Southwestern Energy and The Fayetteville Shale Play - Lessons Learned

The Fayetteville Shale is a Mississippian-age gas shale reservoir that is the geologic equivalent of the Barnett Shale found in north Texas. This unconventional gas play is located on the Arkansas side of the Arkoma Basin, ranging in thickness from 50 to 550 feet and in depth from 1,500 to 6,500 feet within the Southwestern Energy (SWN) play area. To increase the value derived from this large resource base play, it was essential to rapidly improve drilling, completion and production approaches as early as possible in the life of this shale gas project. Integration of geology, geophysics, land, reservoir, drilling, completion, production and economic management has been essential to our wells’ performance. Southwestern Energy rapidly moved from vertical appraisal wells to horizontal wells stimulated with 1 to 14 individual stages. Well over 700 horizontal wells have been successfully drilled and completed to date with a variety of drilling, stimulation and completion methodologies. This presentation describes the intensive data collection and analysis process employed over a relatively short period of time to climb the well construction, completion and production learning curve for this shale, including geological and geophysical analysis and strategy, completion and stimulation design, well construction design, and production analysis. Moreover, key operational, analytical, technical and economic strategies will be discussed that helped lead Southwestern Energy through the early exploration and development of its Fayetteville Shale asset.