

# Matrix Stimulation Engineering Workshop

*Five days of practical training on state-of-the art Matrix  
treatment technology directed at improved well performance.*

Day:	Subject:
Mon	Welcome/Introduction (8:30 to 9:30 hrs) Introduction to Matrix Stimulation Engineering: Keys to Success
	The Candidate Selection Process: Production Prediction/Stimulation Technique Selection Formation Damage Characterization & Removal
Tue	Sandstone Acidizing: Fluids & Design Matrix Additives: Types/Application
Wed	Placement and Zone Coverage: Diversion Matrix Stimulation Laboratory Sandstone Design Methodology Sandstone Design Workshop/Presentation
Thu	Treatment Execution & Evaluation Carbonate Acidizing Horizontal Well Matrix Stimulation
Fri	Carbonate Design Workshop Design Workshop Presentations Roundtable Discussion Discussion on Specific Well Problems

## Course Outline:

The 5-day workshop will consist of lectures and work sessions directed at improved treatment success and well performance. Each lecture will discuss state-of-the-art technology with emphasis on field applications and case histories followed by a work session to emphasize the "every-day" practical application of the technology. During the Workshop you will learn how to select good Matrix candidates, characterize the damage, optimize a treatment, evaluate treatment economics, provide QC, evaluate real-time skin evolution, and perform post-treatment evaluation. Students are encouraged to bring information on a well they are interested in evaluating.

# Matrix Stimulation Engineering Client Workshop

## What is Matrix Stimulation Engineering (MSE)?

- The practical application of scientific and mathematical principles to Matrix Stimulation with a defined methodology directed at improved treatment success and well performance.
- It yields substantial production improvements with payout time of days rather than months.
- Emphasis is placed on proper: 1. candidate selection, 2. formation damage characterization, 3. fluid and additive selection, 4. treatment design, 5. execution, and 6. evaluation in the MSE process.
- MSE applies to acidizing and other treatments injected into the pay zone below fracturing pressure to dissolve, disperse, or bypass the formation damage to yield improved production or injection.
- The engineered process will help operators around the world who indicate that an average of 40-50% of their wells have significant damage although only 1-2% of their wells are Matrix Stimulated each year

## Who should attend?

Engineers, Managers, Researchers, Geologist, and Field Supervisors involved in design, execution, evaluation and/or approval of Matrix treatments. Although the workshop will focus on state-of-art technology, it will emphasize the practical side of Matrix Stimulation with numerous case histories and hands-on applications.

## You will learn how to

- Determine the best stimulation techniques to remove or bypass the formation damage, i.e. matrix, acid or hydraulic fracture.
- Select the best candidates for matrix stimulation to yield enhanced production.
- Quantify the production potential of wells.
- Identify and characterize the damage in a well along with prevention techniques for future wells.
- Optimize the treatment design using matrix software.
- Evaluate the economics of a specific treatment.
- Recommend laboratory testing and evaluate data.
- Evaluate onsite QC procedures and results.
- Execute highly successful matrix stimulation treatments.
- Evaluate real-time well response onsite using "skin evolution" software.
- Perform post-treatment evaluation to improve future treatments.

## Teacher:

Dr. Ron Thomas has more than thirty five years of oilfield/laboratory experience in both managerial and technical positions. He has worked for Schlumberger Dowell, Saudi Aramco, and PEI in the U.S. and internationally (France, Saudi Arabia, Singapore, Indonesia, Iraq). During the past ten years his work has primarily focused on managing PEI, LTD along with training and mentoring of young engineers. He has published more than 40 technical publications including Chapter 13 in the 3<sup>rd</sup> Edition of the *Reservoir Stimulation* book by Nolte/Economides. Dr. Thomas also served as the editor of the Matrix chapters in the *Reservoir Stimulation* book. He holds 8 U.S. patents, and numerous international patents on stimulation products/services.