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Assessment of Undiscovered Petroleum Resources in the Wolfcamp Shale and Bone Spring Formation of the Delaware Basin, Permian Basin Province, Texas and New Mexico

Stephanie B. Gaswirth
Central Energy Resources Science Center, U.S.
Geological Survey

The U.S. Geological Survey (USGS) is nearing completion of an assessment of undiscovered, technically recoverable continuous oil and gas resources of the Permian Basin of west Texas and southeast New Mexico. In 2016, the USGS completed the assessment of continuous oil and associated gas in the Wolfcamp shale and Spraberry Formation of the Midland Basin. The estimated mean resource for both the Wolfcamp and Spraberry is 24 billion barrels of oil (BBO), making it the largest USGS domestic continuous oil assessment to date.

For the past two years, the emphasis of the resource assessment in the Permian Basin has been in the continuous petroleum accumulations of the Wolfcamp shale and Bone Spring Formation of the Delaware Basin. Both reservoirs have been the focus of increased horizontal drilling during the past decade, with industry targeting multiple oil and/or gas saturated intervals. Assessment units (AUs) for the Wolfcamp shale and the Bone Spring Formation were identified and evaluated using geologic and production data. The following eleven AUs were defined: (1) Delaware Basin Wolfcamp D Continuous Gas AU; (2) Delaware Basin Wolfcamp C Continuous Gas; (3) Delaware Basin Wolfcamp C Continuous Oil; (4) Delaware Basin Wolfcamp B Lower Continuous Oil AU; (5) Delaware Basin Wolfcamp B Upper Continuous Oil AU; (6) Delaware Basin Wolfcamp A Continuous Oil AU; (7) Third Bone Spring Continuous Oil AU; (8) Second Bone Spring Continuous Oil AU; (9) First Bone Spring Continuous Oil AU; (10) Lower Avalon Shale Continuous Oil AU; and (11) Upper Avalon Shale Continuous Oil AU. The assessment will be completed in the Fall of 2018.