Unconventional” Discovery Thinking in Resource Plays: Haynesville/Bossier Trend, North Louisiana

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Bio:
Currently with Encana Oil & Gas (USA) Inc., Marv Brittenham is responsible for creating growth through new Key Resource Plays within the lower 48 onshore. Marv describes this position as the perfect culmination of a career exploiting tight gas reservoirs throughout onshore USA. The present focus at EnCana is expansion of positions within the large key US gas and oil shale plays, testing their technical attributes and determining their economic viability. EnCana’s discoveries within Haynesville/ Bossier gas shale and Deep Bossier sandstone resource plays in the Gulf Coast Jurassic Trend are now a focus of intense development in Texas and North Louisiana.

Encana recently announced a first mover land position and gas shale discovery in the Michigan Basin and has been actively testing its Rocky Mountain land base for similar potential.

The American Association of Petroleum Geologists has recently elected Marv to a two year term as Vice President - Sections.

Abstract:

EnCana’s strategy for US growth was focused by the New Ventures Team, led by Brittenham, first toward the Gulf Coast Jurassic Trend. The first steps of this strategy culminated in the acquisition of Tom Brown Inc. in 2004, leading to formation of the Mid-Continent Business Unit in Dallas. Its East Texas team devised a strategy to explore the Jurassic sequence off the East Texas west shelf productive trend into an expanded shelf slope to basin sequence. This play has since evolved to the “Deep Bossier” Sandstone Play and resulted in the discovery and development of John Amoruso Field.
Almost concurrently, armed with experiences over decades and multiple successful cycles of exploration in the west shelf area, Legends Exploration, a partnership of John Amoruso with Larry Bartell and Denny Bartell, had convinced investors in Leor Energy with a very similar concept. Leor acquired much of the core lands in the discovery which was eventually named after Amoruso. EnCana first farmed into and subsequently acquired all of the interests of Leor.

John Amoruso Field provides a new measure for discoveries with its highly productive reservoirs up to 62 MMcf/d per well. It also illustrates the evolution of thought required beyond discovery, leading to quick production growth and successful enhanced development of the field.
Using similar unconventional thinking and entry strategies on a broader scale, EnCana acquired significant additional positions in the Jurassic Trend. Closely following the Amoruso success, in late 2005 and early 2006 EnCana drilled the discovery wells in Red River Parish, Louisiana for the Haynesville gas shale play. Notably, EnCana also recognized significant Bossier shale pay in that area. Although not widely known to industry prior to 2008 the Haynesville Play already has shifted gas shale paradigms for depth (up to 14,000 feet) pressure (up to 12,500 PSI) well productive rates (20-30 MMcfd) and for recoverable resource size (250 Tcfg).
For three decades industry, academic and governmental views for natural gas production decline provided doom and gloom scenarios for US supply. It now appears that a new trend, Haynesville, has been discovered that is potentially the largest continuous gas deposit in North America. As well, with John Amoruso Field, a new play has been established with world class productive wells. Both required unconventional discovery thinking and considerable evolution of thought beyond discovery.

Discovery thinking for resource plays requires a global view of the petroleum system. All of the primary lithologies of the Jurassic sequence are potential reservoirs—even the shale/source. Deep basin over-pressured mature gas cells provide the primary setting for Jurassic gas resource trends. Economics are very robust where there is sufficient scale, repeatability and low geologic risk for gas manufacturing processes.