A BRIEF OVERVIEW OF UPPER DEVONIAN BLACK SHALE NATURAL GAS WELL DEVELOPMENT IN PENNSYLVANIA YEAR ENDING 2013

Amy Randolph
amouise@msn.com

POSTER PRESENTATION

Much attention has being given to the Ordovician-age Utica shale as the next big natural gas shale play in Pennsylvania, following the success of the Marcellus shale development. In most of Pennsylvania, however, the Utica shale lies several thousand feet deeper than the Marcellus shale. This greater depth could be cost-prohibitive for Utica natural gas development across much of Pennsylvania except in those westernmost counties of the state where the Utica is located at much shallower depths.

Upper Devonian-age black shales (in particular, the Burket and Geneseo shales) lying immediately above the Tully limestone have been tested by some natural gas operators as the units are penetrated by drilling targeting the deeper Middle Devonian-age Marcellus shale. Favorable results have subsequently led to the development of and production from nearly forty such wells within Pennsylvania at the end of 2013; several of these have also produced natural gas liquids from wells within western and southwestern Pennsylvania counties. Another 150 wells associated with the Burket and Geneseo shales were in various stages of permitting, drilling, completion, and being connected to pipeline at the end of 2013.

Some Burket and Geneseo wells are being completed on the same well pads as those from which Marcellus wells have been drilled. This stacked production is economically beneficial through the shared use of infrastructure.

The Burket shale was first described by Charles Butts in 1918, and was named after a small community located southwest of the city of Altoona in Blair County, PA. The Burket's parent formation is the Harrell Formation, named for a small railroad station east of Altoona. The Burket shale is that basal black shale lying above the Tully limestone where there is no other black shale lying above it.

The Geneseo shale was described shortly thereafter, by G.H. Chadwick, in 1920. Its parent formation is the Genesee Formation of New York State. In Pennsylvania, it is the basal black shale lying above the Tully limestone if the Middlesex shale lies above it.

The use of these black shale unit names by current natural gas drilling operators in PA may be more a function of a company's simple preference for one name over another, rather than based on the actual stratigraphic relationship of these units relative to any one particular completed gas well.

There are several older vertical natural gas wells within the state which produce gas from the Burket/Geneseo, in combination with one or more other Upper and Middle Devonian black shales; one of these was completed as early as 1949 in Clearfield County.