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# Association Round Table

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## AAPG-SEPM/EMD/DPA 1981 ANNUAL MEETING San Francisco, California

### Additional Abstracts

GRIES, ROBBIE, Mabee Petroleum Corp., Denver, CO

#### Oil and Gas Prospecting Beneath Precambrian in Rocky Mountains

Although the Rocky Mountains have their first large sub-Precambrian hydrocarbon discovery, only 15 wells have been drilled through Precambrian to test the 3 to 6 million acres (1 to 2 million ha.) of sedimentary rocks that are concealed and virtually unexplored beneath mountain front thrusts. More than half of these wells had oil and gas shows and one was a producing development oil well. These wells have not only set up an exciting play for the future, they have also helped define the structural geometry of the mountain front thrusts of the Rocky Mountain foreland, including the angle of the thrust and the presence or absence of fault slivers of overturned Mesozoic or Paleozoic rocks. Most important for further geophysical exploration, these wells have provided vital data on seismic velocities in Precambrian rocks. Analysis of these data will stimulate further exploration along the fronts already drilled: the Emigrant Trail thrust, the Washakie thrust, the Wind River thrust, the Uinta Mountain thrust, and the thrust at the north end of the Laramie Range.

The geologic success of these wells has encouraged leasing and seismic acquisition on every other mountain front thrust in the Rockies. Wells are presently being drilled on the Casper arch and the west flank of the Big Horn basin adjacent Oregon Basin field. An unsuccessful attempt to drill through the Arlington thrust of the Medicine Bow Range will probably only momentarily daunt that play, and the attempted penetration of the Axial arch in Colorado has not condemned that area. Untested areas that will be explored in the near future are: the south flank of the Owl Creek Range, the northeast flank of the Beartooth Mountains in Montana, the east and west flanks of the Big Horn Mountains, the north flank of the Hanna basin, the south flank of the Uinta Mountains, the White River uplift, the north flank of North Park basin, and the Front Range.

JILIANG, YANG, Scientific Research and Design Inst. of Daqing Oil Field, China

#### Structure and Petroleum Accumulation in Songliao Basin, China

The Songliao basin of northeast China is a Mesozoic-Cenozoic continental sedimentary basin and belongs to the intracratonic combination type. Structurally, it is a huge depression overlying a downfaulted sag. The formation of the basin was related to global plate activity, and its growth underwent four stages of separate downfaulting, rift-valley downfaulting, depression, and shrink-folding, forming correspondingly

various types of deposit, combination of source-reservoir-cap rocks and traps. The good coordination between the formation timing of traps and the time of generation and migration of hydrocarbon was important in the formation of a great number of oil and gas pools in this basin. Besides the good entrapment effect of the large anticlinal structure, the coordination of several favorable conditions for generation, accumulation, and preservation of petroleum is also an important factor for the formation of Daqing oil field.

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