

1. Record Nr.	UNINA9910270874803321
Autore	Chin Wilson C.
Titolo	Reservoir engineering in modern oilfields : vertical, deviated, horizontal and multilateral well systems // Wilson Chin
Pubbl/distr/stampa	Hoboken, New Jersey : , : John Wiley & Sons, Incorporated, , [2016] ©2016
ISBN	1-119-28461-9 1-5231-1049-X 1-119-28460-0 1-119-28462-7
Descrizione fisica	1 online resource (353 p.)
Collana	Handbook of petroleum engineering series ; ; volume 1
Disciplina	622/.3381
Soggetti	Oil reservoir engineering Petroleum engineering Oil wells
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and indexes.
Nota di contenuto	Cover; Title Page; Copyright Page; Contents; Preface; Acknowledgements; 1 Reservoir Modeling - Background and Overview; Overview; Reservoir modeling landscape; Reflections on simulation and modeling; Reservoir Flow Algorithms for Petroleum Engineers; Multisim™ Features - Advanced Interactive Reservoir Modeling; Reservoir Description; Well System Modeling; Additional Simulator Features; Simple Wells to Multilateral Systems for Laymen; Advanced Graphics for Color Display; Tracer Movement in Three-Dimensional Reservoirs; 2 Mathematical Modeling Ideas, Numerical Methods and Software Overview and Background Formulation errors; I/O problems; Fundamental Issues and Problems; Numerical stability; Inadequacies of the von Neumann test; Convergence; Physical resolution; Direct solvers; Modern simulation requirements; Pressure constraints; Flow rate constraints; Object-oriented geobodies; Plan for remaining sections; Governing Equations and Numerical Formulation; Steady flows of liquids; Difference equation formulation; The iterative scheme;

Modeling well constraints for liquids; Steady and unsteady nonlinear gas flows; Steady gas flows; Well constraints for gas flows  
Transient, compressible flows  
Compaction, consolidation and subsidence; Boundary conforming grids; Stratigraphic meshes for layered media; Modeling wellbore storage; Early 1990s Validation Calculations; Simulation capabilities; Data structures and programming;  
Example 2-1. Convergence acceleration, two deviated horizontal gas wells in a channel sand; Example 2-2. Dual-lateral horizontal completion in a fractured, dipping, heterogeneous, layered formation; Example 2-3. Stratigraphic grids, drilling dome-shaped structures  
Example 2-4. Simulating-while-drilling horizontal gas wells through a dome-shaped reservoir  
Example 2-5. Modeling wellbore storage effects and compressible borehole flow transients; Run 1. Production well, no wellbore storage effects; Run 2. Production well, with some wellbore storage effects; Run 3. Production well, with more wellbore storage effects; Run 4. Injector well, without wellbore storage effects; Run 5. Injector well, with wellbore storage effects; 3 Simulation Capabilities - User Interface with Basic Well  
Example 3-1. Single vertical well, user interface and menu structure for steady flow  
Example 3-2. Volume flow rate constraint at a well; Example 3-3. Pressure constraint and transient shut-in; Example 3-4. Heterogeneities, anisotropy and multiple wells; Example 3-5. Reversing well constraints - consistency check; Example 3-6. Changing farfield boundary conditions; Example 3-7. Fluid depletion in a sealed reservoir; Example 3-8. Depletion in rate constrained well in sealed reservoir; Example 3-9. Steady flow from five spot pattern; Example 3-10. Drilling additional wells while simulating  
4 Vertical, Deviated, Horizontal and Multilateral Well Systems

---