



Wednesday 20 April, 2005

SALA CONFERENZE  
5° Palazzo Uffici - Eni Divisione E&P  
Via Emilia, 1  
SAN DONATO MILANESE

11:00 – 12:00 AM

## DISTINGUISHED LECTURE

### RESERVE ANALYSIS FOR TIGHT GAS RESERVOIRS

*by Stuart Cox*  
*Marathon Oil Company*

#### ➤ ABSTRACT

Tight gas reservoirs present unique challenges to the practicing reservoir engineer. One significant problem is estimating ultimate recoverable reserves for a tight gas reservoir. The extended time required to establish boundary dominated flow in the tight gas systems conflicts with the need to accurately estimate recoverable reserves early in the life of the tight gas well. One other complicating factor is the application of single layer solution techniques to the common multi-layered completion. This talk focuses on performance based reserve estimation techniques for both single layer and non-communicating multi-layer tight gas reservoirs. It will present a critical review and explanation of common techniques used to estimate tight gas reserves including rate time decline curve analysis, material balance and the combination of type-curve and decline curve analysis commonly referred to as gas production analysis. Appropriate application and pitfalls of each technique will be discussed.

Thursday 21 April, 2005

AUDITORIUM  
EniTecnologie  
Via Maritano, 26  
SAN DONATO MILANESE

10:00 – 12:00 AM

## SEMINAR

### RESERVE ANALYSIS FOR TIGHT GAS RESERVOIRS:

FIELD EXAMPLES  
*by Stuart Cox*

#### ➤ ABSTRACT

The discussion topics of the previous lecture will be supplemented with conceptual simulation work and field examples. Conceptual simulation cases are presented as a control set to test the accuracy of each analytical method. Well performance will be evaluated during both early time transient and late time pseudo steady state flow. Field examples will be presented comparing the results of each technique through time for single and multi-layered reservoirs. The talk will demonstrate the importance of early integration of static geologic description and the well performance for the acceleration of reserve bookings and performance evaluation and will also include a short discussion on the application of industry rules of thumb, and brief discussion of the fundamentals of production analysis and validation of the technique through simulated examples and field cases.

#### ➤ BIOGRAPHY

*Stuart Cox is a Senior Staff Reservoir Engineer with Marathon Oil Company in Houston, Texas. He has 20 years industry experience focused on operation and reservoir engineering. Over the last 10 years Stuart's primary work focus has been production optimization of tight gas reservoirs. He has been involved with domestic development projects in Alaska, Oklahoma, Wyoming, Texas and Michigan and international development projects in Africa, Russia and Australia. Stuart graduated from the University of Tulsa with a B.S. degree in Petroleum Engineering in 1984 and is a registered professional engineer in Alaska and Oklahoma.*