

## Delaware Basin tops USGS list of oil and gas resource plays

The Delaware Basin in Texas and New Mexico has the most oil and gas resources ever estimated by the U.S. Geological Survey, the USGS announced in December. The Wolfcamp shale and overlying Bone Spring formation in the Delaware Basin portion of Texas and the New Mexico Permian Basin province contain 46.3-billion barrels of oil, 281 Tcf of gas and 20-billion barrels of gas liquids, according to the assessment.

This estimate is for undiscovered, technically recoverable, “continuous” unconventional hydrocarbon resources.

Undiscovered resources are those that are estimated to exist based on geologic knowledge and already established production, while technically recoverable resources are those that can be produced using currently available technology and industry practices. Whether or not it is profitable to produce these resources has not been evaluated.

The Wolfcamp shale in the Midland Basin portion of the Permian Basin province was assessed separately in 2016, and at that time, it was the largest assessment of continuous oil conducted by the USGS. The Delaware Basin assessment of the Wolfcamp shale and Bone Spring formation is more than two times larger than that of the Midland Basin.

“The results ... demonstrate the impact that improved technologies, such as hydraulic fracturing and directional drilling, have had on increasing the estimates of ... resources,” said **Walter Guidroz**, program coordinator of the USGS Energy Resources Program.

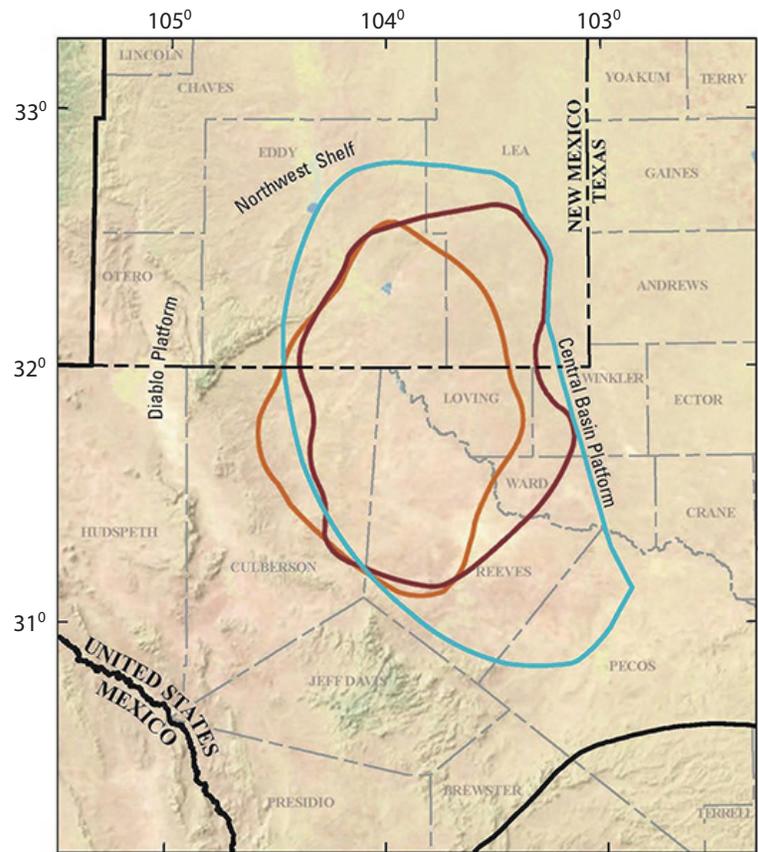
## Average annual oil price for SEC reporting soars 28 percent

The annual average prices for reporting year-end 2018 petroleum reserves to the U.S. Securities and Exchange Commission showed an increase in the WTI Cushing crude oil benchmark to \$65.56 per barrel, an increase of 28 percent over last year.

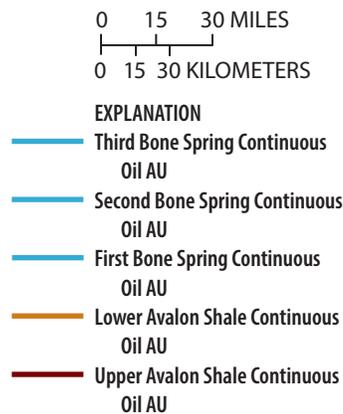
The Henry Hub gas benchmark had a more modest increase of 4 percent to \$3.101 per MMBTU. The Brent crude oil benchmark settled in at \$71.54 per barrel, a 31 percent increase.

Other benchmarks and information on using differentials are posted at [www.ryderscott.com/wp-content/uploads/FDOM\\_Benchmark\\_Prices.pdf](http://www.ryderscott.com/wp-content/uploads/FDOM_Benchmark_Prices.pdf)

The prices are based on the unweighted, arithmetic average of the first-day-of-the-month price for each month in the calendar year. E-mail inquiries to [fred\\_ziehe@ryderscott.com](mailto:fred_ziehe@ryderscott.com).



Base map from U.S. Department of the interior National Park Service



Permian Basin Province boundary is shown in plum.

*Assessment units for the Wolfcamp Shale and Bone Spring Formation of the Delaware Basin.*