

# **AN UPDATED PRELIMINARY STRUCTURE MAP ON THE TOP OF THE PRECAMBRIAN UNCONFORMITY AND LOCATION OF WELLS DRILLED DEEPER THAN THE KNOX DOLOMITE WITH REPORTED SHOWS OF OIL AND GAS**

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## **ABSTRACT**

A new statewide structure contour map on the top of the Precambrian unconformity is presented for review. The map was hand contoured honoring well data, seismic data, and known faults. The nine wells that penetrated the Precambrian surface without encountering the Cambrian Mount Simon Sandstone are marked with a special symbol on the map. In addition, 41 wells that had hydrocarbon shows reported below the Knox are shown. A contour interval of 100 feet used in the western three-fourths of the state, and intervals of 500 and 1,000 feet are used in eastern Ohio and adjacent areas. A break in slope, or increase in dip, in central Ohio forms a north-south ridgelike topographic feature on the top of the Precambrian surface. This ridge-like topographic feature is coincident with the current western limit of metamorphic rocks of the Precambrian Grenville Province. This feature defines the eastern edge of the Central Ohio Platform, and implies that deeply eroded Grenville Province set the stage for future development of Appalachian Basin architecture. Other major struc-

tural features shown on the map include the Bowling Green fault zone, the Findlay Arch, and the Central Ohio Platform separating the Appalachian, Illinois, and Michigan Basins.

The 1967 statewide map for Ohio had just 94 wells available from Ohio as control for mapping this deep surface. Many deep wells have been drilled in Ohio since that time, especially in western Ohio. The current map uses 203 wells from Ohio and 49 wells from surrounding states and Canada. In addition, over 600 miles of public-domain and proprietary seismic data were used as additional control. This map depicts a highly generalized interpretation of faults and structures related to the Precambrian basement. Many of the wells with reported shows and production of hydrocarbons below the Knox Dolomite are proximal to structures and faults. Current production from the Conasauga Formation in northern Kentucky is encouraging to operators searching for sub-Knox production in a region which is relatively untested.