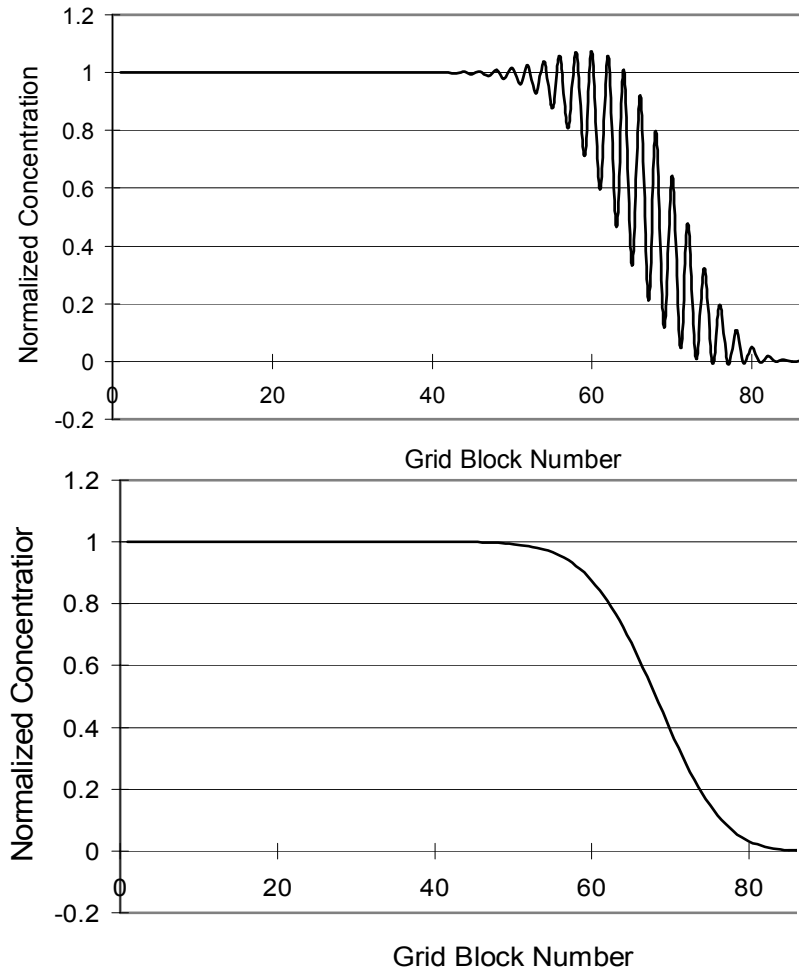


1. Guo, B. and Ghalambor, A.: "Characterization and Analysis of Pressure Instability in Aerated Liquid Drilling," accepted for publication in the *Journal of Canadian Petroleum Technology* (2006).
2. Sun, K, Guo, B. and Ghalambor, A.: "An Analytical Solution for Aerated Mud and Foam Drilling Hydraulics in Deviated Holes," *Journal of Canadian Petroleum Technology* (March, 2006).

Activities and Achievements (cont'd)

3. Speeding up reservoir simulation

- High-order finite difference
- 1-journal paper published

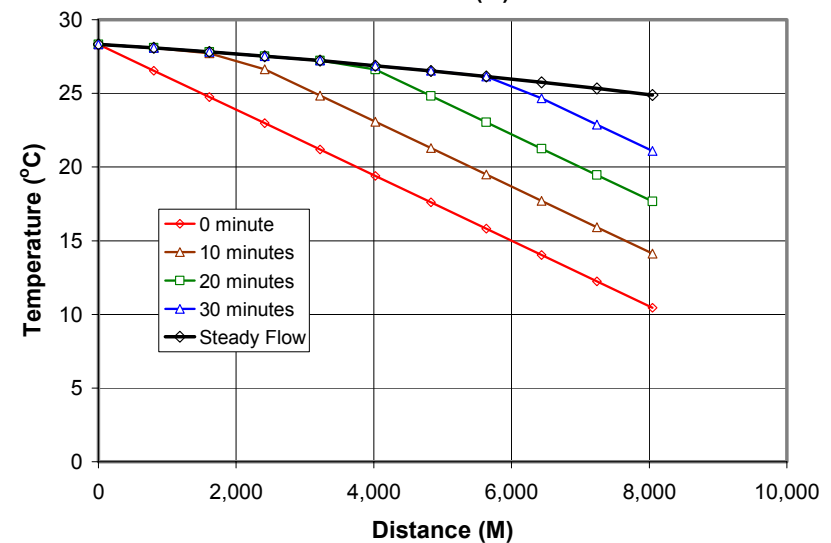
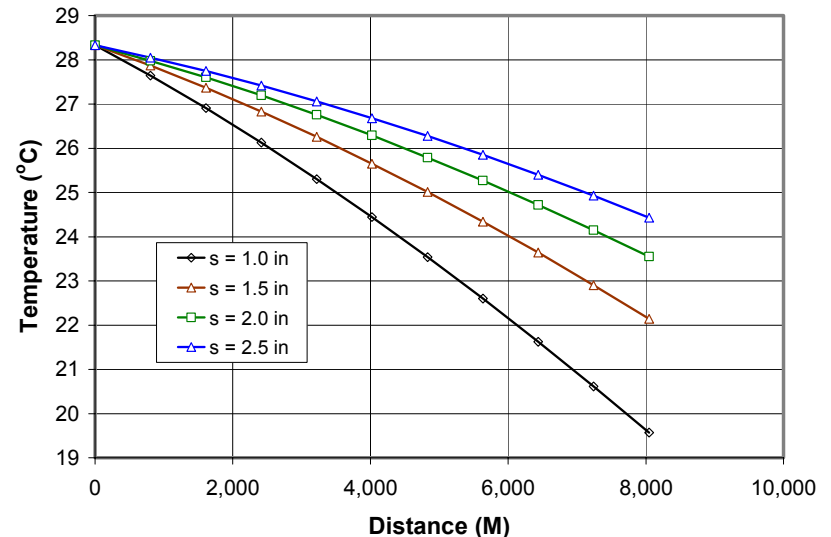


Guo, B. and Wang, X.: "Testing of New High-Order Finite Difference Methods for Solving Convection-Diffusion Equation," *E-Journal of Reservoir Engineering* (October, 2005).

Activities and Achievements (cont'd)

4. Offshore pipeline flow assurance

- Mathematical model developed
- 1-journal paper published



Guo, B., Duan S., and Ghalambor, A.: "A Simple Model for Predicting Heat Loss and Temperature Profiles in Insulated Pipelines," *SPE Production & Operations Journal* (February 2006).

