

COURSE OVERVIEW

This is a pressure transient testing course covering well testing design and evaluation using Saphir and other developed software and Excel programs.

COURSE FORMAT

The course will consist of taught lectures and practical sessions. Real field examples will be taught using Saphir well testing software.

COURSE OBJECTIVES

Be able to determine test procedures that satisfy test objectives. Be able to appraise the quality of data being gathered. Be able to perform the fundamentals of transient pressure analysis. Be able to assess the test data and recommend additional services to improve well productivity such as acidizing or hydraulic fracturing. Be able to design different well tests and provide the test duration to satisfy the test objectives. Be able to recommend drilling either a vertical well or a horizontal well with or without hydraulic fractures.

WHO SHOULD ATTEND

Reservoir, Petroleum and Production Engineers, Geologists. Basic knowledge of well test interpretation is helpful.

COURSE CONTENT

- Fluid flow in porous media
- Reservoir and well test fundamentals
- Steady state, pseudosteady state, and transient flow
- Wellbore storage, phase segregation, and skin effects

- Superposition with time, rate, and space
- Type curve, conventional linear regression, and non-linear regression analyses
- Infinite acting radial flow and reservoir boundary effects on Horner analysis
- Short term testing, closed-chamber DST, and FasTest analyses
- Well Test design using Saphir software, optimizing test duration, and parameter sensitivity
- Plot diagnostics
- Homogeneous, heterogeneous, and dual porosity formations
- Wellbore with limited entry (partial completions)
- Phase segregation and changing wellbore storage
- Hydraulically fractured wellbore behavior
- Radial and linear composite reservoirs
- Horizontal wells
- Layered reservoirs
- Gas well behavior and material balance effects
- Non-Darcy flow and rate-dependent skin effects
- Time-dependent skin effects
- Analysis techniques using Saphir

- QA/QC, gauge comparison, and data quality
- Data processing and various diagnostic plot generation
- Production forecasting based on evaluated test data and compare with various stimulation techniques
- Simultaneous analysis of a changing wellbore and reservoir model
- Boundary configuration [infinite, no-flow or constant boundary pressure, linear/radial barrier(s), leaky faults, parallel or intersecting faults]

THE LECTURER



Dr. Mehdi Azari

Mehdi Azari is a Senior Reservoir Engineering Advisor with Halliburton Consulting on the Burgan Field Production Optimization in Kuwait. He Previously worked on the South Ghawar Unconventional Gas project at ARAMCO in Saudi Arabia, worked with the Production Optimization Team in Algeria, Technical Advisor for reservoir engineering in the Wireline and Perforating product line in Houston. Prior to that, worked at Halliburton Production Enhancement Services in Duncan, Oklahoma, and as a professor of Petroleum Engineering at the University of Wyoming.

He holds a BS degree in Chemical Engineering and, MS and PhD degrees in Petroleum Engineering from University of Southern California.

Dr. Azari has authored over 80 publications in reservoir engineering, well testing, perforation, production engineering, reservoir simulation, formation damage, and geo-pressured reservoirs. He also has 14 US and international patents. He has made numerous technical presentations, seminars, short courses, SPE talks in United States, South America, Middle East, Africa, and SE Asia

Dr. Azari was the chairman of the Reservoir Mechanics Technical Interest Group (TIG) of the Society of Petroleum Engineers (SPE).