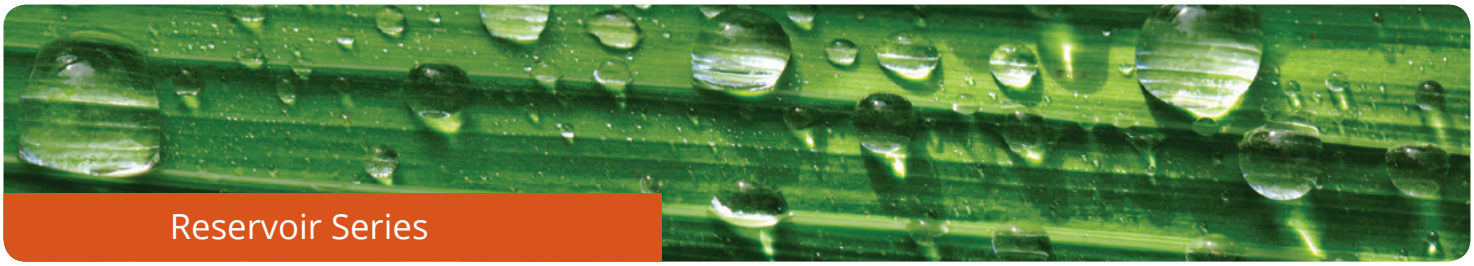


Reservoir Series

Well Test Design and Analysis

Designed for:

The course is written for engineers who will be involved in both planning and interpreting well tests. A reasonable level of reservoir engineering knowledge is required, eg fluid property characterisation. It is suitable for reservoir engineers with 1-5 years experience, or those who have not practised well test design and analysis before.

Duration
(days)

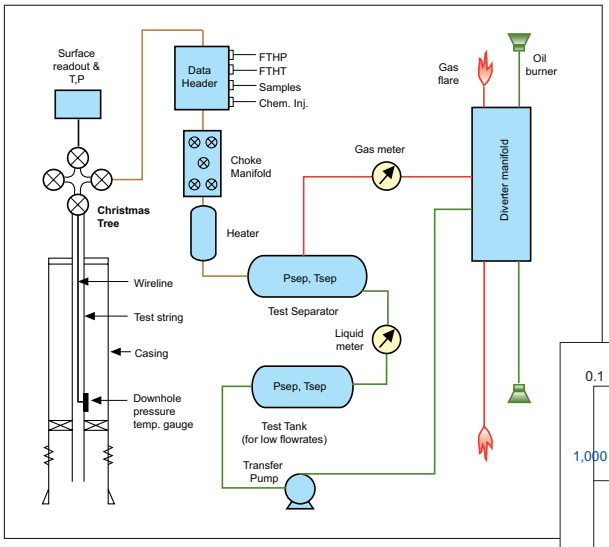
1 2 3 4 5
flexible

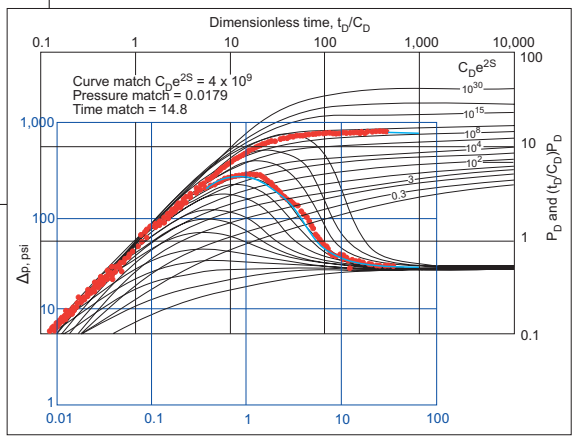
Learning Level:

