

NORTH AMERICAN EXPLORATIONISTS

Recent Wolfcamp Carbonate Oil Reservoir Discoveries Utilizing 3-D Seismic Data in the Midland Basin of West Texas

Wayne Gibson

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Social Period, 5:30 p.m., Dinner and Meeting, 6:30 p.m.
Post Oak Doubletree Inn

Currently two of the successful oil plays of the Permian Basin involve the precision delineation of Wolfcamp oil reservoirs at depths of 8000' to 9000'. This delineation is being accomplished utilizing 3-D seismic data along with detailed subsurface data interpretation. One of these stratigraphic plays is situated in Western Upton County, Texas and the other one is located in Glasscock County, Texas. Both plays are for oil trapped in closed system carbonate detrital reservoir pods distributed along slope to basin transitional trends. Seismic signature analysis is a key aspect of successful exploration in each of these plays.

Some of the 1992 and 1993 oil wells completed in the above two plays will be highlighted, along with the methods leading to these successes. Success rates for wildcat risk wells in the sprawling

Triumph Field of Upton County are better than 80%. A typical 1992 Triumph "Field" well was potential tested flowing approximately 500 BOPD, plus 500 MCFG. Successful completion rates prior to 3-D seismic data interpretation are estimated to be approximately 15% or less. Chevron is the major operator and innovator in this play.

In the Glasscock County Wolfcamp play, the incorporation of 3-D seismic data interpretation has boosted the successful oil well completion rate from less than 15% (prior to 3-D) to more than 70%. Trend Exploration, the current major operator in this play, and Matador Drilling Co., have successfully completed 10 of 14 Wolfcamp oil wells drilled, following a 16 mile 3-D seismic survey. In this play, Trend's best initial potential was more than 1700 BOPD but a typical well was completed flowing approxi-

mately 500 BOPD.

A cross-section demonstrates the limited aerial extent and thick net pay character of one of Trend's most spectacular completions. The 13D Powell "2" was completed flowing 1111 BOPD in December 1992. It was surrounded by dry holes. One of these dry holes was located only 600 ft.; to the southwest. The cross-section shows the channeled fan nature of the reservoir and demonstrates the need for precision prospect delineation prior to drilling. Trend's wells have been completed in the Cobra, Powell and Blalock Lake South Fields; however, data presented illustrate the wildcat nature of each field well.

Charles Garvey, Bruce Brady and Paul Dolliver are involved with this talk, and may assist in the presentation with Wayne Gibson.

WAYNE R GIBSON – Biographical Sketch

Wayne R. Gibson received a B.S. Degree from Susquehanna University in eastern Pennsylvania. Later, he studied at the University of Wisconsin at Milwaukee and received an M.S. degree. Wayne has been employed by Texaco and Kerr-McGee and has lived in the Permian Basin since 1971. He is an AAPG certified petroleum geologist.

Wayne is an honorary life member and past president of the West Texas Geological Society. He has co-authored the AAPG's annual developments paper

for the West Texas and SE New Mexico region numerous times. He has also written a paper for the GSA-DNAG and one on stratigraphic exploration using 3-D seismic which was published in World Oil in September of 1992.