DISCUSSION

Areas of highest density of faulting west of Farmington (Fig. 2) are the same as those described by Huffman (1987) and by Thaden (1990), who mapped outcrop and shallow reflectors in the same area. The faults mapped on the map west of Farmington (Fig. 2) are associated with a basin shot-point map. Each of the faults was annotated as to style and direction of movement. Faults were not run on many of the wells, so some of the synthetic seismograms were generated without fault information. Where available, sonic and formation density logs were used, but because these logs were not run on many of the wells, some of the synthetic seismograms were generated without fault information. Time offset are shown on the map, and all faults were plotted as straight line segments.

A basin shot-point map was used to map outcrop and shallow reflectors in the same area. The faults mapped on the map west of Farmington (Fig. 2) are associated with a basin shot-point map. Each of the faults was annotated as to style and direction of movement. Faults were not run on many of the wells, so some of the synthetic seismograms were generated without fault information. Time offset are shown on the map, and all faults were plotted as straight line segments.

Several aspects of the fault pattern and density should be noted. There is an apparent reduction in the area of greatest faulting west of Farmington, which correlates well with the geologic interpretations of Huffman (1987) and Thaden (1990). Similarly, the fault pattern at the end of the late Paleozoic (Fig. 4) may be related to the boundary between the Yavapai and Mazatsal orogens, which are manifested today as the Mogollon Mountains and the San Francisco Mountains, respectively. The Mogollon Mountains are uplifted and tilted to the west, whereas the San Francisco Mountains are tilted to the east. This boundary is marked by a transition from brittle to ductile behavior, with the Mogollon Mountains and the San Francisco Mountains being the two main fault systems.

The seismic data set available to the authors is composed of long regional lines and shorter lines used for oil and gas prospect evaluation. Generally, data quality was adequate to resolve subsurface structure on a coarse scale, but it was not sufficient to resolve details of the fault pattern. Of the data, 10% were shot in 1968, 10% in 1969, and 80% in 1970. Of the data collected in 1968, 50% was shot in the late Paleozoic, 30% in the Mesozoic, and 20% in the Cenozoic. Of the data collected in 1969, 50% was shot in the late Paleozoic, 30% in the Mesozoic, and 20% in the Cenozoic. Of the data collected in 1970, 50% was shot in the late Paleozoic, 30% in the Mesozoic, and 20% in the Cenozoic. Of the data collected in 1970, 50% was shot in the late Paleozoic, 30% in the Mesozoic, and 20% in the Cenozoic. Of the data collected in 1970, 50% was shot in the late Paleozoic, 30% in the Mesozoic, and 20% in the Cenozoic. Of the data collected in 1970, 50% was shot in the late Paleozoic, 30% in the Mesozoic, and 20% in the Cenozoic. Of the data collected in 1970, 50% was shot in the late Paleozoic, 30% in the Mesozoic, and 20% in the Cenozoic. Of the data collected in 1970, 50% was shot in the late Paleozoic, 30% in the Mesozoic, and 20% in the Cenozoic.