Skills
Knowledge
Awareness

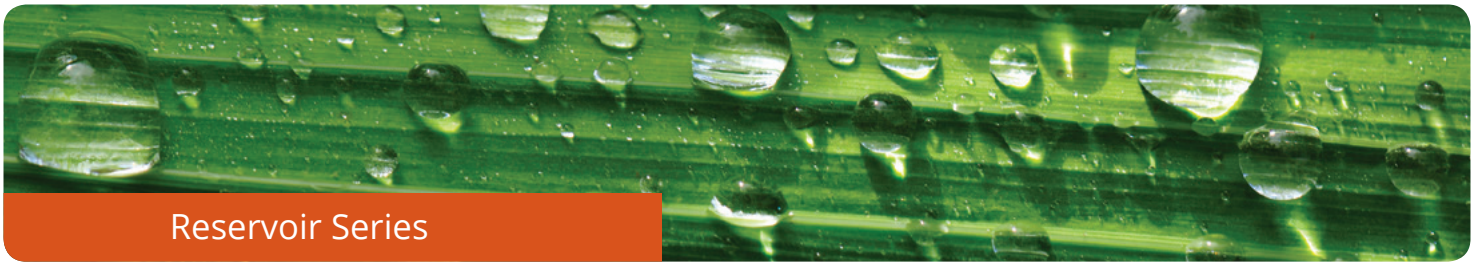
This course shows you how to approach the planning, witnessing, interpretation and reporting of a well test. An expansive case study is provided which is used as an example of oil well testing. Separate examples are used for gas well testing and other more complex tests.

The mathematical background to transient pressure testing is covered in sufficient detail to allow the theory behind the basic interpretation techniques to be understood.





Early Development
E&P Overview
Reservoir
Wells
Business & Risk
Open Air
Coaching
Master Class



Reservoir Series

Well Test Design and Analysis continued

Course Content:

- Introduction to Well Testing
  Overview of Well Behavior and Testing,
  Objectives of Well Testing,
  Plan of this Course Manual
- Fundamentals of Fluid Flow in Porous Media
  Diffusivity Equation,
  Boundary Conditions,
  Superposition
- Flow and Build-Up Test Analysis for Oil Wells
  Analysis of Flow Tests,
  Analysis of Build-up Tests,
  Radius of Investigation,
  Wellbore Storage Effects,
  Skin - damage and stimulation,
  Effect of Partial Penetration and Deviation,
  Drainage Area Pressure, Distance to Boundaries
- Flow and Build-Up Test Analysis for Natural Gas Wells
  Pseudopressure,
  Non-Darcy Flow,
  Analysis of Gas Well Flow Tests,
  Multirate Tests,
  Analysis of Gas Well Build-up Tests
- Type Curve Analysis
  Ramey Type Curves,
  Gringarten et al Type Curves,
  Bourdet et al Derivative Type Curves,
  Use of Commercial Well Test Analysis Software
- Drill Stem Testing
  Equipment,
  Design and Execution,
  Analysis - Ramey et al ,
  Closed Chamber DST
- Special Applications
  Interference and Pulse Testing,
  Hydraulically Fractured Wells,
  Naturally Fractured Reservoirs,
  Horizontal Well Analysis

Course Duration:

Duration is 3 - 5 days

Courses available from this series:
Basic Geoscience
Introduction to Geophysics
Geological Application of Well Logs
Openhole Petrophysical Interpretation
Core Description
Production Geology
Applied Production Geology
Reservoir Model Design
Fractured Reservoir Characterisation
Geology for Drilling Engineers
Reservoir Engineering
Applied Reservoir Engineering
Well Test Design & Analysis
Logging While Drilling
Basin Analysis
Geomechanics

Course Tutor

John Gallivan PhD

Main Series tutoring: Reservoir, Business & Risk, Master Class: Horizontal Wells
Industry experience: over 35 years, reservoir and petroleum engineering, economics
Career background: BNOC, Britoil, BP, Heriot-Watt, AGR and TRACS
Personal: Former TRACS Director, Moscow

Mark Cook BSc, MBA

Main Series tutoring: Early Development, Business & Risk, Reservoir Engineering
Industry experience: 40 years, reservoir engineering economics and risk analysis
Career background: Shell, AGR (VP) and TRACS
Personal: Author, 'Hydrocarbon Exploration and Production' (Elsevier 2008), 'Petroleum Economics and Risk Analysis' (Elsevier 2021), SPE distinguished lecturer on Risk Analysis

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