

**Society of Petroleum Engineers
Distinguished Lecturer 2014-15 Lecture Season**



**Distinguished
Lecturer Program**

**Unconventional Reservoirs Require
Unconventional Analysis Techniques**

David M. Anderson

IHS/Fekete's

Abstract:

Rate Transient Analysis (RTA) has become very popular over the past decade as a theoretically robust, yet very practical tool for well performance evaluation, making use of continuously measured production rates and flowing pressures which are collected as part of good production practices. With the advent of unconventional resource plays (particularly shale gas and liquids-rich shale plays), these "RTA" techniques have evolved significantly, adapting to much greater reservoir and completion complexity; and accommodating the availability of much richer and varied data sets.

In light of these recent developments, it is easy to become lost in the details when trying to analyze unconventional reservoirs, particularly when one considers the complexities of flow behavior, pressure-dependent reservoir properties, HP/HT phase behavior, and the challenges of the well completion geometry. This presentation describes how and why RTA techniques evolved as they have over the years, starting with relatively simple conventional (high permeability) reservoir systems and progressing to the complexity of fractured, ultra-low permeability systems. Techniques specific to unconventional reservoirs are presented — and the strengths, limitations, and applications are discussed. These techniques are demonstrated using real field production data.

Biography:

David Anderson is a Product Manager with IHS. He has led the development of IHS/Fekete's F.A.S.T. RTA™ software, and has become a recognized expert in the area of production analysis. Dave has authored numerous papers on the subject, for which he has been awarded two "Best Presented Paper" awards from the Petroleum Society. He also received SPE's Outstanding Young Professional Award for Rocky Mountain Region in 2008. Dave has lectured and presented industry courses worldwide on production analysis. He served on the SPE Calgary Section board during 2005-2007 and currently serves on SPE's Reservoir Description and Dynamics Advisory Committee.