Producing and Potential Shale Gas Reservoirs of the Eastern United States, James L. Coleman, Christopher S. Swezey, Robert C. Milici, and Robert T. Ryder, U.S. Geological Survey, 12201 Sunrise Valley Drive, MS 956, Reston, VA 20192, jlcoleman@usgs.gov, cswezey@usgs.gov, rmilici@usgs.gov, rryder@usgs.gov

Efforts to acquire exploration and production leases for shale gas reservoirs have accelerated recently, coincident with increasing prices and decreasing supplies of domestic oil and natural gas. New leasing and drilling proposals typically cite the success stories of the Mississippian Barnett and Fayetteville shales in Texas and Arkansas to promote new investment opportunities. East of the Mississippi River, shale gas reservoirs that are currently being produced or undergoing testing in the Appalachian, Michigan, and Illinois Basins include the following: the Cambrian Conasauga Formation, the Ordovician Utica Shale, various Upper Devonian shales (e.g., Ohio, Chattanooga, Sunbury, Antrim, and New Albany), the Mississippian Floyd Shale, and various Pennsylvanian shales associated with adjacent coal beds. Other stratigraphic intervals in the region that may become shale gas reservoirs are the Precambrian Nonesuch Formation and generally equivalent shales of various Precambrian rift basins, the Silurian shale with a Gondwanan affinity in North Florida–South Georgia, the Triassic Lockatong Formation and generally equivalent shales in the Mesozoic rift basins, and the Cretaceous Eagle Ford Shale of the Gulf Coast Basin. All of these shale gas intervals may be considered as either identified or potential petroleum source rocks and reservoirs, although the reservoirs are unconventional or continuous in nature. Natural gas within these shale reservoirs may be thermogenic and (or) biogenic, and different exploration concepts may be needed for these different gas types. Examination of each potential interval and comparison with existing producing intervals show key commonalities and potential significant differences.